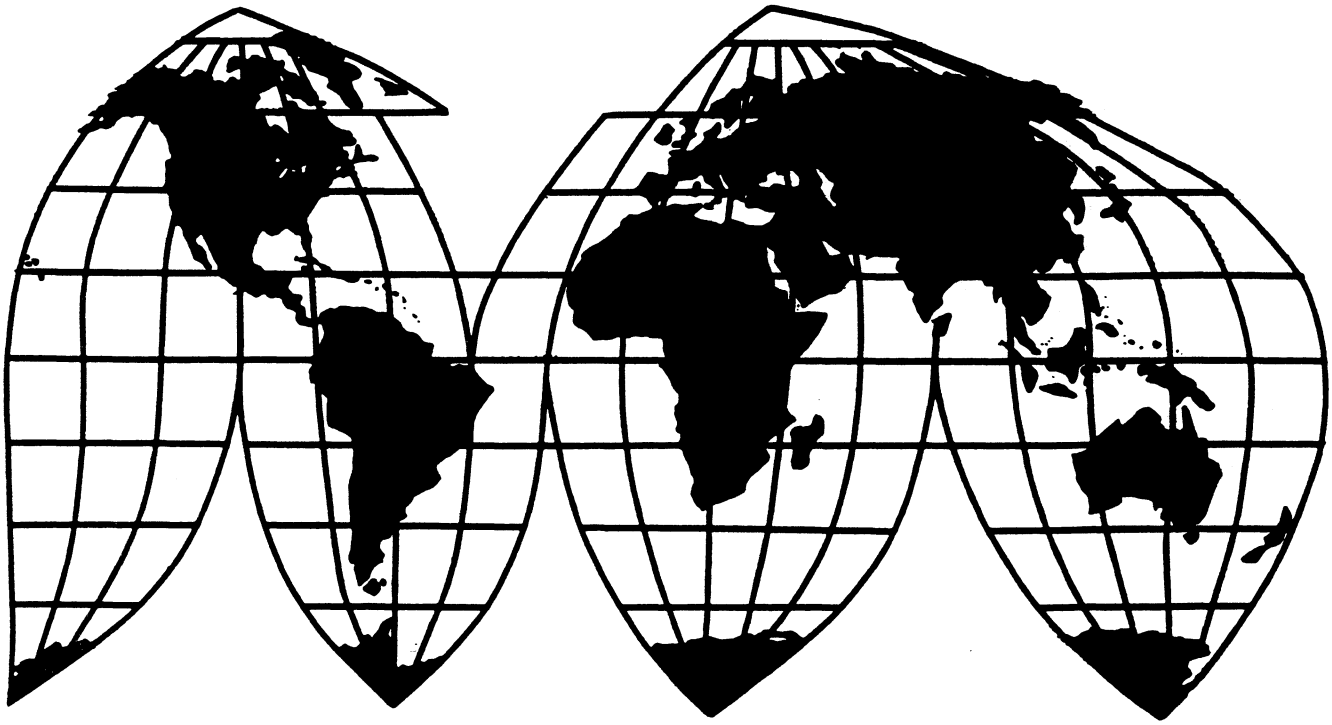
# Honey From China

Investigation No. TA-406-13

**Publication 2715** **January 1994**

## U.S. International Trade Commission



Washington, DC 20436

# U.S. International Trade Commission

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# PART I

# DETERMINATION AND VIEWS OF THE COMMISSION

## UNITED STATES INTERNATIONAL TRADE COMMISSION

### Investigation No. TA-406-13

### HONEY FROM CHINA

Determination

On the basis of the information developed in the subject investigation, the Commission determines[1] that market disruption exists with respect to imports of honey[2] from China--that is, imports of honey from China are increasing rapidly so as to be a significant cause of threat of material injury to a domestic industry.[3]

Findings and recommendations

Chairman Newquist, Commissioner Rohr and Commissioner Nuzum find and recommend that in order to remedy the market disruption found with respect to imports of honey from China, it is necessary to impose a tariff-rate quota on such honey for a 3-year period, to be administered on a quarterly basis, with imports entered within a quarterly quota of 12.5 million pounds of honey from China to be dutiable at a rate of 25 percent ad valorem, and over-quota imports entered during any calendar quarter to be dutiable at a rate of 50 percent ad valorem, with such duties imposed in lieu of the existing rate of duty. The Commissioners also recommend review after 3 years, or earlier, depending on the status of the federal honey loan support program.

Vice Chairman Watson finds and recommends that in order to remedy the market disruption found with respect to imports of honey from China, it is necessary to impose a tariff-rate quota on such honey for a $2^1/_2$ year period, with a rate of 15 percent ad valorem on the first 60 million pounds of honey imported from China annually, and a rate of 25 percent ad valorem on such honey that exceeds 60 million pounds. Such duties should be in addition to current duties on such honey. Vice Chairman Watson also recommends review not later than 2 years after imposition of relief, with interested parties given the right to petition the ITC for a review of the remedy proposed at any time after 1 year following any relief granted by the President.

Commissioner Brunsdale, although finding in the negative with respect to market disruption and honey from China, recommends that if the President imposes a remedy, it be a tariff-rate quota for a 3-year period on such honey, with no additional duty imposed on the

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[1] Commissioner Brunsdale dissenting.

[2] The honey products included in this investigation are imports of natural honey, artificial honey mixed with natural honey, and preparations of natural honey, provided for in heading 0409 and subheadings 1702.90 and 2106.90 of the Harmonized Tariff Schedule of the United States (HTS).

[3] Section 406(e)(2) of the Trade Act of 1974 defines market disruption as existing whenever "imports of an article, like or directly competitive with an article produced by such domestic industry, are increasing rapidly, either absolutely or relatively, so as to be a significant cause of material injury, or threat thereof, to such domestic industry."

first 60 million pounds of honey from China entered annually, but with an additional duty of 10 percent ad valorem imposed on imports that exceed 60 million pounds.

Commissioner Crawford finds and recommends that in order to remedy the market disruption found with respect to imports of honey from China, it is necessary to impose a duty of 10 percent ad valorem, in lieu of the existing rate of duty, on all honey imported from China for a period of three years. Commissioner Crawford also recommends review after 3 years.

Background

This report is being furnished to the President pursuant to section 406(a)(3) of the Trade Act of 1974 (19 U.S.C. § 2436(a)(3)) and is based on an investigation conducted under section 406(a)(1) of the Trade Act. The Commission instituted this investigation effective October 6, 1993, following receipt of a request from the United States Trade Representative.

Notice of the institution of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of October 20, 1993 (58 FR 54169). The hearing on injury and relief was held in Washington, DC, on December 2, 1993, and all persons who requested the opportunity were permitted to appear in person or by counsel.

## VIEWS OF CHAIRMAN NEWQUIST, VICE CHAIRMAN WATSON, AND COMMISSIONERS ROHR, CRAWFORD AND NUZUM

We determine that, with respect to imports of natural honey, artificial honey containing natural honey, and preparations of honey from China,[1] market disruption exists within the meaning of section 406 of the Trade Act of 1974 (Trade Act).[2]

Section 406 requires the Commission to investigate and determine "with respect to imports of an article which is the product of a Communist country, whether market disruption exists with respect to an article produced by a domestic industry."[3] The term "market disruption" is defined as follows:

> Market disruption exists within a domestic industry whenever imports of an article, like or directly competitive with an article produced by such domestic industry, are increasing rapidly, either absolutely or relatively, so as to be a significant cause of material injury, or threat thereof, to such domestic industry.[4]

In reaching an affirmative determination under section 406, the Commission has found that:

(1) imports are rapidly increasing (either absolutely or relatively);
(2) the domestic industry is materially injured or threatened with material injury; and
(3) the rapidly increasing imports are a "significant cause" of such material injury or threat of material injury.[5]

Section 406 is an adjunct provision to the import relief provisions contained in sections 201-203 of the Trade Act, and certain import relief provisions of the latter are

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[1] These imports are provided for in heading 0409 and subheadings 1702.90 and 2106.90 of the Harmonized Tariff Schedule of the United States (HTS).

[2] 19 U.S.C. § 2436, as amended by the Omnibus Trade and Competitiveness Act of 1988 (OTCA), H.R. 4848, Pub. L. 100-418, 102 Stat. 1107.

[3] 19 U.S.C. § 2436(a). The term "Communist" is defined to mean "any country dominated or controlled by communism," but there is no statutory list of communist countries or factors to be considered in determining whether a country is "dominated or controlled" by communism.

Although no party asserts that China is not a Communist country, the Chinese producers argue that section 406 is not applicable because the Chinese honey industry is dominated by market forces. Pre-Hearing Brief of Tianjin Native Produce Import & Export Corp. et. al. at 7-11; Post-Hearing brief at 6-9. Similarly, the importers state that it is "questionable whether the legislative assumptions behind the operation of Section 406 in fact even apply to the Chinese honey industry." Pre-Hearing Brief of Honey Users Council of America at 45.

These parties apparently confuse the Communist country jurisdictional requirement of section 406 with the title VII (antidumping and countervailing duty) concept that allows the Department of Commerce to examine whether a particular country or industry is subject to market or nonmarket forces. There is no similar concept applicable to section 406 investigations, as there is no requirement in section 406 that the imports in question be unfairly traded.

[4] 19 U.S.C. § 2436(e)(2)(A).

[5] See e.g., Ammonium Paratungstate and Tungstic Acid from the People's Republic of China, Inv. No. TA-406-11, USITC Pub. 1982 (June 1987).

explicitly incorporated into section 406.[6] With respect to other provisions, the legislative history states that market disruption definition of section 406 "is formulated along lines similar to the criteria for import relief under section 201. . . . However, the market disruption test is intended to be more easily met than the serious injury tests of section 201."[7] Accordingly, in previous section 406 investigations, the Commission has looked to the import relief provisions for guidance, and we likewise have done so in this investigation as noted in the discussion that follows.

## I. The Domestic Industry

The first step in our analysis is to define the domestic industry producing an "article like or directly competitive" with the imported article.[8] The statute does not define the phrase "like or directly competitive"; however, the legislative history of the Trade Act of 1974 discusses it as follows:

> The words "like" and "directly competitive", as used previously and in this bill are not to be regarded as synonymous or explanatory of each other, but rather to distinguish between "like" articles and articles which, although not "like," are nevertheless "directly competitive." In such context, "like" articles are those which are substantially identical in inherent or intrinsic characteristics (i.e., materials from which made, appearance, quality, texture, etc.), and "directly competitive" articles are those which, although not substantially identical in their inherent or intrinsic characteristics, are substantially equivalent for commercial purposes, that is, are adapted to the same uses and are essentially interchangeable therefor.[9]

The imported articles subject to this investigation are natural honey, artificial honey containing natural honey, and preparations of honey from China, provided for in heading 0409 and subheadings 1702.90 and 2106.90 of the HTS. The imports covered under the relevant HTS classifications include all honey, regardless of the stage of processing.[10] Most honey imported from China is partially processed and imported in bulk form by U.S.

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[6] Section 406(a)(2) specifically makes applicable the provisions of section 202(a)(3) (the transmission of copies of the petition to USTR and other Federal agencies directly involved), section 202(b)(4) (requirement for a public hearing), and section 202(c)(4) (considerations involved in determining the domestic industry concerned). See 19 U.S.C. § 2436(a)(2). Section 406(b) also makes applicable, with regard to remedy, the provisions of sections 202 and 203 of the Trade Act of 1974 as those provisions existed immediately prior to the 1988 amendments. See 19 U.S.C. § 2436(b).

[7] S. REP. NO. 1298, 93rd Cong., 2d Sess. at 212 (1974) (Report on the Trade Reform Act of 1974, which was later renamed the Trade Act of 1974).

[8] 19 U.S.C. § 2436(e)(2)(A). The statute specifically adopts considerations regarding domestic industry set forth in section 202(c)(4). 19 U.S.C. § 2436(a)(2), incorporating § 2252(c)(4) by reference. In section 202(c)(4), the term "domestic industry" is defined in terms of producers of an article "like or directly competitive" with the imported article.

[9] H.R. REP. NO. 571, 93d Cong., 1st Sess. at 45 (1974); S. REP. NO. 1298 at 121-122.

[10] See Confidential Staff Report (CR) at I-5, I-15 and I-40-41; Public Report (PR) at II-4, II-9 and II-28.

packers who then, at a minimum, repackage the honey for sale to consumers.[11] In many instances, the U.S. packer-importers perform certain additional processing operations, including blending honey from various sources, heating the honey to aid processing and retard spoilage, filtering the honey, skimming foreign material, and pouring the honey into containers.[12] A small amount of honey imported from China is already packaged for retail sale.[13] Thus, the honey may be imported from China in either bulk or packaged-for-retail form.

Likewise, some U.S. beekeepers extract, process, package, and sell their own honey, whereas others sell their honey in bulk (which may or may not be further processed) to commercial packers.[14] All parties agree that domestic honey is "like" the honey imported from China.[15] We find that domestic honey whether, raw or processed, is like or directly competitive with the imported article. Accordingly, we find that the domestic industry consists of domestic manufacturers that produced honey during the period of investigation, January 1989 through September 1993.

In this investigation we considered whether the packers should be included in the domestic industry. Neither section 406 nor section 201 provides express guidance on this question. However, in 1976, the Commission addressed this question in an investigation of honey pursuant to section 201.[16] In that investigation, the Commission concluded that "the facilities of U.S. beekeepers which produce and extract honey and the domestic facilities used for the buying, processing, packaging, and marketing of honey" constituted a single domestic industry.[17]

In this investigation, the importers contend that many of the factors which persuaded the Commission to include the packers in the domestic industry in the 1976 section 201 investigation are still applicable. They argue that "a large percentage" of honey is still marketed by producer-owned cooperatives such as Sioux Honey Association. In fact, today independent packers account for more U.S.-produced honey than they did in 1976.[18] Accordingly, it is no longer true that more than half the honey sold to consumers is produced and processed by the same individual, although it is still true that a significant quantity is processed by the same individual. Additionally, it is still true that most honey undergoes at least some processing before it is sold to retail purchasers, food service operations, or industrial users.[19] It is still also true that the value added to the product as a result of

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[11] See Table 26, CR at I-94, PR at II-70; Post-Hearing Brief of Honey Users Council of America at 12.

[12] CR at I-16-17, PR at II-10-11.

[13] Id.

[14] CR at I-15-16, PR at II-9-11; CR at I-54, PR at II-38.

[15] The Chinese producers and the U.S. importers argue that the imported and domestic products do not directly compete in the same market segment. However, this argument is made in the context of causation and not in the context of the relevant article like or directly competitive with the imported article.

[16] Honey: Report to the President, Inv. No. TA-201-14, USITC Pub. 781 (June 1976).

[17] Id. The Commission based this conclusion on the following factors: (1) more than half the honey produced in the United States was produced and processed by the same individual and found its way to the consumer without going through commercial wholesale channels; (2) nearly half the honey sold through commercial wholesale channels was marketed by producer-owned cooperative marketing associations, such as the Sioux Honey Association; and (3) most honey must be processed in order to be sold to the ultimate retail purchaser. The Commission also noted that the value added to the product as a result of processing operations was small relative to the value of the product.

[18] CR at I-54 and I-75, PR at II-38 and II-56.

[19] CR at I-54, PR at II-38.

processing operations is small--between 10 and 20 percent--relative to the value of the final product.[20]

There is some degree of overlap in financial interest between beekeepers and processors to the extent that certain beekeepers pack and sell their own honey or use cooperatives to pack and sell their honey, although the degree of overlap is far less than it was in 1976. In addition, the raw honey accounts for a high percentage of the value of the product sold to consumers, and nearly all honey extracted in the United States is processed prior to sale to consumers.

We find that the domestic industry should include packers, given the unbroken chain from the beekeeping operations to the processing of honey; the necessity of processing in order to market the honey; the fact that the honey is not transformed in processing; and the existence of one large cooperative that accounts for a significant share of honey sales.[21]

Although the domestic beekeepers associations do not contend that the packers as a group are not a part of the domestic industry, they do argue that the Commission should exclude those packers who "benefit substantially from low-priced PRC imports" or, at least should give limited weight to the questionnaire responses of those packers.[22] The importers and the Chinese producers respond that it is not practicable to exclude the importer/packers from the domestic industry because there are no packers that pack only Chinese honey and a "massive portion" of U.S. packers pack "some imported honey."[23]

Section 406 does not authorize the Commission to exclude a domestic producer from the domestic industry because of its significant importing activities. It does, however, provide for the exclusion of nondomestic production of a domestic producer, i.e., the producers' imports. Specifically, section 202(c)(4)(A), which is incorporated by section 406(a)(2), provides as follows:

> [I]n determining the domestic industry producing an article like or directly competitive with an imported article, the Commission--
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> (A) to the extent information is available, shall, in the case of a domestic producer which also imports, treat as part of such domestic industry only its domestic production.[24]

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[20] Table 21, CR at I-80, PR at II-61; Table 22, CR at I-81, PR at II-61.

[21] See CR at I-75; Transcript of Hearing (Tr.), Dec. 2, 1993, at 47 (testimony of Sioux Honey Association officer). See also discussion infra at note 66.

[22] Joint Pre-Hearing Brief of The American Beekeeping Federation and the American Honey Producers Association at 11-12; Joint Post-Hearing Brief at 6-7. Their position is based on the "related parties" provision of the antidumping and countervailing duty provisions contained in title VII of the Tariff Act of 1930 (19 U.S.C. § 1677(4)(B)), which they contend should apply by analogy to section 406 to allow for the exclusion of the packers who import "substantial" amounts of Chinese honey. The domestic associations argue that an application of that provision shows that the packers who import substantial amounts of Chinese honey benefit substantially from the imports, and that the data of these packers therefore would distort the industry data.

[23] Post-Hearing Brief of Tianjin Native Produce Import & Export Corp., et. al. at 10; Post-Hearing Brief of Honey Users Council of America at 12-13, n.16.

[24] 19 U.S.C. § 2252(c)(4)(A), incorporated by 19 U.S.C. § 2436(a)(2). This provision was first introduced in 1974, along with a provision permitting the Commission to exclude operations of domestic producers that are unrelated to the "like or directly competitive" product lines. See H.R. REP. NO. 571 at 45-46. The 1988 act substituted the word "shall" for "may," thus requiring the Commission to exclude data relating to imports when possible. As both the House and Senate reports to the 1988 bill explained, the amended legislation now "requires, rather than permits, the ITC, in the

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Thus, having determined that the domestic industry includes the packers, we may, to the extent information is available, consider only the domestic production operations of the packers.[25] Given that all packing operations performed by the domestic packers take place in the United States, the statute does not require exclusion of any of the packers' data.[26] Nonetheless, we recognize that a number of the packers may benefit from the Chinese imports and that their economic interests are not necessarily the same as those of the beekeeper-producers and beekeeper/packers. We have analyzed the data both with and without the packers, and have found market disruption under either circumstance. Where appropriate to take into account the packers' relatively small contribution to the value of the final product, we have accorded limited weight to packers' data, which may reflect benefits derived from importing the items under investigation.[27]

## II. Rapidly Increasing Imports

The first of the three statutory criteria that must be satisfied for an affirmative determination is that imports must be "increasing rapidly." Subparagraph 406(e)(2)(B)(i), added in 1988, states that "(i)mports of an article shall be considered to be increasing rapidly if there has been a significant increase in such imports (either actual or relative to domestic production) during a recent period of time." The legislative history to the 1988 amendments to section 406 provides, in relevant part:

> In applying the term "rapidly", the ITC should examine whether imports have recently surged over historical levels. In conducting this inquiry, the ITC should balance the amount of the increase and the period of time involved. Thus, if the ITC finds that the increase is concentrated in a single year, it should look for a relatively sharp increase. If, on the other hand, the increase has occurred over a 2-3 year period, the longer period will provide a more stable basis for comparison and may show a steady trend toward higher import levels that meets the "rapidly increasing" requirement. Thus, in the latter situation, the increase need not be as sharp or as dramatic as that required over a shorter period. If imports have fluctuated up and down, the fact that imports are on a rapid upswing can satisfy the "rapidly increasing" requirement, even though imports have not reached levels attained in a previous period. If, however, the ITC finds that imports are stable, declining in absolute terms and relative to domestic production, or increasing slowly, the "rapidly increasing" requirement would not be met.[28]

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[24] (...continued)
case of a domestic producer that also imports, to treat as part of the domestic industry only its domestic production." S. REP.. NO. 71, 100th Cong., 1st Sess. at 49 (1987). See also H.R. REP. NO. 40, Part 1, 100th Cong., 1st Sess. at 97 (1987).

[25] See 19 U.S.C. § 2252(c)(4)(A).

[26] Commissioner Nuzum does not join this statement. She focussed her analysis on those firms that processed and packed primarily (i.e., more than 50 percent) U.S. honey. See Table 9, CR at I-50, PR at II-35.

[27] The statute requires exclusion of data relating to imports only to the extent that segregated information is available. Although there are data showing packers' purchases of honey by source (Table 9, CR at I-50, PR at II-35), there are not separate data upon which we can base a source-specific evaluation of the relevant economic factors concerning the packers.

[28] H. R. REP. NO. 576, 100th Cong., 2d Sess at 1723-24 (1988).

The "rapidly increasing" criterion is satisfied in this investigation, whether examined in absolute terms or relative to domestic production. By quantity, imports of honey from China increased from 24.9 million pounds in 1989 to 25.5 million pounds in 1990 to 44.8 million pounds in 1991 and then to 60.1 million pounds in 1992, representing an overall increase of 141.4 percent.[29] A comparison of imports for the first nine months of 1992 with the same period in 1993 shows a continued increase, at 44.1 million pounds during interim 1992 as compared to 53.1 million pounds for interim 1993.[30]

By value, imports from China increased at a greater rate than volume, rising from $8.9 million in 1989 to $10.3 million in 1990 to $19.3 million in 1991 and then to $26.1 million in 1992, for an overall increase of 192.6 percent.[31] The value of imports continued to increase in interim 1993, up to $21.3 million as compared to $19.4 million for the same period in 1992.[32]

Imports of honey from China have also increased significantly relative to domestic production. Relative to the quantity of U.S. production, Chinese imports of honey first declined from 14.1 percent in 1989 to 12.9 percent in 1990 and then rose continually to 20.4 percent in 1991, to 27.2 percent in 1992, and to an estimated 36.5 percent in 1993.[33] The value of Chinese imports relative to U.S. production likewise rose consistently, from 9.9 percent in 1989 to 21.2 percent in 1992.[34]

Based on these data, we find that imports of honey from China increased rapidly, both absolutely and relative to U.S. production within the meaning of section 406.

## III. Material Injury and Threat of Material Injury

### A. Statutory Criteria

The second statutory criterion that must be met for an affirmative determination is a finding of material injury or threat thereof. The statute and legislative history do not define "material injury" as used in section 406, although the legislative history of the Trade Act of 1974 states that the term "material injury" in section 406 is intended to represent a lesser degree of injury than the term "serious injury" in section 201.[35]

The Commission generally has considered the same economic indicators when determining "material injury" in section 406 investigations as it considers when determining "serious injury" in section 201 investigations.[36] Thus, we looked to the section 201 import

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[29] Table 26, CR at I-94, PR at II-70.

[30] Id.

[31] Id.

[32] Id.

[33] Table 27, CR at I-97, PR at II-73.

[34] Id. Value data for 1993 are not available.

[35] S. REP NO. 1298 at 212. The term "material injury" is also used in title VII of the Tariff Act of 1930, although neither section 406 nor title VII nor their legislative histories cross-reference the same term as used in the other statute. In title VII, "material injury is defined as "harm which is not inconsequential, immaterial, or unimportant." 19 U.S.C. § 1677(7)(A).

[36] See, e.g., Ammonium Paratungstate and Tungstic Acid from China, USITC Pub. 1982 at 10. In determining whether "serious injury" exists, the Commission is instructed in section 201 investigations to "take into account all economic factors which it considers relevant, including (but not limited to). . . (i) the significant idling of productive facilities in the industry; (ii) the inability of a significant number of firms to operate domestic production facilities at a reasonable level of profit; and (iii) significant unemployment or underemployment in the industry." 19 U.S.C. § 2252(c)(1)(A).

Although the Commission has not in the past specifically referred to title VII, it has in fact also considered, as relevant, the same types of economic indicators set forth in title VII, e.g.: output, (continued...)

relief provisions, as well as the title VII economic indicators,[37] for guidance concerning the relevant economic factors to be considered in evaluating the condition of the industry in this section 406 investigation. We are mindful, however, that the standard for "material injury" that we address in this investigation is more easily met than the section 201 standard for "serious injury."[38]

B. Condition of the Industry[39]

A consideration relevant to the condition of the domestic honey industry is the loan support program administered by the USDA. This program, which has operated in every year since 1951, has authorized producers to take out non-recourse loans using their honey as collateral.[40] Under provisions of the Food Security Act of 1985 and the Food, Agriculture, Conservation and Trade Act of 1990, producers are allowed to repay the loans at an administratively lower rate (marketing loan rate) if the market price is lower than the initial loan rate, or to receive a loan deficiency payment in lieu of the price support loan.[41] The 1993 Agricultural Reconciliation Act reduced both the honey loan rate and the loan deficiency payment limits for each consecutive year through 1998.[42,43]

The fiscal year 1994 appropriations bill essentially suspends temporarily the loan support program by reducing the amount of payments and loan forfeitures to zero for the

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[36] (...continued)
sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, and research and development. See 19 U.S.C. § 1677(7)(C)(iii).

Both section 201 and title VII instruct the Commission to examine all economic factors which it considers relevant, but indicate that the Commission is not limited to the enumerated factors. 19 U.S.C. § 2252(c)(1); 19 U.S.C. § 1677(7)(C)(iii). Further, section 201 expressly provides that the presence or absence of any enumerated factor is not necessarily dispositive. See 19 U.S.C. § 2252(c)(3).

[37] In Title VII investigations, Commissioner Crawford does not make a separate legal conclusion that an industry is materially injured or threatened with material injury. She notes that Title VII applies to unfairly traded imports while sections 201 and 406 apply to fairly traded imports. As a result, different analytical approaches are appropriate. Therefore, she does not find reliance on Title VII either useful or appropriate.

[38] S. REP. NO. 1298 at 212.

[39] The data relied on in this investigation were obtained from several sources. First, much of the information concerning apparent consumption, the number of U.S. beekeepers and packers, colony numbers, production, domestic disposition, producers' inventories, and imports were obtained from secondary sources, including the U.S. Department of Agriculture (USDA), the U.S. Department of Commerce, and the National Honey Board. In addition, in an effort to supplement that information, the Commission sent questionnaires to approximately 900 firms representing a statistical sample of U.S. beekeepers (producers), producer/packers, commercial packers, and the largest producer-owned cooperative. See CR at I-58, PR at II-42. Questionnaire responses were received from approximately 300 producers and producer/packers accounting for approximately 30 percent of U.S. honey production in 1992; usable questionnaire responses accounted for approximately 15 percent of domestic honey production in 1992. Questionnaire responses were also received from 40 packers, accounting for the disposition of approximately 75 percent of honey in 1992.

[40] See CR at I-32, PR at II-22.

[41] Pub. L. 99-198 and Pub. L. 101-64. See CR at I-35-36, PR at II-24-25.

[42] Pub. L. 103-66.

[43] Vice Chairman Watson and Commissioner Crawford note that forfeitures of honey to the U.S. Government under the U.S. honey program rose from 1.1 million pounds in 1990 to 3.2 million pounds in 1991, but fell to 2.9 million pounds in 1992. CR at I-38, PR at II-26. Net U.S. Government expenditures under the honey program fell from $46.7 million in 1990 to $16.6 million in 1991 and 1992. Table 5, CR at I-33; PR at II-23.

1994 crop year.[44] However, because the appropriations bill applies only to fiscal year 1994, absent further legislation, the preexisting statutory provisions, including the reduced rates set by the 1993 Reconciliation Act, are due to become effective again for fiscal year 1995.[45] Thus, if the program becomes operative again in fiscal year 1995 for the 1995 crop, it will do so at progressively lower rates than those in effect during the period examined in this investigation. We have considered the status of the loan support program and other relevant economic factors in our overall evaluation of the condition of the domestic honey industry, both present and future.[46]

The data show that there has been a 12 percent decrease in the number of U.S. beekeepers' colonies operated for honey production, from 3.4 million in 1989 to 3.0 million colonies in 1992.[47] However, U.S. honey production increased during that period, from 177 million pounds to 220.6 million pounds.[48] U.S. packers' capacity utilization has been low throughout the period examined, but increased somewhat from 59.2 percent in 1990 to 64.1 percent in 1992.[49]

Data for the honey industry indicate that the domestic industry is experiencing financial difficulties. Net income from beekeeping operations increased from $8.29 per colony in 1990 to $8.33 per colony in 1991, but then fell to $7.22 per colony in 1992.[50] Total beekeeping expenses per pound fell from $0.53 in 1990 to $0.52 in 1991, but then rose to $0.55 in 1992.[51] Net beekeeping income declined by value from $0.11 per pound in 1990 to $0.09 per pound in 1991, and then to $0.08 per pound in 1992.[52]

Aggregate revenues reported by beekeepers increased by $4.8 million, from $35.1 million in 1990 to $39.9 million in 1992, but failed to keep pace with costs.[53] Expenses rose at a faster rate, from $30.8 million in 1990 to $36.2 million in 1992, for an overall increase of $5.4 million.[54] The increased aggregate expenses reflect an increase in all individual expense items except interest expense and honey packing costs.[55] Moreover, the reported expenses do not include all costs actually incurred by the beekeepers. Most of the beekeeper questionnaire responses from which these expenses were calculated did not include the costs for owners' and partners' salaries.[56,57] In addition, several of the responding beekeepers

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[44] H.R. REP. NO. 2493, 103d Cong., 2d Sess. (1993).

[45] See id.

[46] Vice Chairman Watson and Commissioner Crawford consider the suspension of the U.S. Honey Program in April 1994 to be a separate significant cause of the threat of material injury.

[47] Table 12, CR at I-61, PR at II-44.

[48] Id.

[49] Table 13, CR at I-63, PR at II-47.

[50] Table 18, CR at I-75, PR at II-57.

[51] Id.

[52] Id.

[53] Table 17, CR at I-72, PR at II-55.

[54] Id.

[55] Id.

[56] See CR at I-73, n. 71, PR at II-54, n. 71.

[57] Vice Chairman Watson and Commissioner Crawford note that most of the beekeeper questionnaire responses did not list costs for owners' and partners' salaries. They cannot, however, conclude that such costs have been excluded from Commission data, as such costs may have been included in the "all other expenses" category. In addition, given that only a small percentage of the 191 producers providing financial information are corporate entities, they place little weight on the fact that there were no reported costs for owners' and partners' salaries for 142 of those producers, since sole proprietorships and partnerships do not necessarily follow the same reporting rules as corporations.

provided financial information by submitting copies of the farm income schedules of their federal tax returns, which typically do not include labor and depreciation costs.[58]

Beekeepers' net income before taxes fell steadily from $4.3 million in 1990 to $3.7 million in 1992.[59] As a ratio to total revenue, net income before taxes also fell, from 12.3 percent to 9.3 percent. Of the reporting beekeeping firms, 42 incurred net losses in 1990, 50 had losses in 1991, and 44 in 1992.[60]

Net sales reported by commercial honey packers increased from $84.2 million in 1990 to $99.1 million in 1991, and then to $102.8 million in 1992.[61] However, the packers' operating income as a ratio of net sales were low, at 1.3 percent in 1990, 0.5 percent in 1991, and 1.4 percent in 1992.[62] Net income before taxes declined from $313 thousand in 1990 to a $303 thousand loss in 1991 and then rose to a $1.1 million profit in 1992.[63] Of the 21 packing firms that provided usable data in response to the Commission's questionnaire, 6 incurred operating losses in 1990, 7 in 1991, and 4 in 1992.[64]

Sioux Honey Association, a large cooperative accounting for a significant share of honey sales, does not prepare conventional income-and-loss statements.[65] Therefore its financial data are not directly comparable to data for commercial honey packers and its data were presented separately in the Staff Report. Although some of its data are more favorable than those of the commercial packers or beekeepers, other of its data show trends similar to those of the commercial packers.[66]

The American Beekeeping Federation estimates the total number of workers employed in beekeeping operations in 1992 at 12,484.[67] Actual aggregate employment information for the beekeeping industry is not available, however, from the associations or other secondary sources. Therefore, we examined employment indicators based upon the responses received from the sample of beekeepers who responded to the Commission's questionnaire. The responding sample accounts for approximately 7 percent of estimated total employment, but consists heavily of commercial beekeepers rather than hobbyists, and therefore is likely to be more representative of the commercial beekeepers as a whole.

The limited usable employment data provided to the Commission are mixed, but generally do not suggest that there presently is significant unemployment or underemployment in the honey industry. The total number of production and related workers employed by the U.S. beekeepers who provided usable data in response to the Commission's questionnaire rose from 809 workers in 1990 to 846 workers in 1991 and then dropped somewhat, but stayed above the 1990 level, at 841 workers in 1992.[68] The total hours worked by the responding beekeepers' production and related workers rose in each year,

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[58] See id. and Tr. at 61 (testimony of commercial beekeeper/packer).

[59] Table 17, CR at I-72, PR at II-55.

[60] Id.

[61] Table 20, CR at I-79, PR at II-60.

[62] Id.

[63] Id.

[64] Id.

[65] CR at I-75 and I-78, PR at II-56 and II-59.

[66] The quantity of Sioux Honey's net sales ***. Table 22, CR at I-81, PR at II-61. By value, its net sales ***. Id. Sioux's total costs and expenses were ***. Id. Its net proceeds, which are comparable to the commercial packers' cost of unpacked honey (see CR at I-78, PR at II-59), ***. Table 22, CR at I-81, PR at II-61. Its net proceeds paid to members and patrons ***. Id. The ***. Id.

[67] CR at I-68, PR at II-52.

[68] Table E-6, CR at E-9, PR at E-9. The overall increase in workers from 1990 to 1992 reflects a steady rise in the number of full time workers; the number of seasonal workers rose from 1990 to 1991 and then dropped in 1992, but to a level slightly above the 1990 level.

from 743,500 hours in 1990 to 884,900 hours in 1992.[69] Wages paid by these beekeepers also rose in each year, from $5.2 million in 1990 to $6.5 million in 1992, as did total compensation, which increased from $5.5 million to $6.8 million.[70] Hourly wages paid by the responding beekeepers to production and related workers increased from $6.99 in 1990 to $7.56 in 1991, and then declined to $7.32 in 1992, staying above the 1990 level.[71] Productivity among the sample rose from 31.6 pounds per hour in 1990 to 37.2 pounds per hour in 1991 and then dropped to 30.9 pounds per hour in 1992.[72] Unit labor costs dropped from $0.23 per pound in 1990 to $0.22 per pound in 1991 and then rose to $0.25 per pound in 1992.[73]

The number of production and related workers employed by the packers dropped steadily from 577 workers in 1990 to 532 workers in 1992, but was higher in interim 1993 as compared with interim 1992.[74] The hours worked by these employees rose overall from 883,500 hours in 1990 to 931,000 hours in 1992, with a slight drop to 882,200 hours in 1991.[75] The wages paid followed a similar pattern, rising overall from $8.7 million in 1990 to $9.1 million in 1992, with a slight drop in 1991.[76] There was a small but steady decline in hourly wages from $9.82 in 1990 to $9.78 in 1992.[77] Notwithstanding the decline in number of workers and in hourly wages paid, total compensation rose slightly from $9.5 million in 1990 to $9.6 million in 1991, and then more significantly, to $10.2 million in 1992.[78] The increase in 1992 can be partially explained by the increase in hours worked by full time workers during that year.[79] Productivity increased steadily, from 190.1 pounds per hour in 1990 to 204.4 pounds per hour in 1992.[80] Packers' unit labor costs remained constant, at $0.06 per pound, throughout the period of investigation.

Apparent U.S. consumption (or domestic disposition) of honey increased irregularly from 1989 to 1992, increasing from 284.8 million pounds in 1989 to 299.8 million pounds in 1990, followed by a decrease in 1991 to 292.0 million pounds and an increase in 1992 to 298.5 million pounds.[81] Estimates provided by the USDA indicate that apparent consumption for 1993 will rise to 303.5 million pounds.[82] U.S. per capita consumption remained constant from 1989 to 1993, at 1.0 pound.[83]

U.S. honey production increased steadily from 1989 to 1992, from 177 million pounds to 220.6 million pounds,[84] but USDA estimates that U.S. honey production will decrease in 1993 by 10 percent, to 198.4 million pounds, principally due to summer flooding in the Midwestern States.[85]

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[69] Id.
[70] Id.
[71] Id.
[72] Id.
[73] id.
[74] Table 16, CR at I-69, PR at II-53. The packers who provided usable employment data accounted for approximately 70 percent of the total quantity of U.S. domestic disposition of honey in 1992.
[75] Id.
[76] Id.
[77] Id.
[78] Id.
[79] See id.
[80] Id.
[81] Table 6, CR at I-43, PR at II-30; Table 28, CR at I-98, PR at II-74.
[82] Id.
[83] Table 4, CR at I-30, PR at II-21.
[84] Table 12, CR at I-61, PR at II-44.
[85] CR at I-63, PR at II-47.

Domestic shipments reported by U.S. packers increased steadily from 195.1 million pounds in 1990 to 227.5 million pounds in 1992.[86] In January-September 1993, shipments by packers rose to 177.6 million pounds as compared to 168.8 million pounds for the same period in 1992.[87] The value of domestic shipments also increased in each year, from $146.9 million in 1990 to $181.8 million in 1992.[88] For interim 1992, total domestic shipments were valued at $133.4 million as compared to $137.2 million for interim 1993. However, we place limited weight on the increases in the quantity and value of the U.S. packers' domestic shipments, as these shipments reflect a significant volume of honey purchased from nondomestic sources, including honey from China.[89]

Data compiled by USDA on year-end inventories of U.S.-produced honey, including government and commercial stocks, show a decline in inventories from 115.2 million pounds in 1989 to 77.8 million pounds in 1990.[90] Year-end inventories then rose in each subsequent year, to 113.9 million pounds in 1992, and are projected to be at 131.0 million pounds in 1993.[91] Inventories as a share of production followed the same pattern, dropping from 1989 to 1990, but then climbing steadily from 39.3 percent in 1990 to 51.6 percent in 1992, and are projected to be 66.0 percent in 1993.[92]

U.S. packers likewise reported rise each year in their year-end inventories from 39.9 million pounds in 1990 to 50.2 million pounds in 1992.[93] The ratio of packers' inventories to production was lower in 1992, at 6.3 percent, than it was in 1990, at 6.6 percent.[94] The packers' inventory trends carried over into 1993. At the end of September 1992, inventories were 39.8 million pounds at a 6.6 percent ratio to production, as compared to 44.9 million pounds at a 6.4 ratio to production at the end of September 1993.[95]

Based on our evaluation of the relevant economic factors, we find the domestic honey industry is not presently experiencing material injury. We find, however, that the industry is experiencing financial and other operational difficulties that make it vulnerable to the effects of increased imports of honey from China.[96]

C. Threat of Material Injury

Neither section 406 nor its legislative history defines the term "threat" of material injury. In previous section 406 investigations in which the Commission or some Commissioners have addressed threat, the Commissioners have applied the threat standard of section 201 in determining whether rapidly increasing imports are a significant cause of threat

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[86] Table 11, CR at I-57, PR at II-41.
[87] Id.
[88] Id.
[89] See Table 9, CR at I-50, PR at II-35; CR at I-49, PR at II-35.
[90] CR at I-67, PR at II-51. The decline from 1989 to 1990 completed a declining trend that began as far back as 1986, when year-end inventories were reported at 233.8 million. Id.
[91] Id.
[92] Id.
[93] Table 15, CR at I-67, PR at II-51.
[94] Id.
[95] Id.
[96] Commissioner Crawford does not find it necessary to draw a conclusion about vulnerability. Rather, she finds no current material injury based upon the relevant economic factors discussed above.

of material injury to the domestic industry.[97] Likewise, we look to the current section 201 criteria for guidance in evaluating threat here.[98]

Net sales, production, profits, wages, and employment are discussed supra. These indicators are mixed, but indicate overall that the industry is operating at declining profit levels. Also, as discussed supra, U.S. producers' and packers' inventories have been growing by large magnitudes since 1990. The financial data showing declining profits and the data showing rising inventories indicate that the domestic honey industry is experiencing increasing difficulties and is vulnerable to injury.

An examination of the trends in domestic producers' market share is further indicative of a threat of material injury. On the basis of both quantity and value, the domestic industry lost substantial market share.[99] By quantity, U.S. market share held by domestic honey producers rose somewhat from 72.9 percent in 1989 to 74.3 percent in 1990, but then dropped significantly in each following year, ending with a projected 57.9 percent in 1993.[100] By value, domestic producers' market share followed a similar pattern, rising slightly from 76.9 percent in 1989 to 77.9 percent in 1990, but then falling to 71.5 percent in 1991 and 65.1 percent in 1992.[101]

The information obtained in this investigation also indicates that U.S. producers are to a large extent unable to generate adequate capital to finance the upkeep or modernization of their equipment. The industry is operating at declining profit levels. In addition, a number of the beekeepers reported various specific difficulties in their questionnaire responses, including: the cancellation or rejection of expansion projects; reductions in the size of capital investments; difficulties in repaying agricultural program loans; increases in debt obligations; and credit termination or the lowering of credit ratings.[102]

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[97] See, e.g, Ammonium Paratungstate and Tungstic Acid from China, USITC Pub. 1982 at 43 (Views of Chairman Liebeler and Vice Chairman Brunsdale); Ferrosilicon from the Union of Soviet Socialist Republics, Inv. No. TA-406-10, USITC Pub. 1484 (Feb. 1984) at 16; Canned Mushrooms from the People's Republic of China, Inv. No. TA-406-9, USITC Pub. 1293 (Sept. 1982) at 29 (Views of Chairman Eckes and Commissioner Stern).

[98] The legislative history of section 201 states that a "threat" of serious injury exists "when serious injury, although not yet existing, is imminent if import trends continue unabated." S. Rep. No. 93-1298, 93d Cong., 2d Sess. 121 (1974). See also, H.R. REP. NO. 571 at 47.

In addressing "threat of serious injury" in section 201 investigations, the Commission is required to take into account all economic factors that it considers relevant, including (but not limited to) the following:

> (i) a decline in sales or market share, a higher and growing inventory (whether maintained by domestic producers, importers, wholesalers, or retailers), and a downward trend in production, profits, wages, or employment (or increasing underemployment) in the domestic industry,
>
> (ii) the extent to which firms in the domestic industry are unable to generate adequate capital to finance the modernization of their domestic plants and equipment, or are unable to maintain existing levels of expenditures for research and development,
>
> (iii) the extent to which the United States market is the focal point for the diversion of exports of the article concerned by reason of restraints on exports of such article to, or on imports of such article into, third country markets. 19 U.S.C. § 2252(c)(1)(B).

[99] Table 28, CR at I-98, PR at II-74.

[100] Id.

[101] Id. Value data for 1993 were not available.

[102] CR at F-2-4, PR at F-3-4.

Given the existing levels of honey imports from China coupled with the vulnerable state of the domestic industry, we find that continuation of the current levels of imports threatens the domestic industry with material injury. Moreover, the potential exists for further significant increases in imports of honey from China. China is the world's largest producer and exporter of honey,[103] but currently exports only between 30-40 percent of its honey. Although exports to the United States as a share of total exports have grown from 13.1 percent in 1990 to 27.0 percent in 1992,[104] more than 85 percent of the honey produced in China currently is consumed in China or exported elsewhere, and therefore remains available for possible diversion to the U.S. market.[105]

The information obtained in this investigation indicates that the United States is a potential destination for the honey currently consumed in China or exported to third countries which is available for diversion. The current weight based tariff on honey imports into the United States is very low compared with tariffs of most other countries that import significant quantities of Chinese honey.[106] By comparison, Japan and Germany, which also import large quantities of honey,[107] impose duties of 30.0 percent ad valorem and 27.0 percent ad valorem, respectively, on imports of Chinese honey.[108,109]

Especially in light of the reported efforts to improve the quality of Chinese honey,[110] large segments of the U.S. market are still potentially available to Chinese exporters.[111] With the high tariffs in other countries such as Japan and the European Community, the United States will continue to be a likely target for increases in exports of honey from China.

In sum, the vulnerable state of the U.S. industry, as illustrated by its declining profitability and rising inventories, in addition to the potential for diversion of Chinese honey exports to the U.S. market, indicate that the U.S. honey industry is threatened with material injury.

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[103] CR at I-85, PR at II-62.

[104] Table 26, CR at I-89, PR at II-70; CR at I-90, PR at II-67.

[105] Commissioner Crawford notes that a diversion would occur only in response to changes in economic conditions. For example, if China's honey consumption increases and its production falls, then either Chinese exports must fall or its imports must increase. In China's case, exports are estimated to have fallen 14.7 percent between 1992 and 1993, to 176 million pounds. See Table 25, CR at I-89, PR at II-66. The record further indicates that Chinese consumption is increasing and Chinese production is falling due to increasing costs and the termination of Chinese price supports and export subsidies. See Pre-Hearing Brief of Honey Users Council, Attachments 13 and 19; CR at I-86, PR at II-63.

[106] See CR at I-92, PR at II-68. The current weight-based tariff is 2.2 cents per kilogram, or approximately one cent per pound. CR at I-40, PR at II-28. This equates to approximately a 2 percent ad valorem tariff using current market prices.

[107] See Table 24, CR at I-86, PR at II-63. There was some disagreement among the parties concerning the extent to which Japanese demand for honey has or will decline due to reduced demand for a particular honey-based beverage in Japan. See CR at I-90, PR at II-67. In any event, the data show that Japan is a major importer of honey, but that consumption in Japan has declined substantially since 1990. See Table 24, CR at I-86, PR at II-63.

[108] CR at I-92, PR at II-68.

[109] Commissioner Crawford notes that foreign tariffs on honey are likely to fall as a result of the recent conclusion of the GATT Uruguay Round.

[110] CR at I-88, PR at II-65.

[111] Imports of honey from China currently account for just under 20 percent of growing U.S. consumption.

## IV. Significant Cause

The third statutory criterion that must be met for an affirmative determination is the finding that the rapidly increasing imports are a "significant cause" of material injury or threat of material injury to the industry. Subparagraph (B)(ii) of section 406(e)(2), added by OTCA, states that "(t)he term 'significant cause' refers to a cause which contributes significantly to the material injury of the domestic industry, but need not be equal to or greater than any other cause." The legislative history of the 1988 amendment states, in relevant part, that:

> The 'significant cause' standard is an interim standard between the 'substantial cause' requirement of section 201 and the 'contributing cause' standard of the antidumping and countervailing duty laws. Because section 406 focuses on imports from a single country, rather than all imports, it would not be appropriate to require that imports be the substantial or primary cause of injury, since this standard would be very difficult to meet . . . Under this standard, the imports subject to investigation need not be the leading or most important cause of injury or more important (or even equal to) any other cause, so long as a direct and significant causal link exists. Thus, if the ITC finds that there are several causes of the material injury, it should seek to determine whether the imports subject to investigation are a significant contributing cause of the injury or are such a subordinate, subsidiary or unimportant cause as to eliminate a direct and significant causal relationship. . . .[112]

In the 1988 amendments, Congress indicated that it was clarifying the meaning of "significant cause" because of unduly restrictive meanings given that term by the Commission in previous investigations.[113] In light of Congress's instructions, we have not weighed the various possible causes alleged for the threat of material injury. Rather, we have examined whether the Chinese imports, irrespective of any or no other causes, are themselves a "significant cause" of threat. We have determined that they are.[114]

In the 1988 Act, Congress also amended the statute to provide further guidance for the Commission in addressing causation. Thus, in making our determination whether market disruption exists, we are instructed, by section 406(e)(2)(C), to consider, among other factors:

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[112] H.R. REP. NO. 576 at 691.

[113] Id. The clarification apparently was directed against the Commission majority decision in Ferrosilicon from the USSR, in which the Commission had weighed causes and discounted the Soviet imports as a significant cause because the Commission found that other factors, namely declines in demand and increases in nonsubject imports, were more important causes of injury than were the subject imports. Ferrosilicon from the USSR, USITC Pub. 1484 at 11-16.

[114] The Chinese producers and the importers have alleged various other causes of material injury or threat thereof, including the gradual elimination of the government price support programs, the allegedly softening world market for honey, and nonprice factors favoring Chinese honey (e.g., more favorable contract terms, alternative supply source, better consistency, less paperwork, competition from other sweeteners and freight advantages.) Pre-Hearing Brief of Tianjin Native Produce Import & Export Corp., et. al. at 25-28; Pre-Hearing Brief at 33-40. Even if some or all of these factors are causes of the threat of material injury, the impact of these factors does not detract from our conclusion that Chinese imports are a significant cause of injury.

(i) the volume of imports of the merchandise which is the subject of the investigation;
(ii) the effect of imports of the merchandise on prices in the United States for like or directly competitive articles;
(iii) the impact of imports of such merchandise on domestic producers of like or directly competitive articles; and
(iv) evidence of disruptive pricing practices, or other efforts to unfairly manage trade patterns.

In assessing these factors, we have considered certain economic characteristics of the market. First, we note that there are few market options for beekeepers other than production and sale of honey, since alternative markets, such as pollination and sales of bee-byproducts, are limited.[115] In addition, the ability of beekeepers to increase production is constrained by environmental factors such as weather, diseases, and mites, and by the lack of significant export markets, particularly given the sizable import tariffs imposed by the major honey-consuming countries.[116]

Second, the imported honey from China and U.S.-produced honey are essentially substitutable, particularly for industrial uses which account for the largest and fastest growing segment of the market.[117] There is a low practical market substitutability between honey and other sweeteners, such as sugar and corn syrup. Although other sweeteners technically can be substituted for honey, factors such as taste, image differences, and practical restraints imposed by product formulations and labeling, limit their substitutability.[118] However, there is a greater degree of substitutability between these other sweeteners and honey sold for industrial uses than there is between other sweeteners and honey sold in the retail market.[119] As noted, most of the increase in Chinese imports has occurred in the industrial market, the fastest growing market segment.

Third, suspension of the loan support program for 1994, and the uncertainty of the program's reestablishment in 1995 or thereafter, exacerbate the industry's vulnerability to further adverse effects of the subject imports. In the context of these economic characteristics of the market, we have evaluated the volume, price effects, and impact of the Chinese imports on the domestic honey industry.[120]

The volume of imports of honey from China is significant and has increased in quantity from 25 million pounds in 1989 to 60.1 million pounds in 1992. The volume is further projected to increase to 72.4 million pounds for 1993.[121] These increases in absolute quantity represent a corresponding increase in U.S. market share held by the Chinese imports, rising from 8.7 percent of U.S. consumption in 1989 to 20.1 percent in 1992, with a projected increase to 23.9 percent in 1993.[122] The value of Chinese imports has followed a similar pattern, increasing in absolute terms from $8.9 million in 1989 to $26.1 million in 1992, and as a share of consumption from 6.6 percent to 16.6 percent during that time.[123]

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[115] See Table 17, CR at I-72, Pr at II-55; Remedies Memorandum, EC-Q-125 (Dec. 28, 1993) at 31.
[116] See CR at I-92, PR at II-68; Remedies Memorandum at 31; Tr. at 25 (testimony of officer of American Beekeeping Federation) and 156 (testimony of importer/packer).
[117] See Table 11, CR at I-57, PR at II-41; CR at I-5, PR at II-4; CR at I-21-26, PR at II-13-16; CR at I-102-104, PR at II-77-78.
[118] See CR at I-104-105, PR at II-78-79; Remedies Memorandum at 35.
[119] See CR at I-28, PR at II-18.
[120] See 19 U.S.C. § 2436(e)(2)(C).
[121] Table 28, CR at I-98, PR at II-74.
[122] Id.
[123] Id.

As discussed supra, the domestic producers lost substantial market share, by both quantity and value, during the same period.[124] Moreover, the losses in U.S. market share correspond closely to the gains in Chinese market share. In 1991, When U.S. market share dropped sharply from 74.3 percent in 1990 to 68.4 percent in 1991, Chinese market share jumped from 8.5 percent to 15.3 percent.[125] Likewise, as U.S. market share continued to decline to 61.6 percent and 57.9 percent in 1992 and 1993, respectively, Chinese imports gained most of the market share lost by the U.S. producers, increasing first to 20.1 percent and then to 23.9 percent.[126]

The pricing data show that there has been consistent and significant underselling by the Chinese imports. Imports of honey from China were priced lower than U.S.-produced honey for all types of honey in nearly all quarters for which data were collected, and there is no indication that this underpricing practice is abating.[127,128] Indeed, the interim data for 1993 indicate that unit values for all types of Chinese honey have declined in comparison to their 1992 levels while the volume of imports continues to climb.[129] Although the reported differences in quality may account for some of the price differentials, they do not fully account for the wide gap in prices.

Prices for all types of both Chinese and U.S.-produced honey increased during 1990-1991, but then declined during 1992-1993, when the volume of Chinese imports reached higher levels.[130] Thus, the domestic honey industry lost market share at the same time that the closely-substitutable and low-priced Chinese honey gained market share. The increases in volumes of low-priced substitutable Chinese honey resulted in depression of prices for all types of U.S.-produced honey.[131]

Honey producers generally manage operations in order to sell their honey within a year of production in order to avoid deterioration and to recoup costs and sustain cash flow.[132] The necessity of selling honey within a year in turn leads producers to reduce prices in order to sell the honey before it deteriorates. In the face of lower priced Chinese imports, U.S. producers' and packers' inventories continued to rise even as consumption rose. The increase in inventories with a short shelf life places significant pressure on the domestic producers to lower their prices.

Addressing the final causation factor specified by the amended statute, we find that the consistent underselling by closely-substitutable Chinese imports also provides evidence of disruptive pricing practices.[133,134] In sum, we determine that the rapidly increasing imports of honey from China are a significant cause of threat of material injury to the U.S. honey industry.

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[124] Id.
[125] Id.
[126] Id.
[127] See Tables 29, 30, 31, and 32, CR at I-107-108, PR at II-80-81.
[128] Vice Chairman Watson and Commissioner Crawford note that the price differential between U.S. and Chinese honey is explained at least in part by quality differences and larger lot purchases.
[129] See Table 26, CR at I-94-95, PR at II-70-71.
[130] See id. and Table 28, CR at I-98, PR at II-74.
[131] Commissioner Crawford notes that honey from third countries such as Mexico and Argentina is also substitutable with US and Chinese honey. Thus the price effects of any shifts of Chinese honey away from the U.S. market and into the world market may be muted by subsequent shifts of third country honey to the United States.
[132] See Joint Pre-Hearing Brief of The American Beekeeping Federation and the American Honey Producers Association at 19-20.
[133] Commissioner Crawford notes that the record does not necessarily support the conclusion that underselling by Chinese producers represents a collective effort to unfairly manage trade patterns.
[134] Vice Chairman Watson further finds that China's maintenance of one of the highest worldwide tariffs on honey could be viewed as a governmental effort to unfairly manage trade patterns. China's 55 percent ad valorem duty effectively protects the Chinese honey industry by keeping U.S. and other imports out of one of the world's largest markets for honey. See Table 24, CR at I-86, PR at II-63; Table 26, CR at I-94, PR at II-70.

## ADDITIONAL VIEWS ON REMEDY OF CHAIRMAN DON E. NEWQUIST AND COMMISSIONERS DAVID B. ROHR AND JANET A. NUZUM

Imports of honey from China have increased by 191 percent since 1989 to a level of 72.4 million pounds in 1993. The share of U.S. consumption captured by these imports increased from 8.7 percent in 1989 to 23.9 percent in 1993. These rapidly increasing imports have taken sales away from U.S. honey producers and displaced U.S.-produced honey. Lower prices and profits for U.S. honey producers attributable to these imports have left the domestic industry in a vulnerable condition. If unchecked at this level, imports from China will, in our judgment, be a significant cause of material injury to the U.S. honey industry.

Findings and Recommendations

Having found that rapidly increasing imports of honey from China are a significant cause of a threat of material injury to the domestic honey industry and that market disruption exists, section 406(a)(3) directs that we find the amount of the increase in, or imposition of, any duty or other import restriction on the imported article which is necessary to prevent or remedy such market disruption. We recommend that to remedy the market disruption it is necessary to impose a tariff-rate quota on imports of honey from China for a 3-year period.[1] This quota should be administered on a quarterly basis, with imports entered within a quarterly quota of 12.5 million pounds to be dutiable at a rate of 25 percent ad valorem, and over-quota imports entered during any quarter dutiable at a rate of 50 percent ad valorem. Thus, no more than 50 million pounds could enter annually at the lower 25 percent rate. Such duties would be in lieu of the current rate of duty.

In addition, we recommend that the Commission monitor imports and industry conditions during the relief period and furnish the United States Trade Representative (USTR) with annual reports on such monitoring.[2] We further recommend that the Commission be directed to conduct and complete, prior to the end of the third year of the relief action, an investigation to advise the President of its judgment as to the probable economic effect of modification of such relief.[3] However, should the domestic loan support program for honey be reestablished in either fiscal year 1995 or 1996, we recommend that the Commission be requested to undertake such review 6 months after the loan support program is reestablished.[4]

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[1] Should the domestic loan support program be reestablished in fiscal year 1995 or 1996, it may be appropriate (as discussed infra) to reduce or terminate relief before the end of the 3-year period.

[2] This would be done in conjunction with the Commission's responsibility under section 203(i)(1) of the Trade Act of 1974 to "keep under review developments with respect to the domestic industry concerned (including the progress and specific efforts made by the firms in the industry concerned to adjust to import competition)." Section 203(i)(1) also provides that the Commission "upon request of the President shall make reports to the President concerning such developments."

[3] Such an investigation could be conducted under either section 203(i)(2) or section 203(i)(3) of the Trade Act of 1974. Section 406(b) makes applicable, in the case of remedy actions by the President, the provisions of sections 202 and 203 of the Trade Act of 1974 as they existed immediately prior to enactment of the Omnibus Trade and Competitiveness Act of 1988.

[4] In contrast to our remedy recommendation, the domestic industry had requested a substantially more restrictive annual quota of 25.5 million pounds. We considered such a remedy to be unnecessary in view of the condition of the domestic industry, the severe trade-distorting effects of such a remedy, and its significant adverse effect on consumers. Two respondent parties suggested annual volume limits of 65 million pounds and approximately 72 million pounds, respectively. We found these levels to be too high to provide any meaningful relief to the industry.

Effect on U.S. Honey Industry

In fashioning our remedy recommendation, we carefully considered the impact that rapidly increasing imports of low-priced honey from China are having on the domestic industry. We also took into account conditions in the domestic marketplace, including pending changes in the USDA honey price-support program, the availability of substitutes for Chinese honey such as other sweeteners, and alternative sources of imports. The evidence of threat includes the erosion of market share, rising inventories and declining financial performance. Our recommended remedy is designed to prevent future material injury without being over-reaching in effect.

We expect that our recommended tariff-rate quota, if implemented by the President, will raise the price and quantity of U.S.-produced honey by an estimated 2 percent and 4 percent, respectively. We anticipate that the improvements in price and quantity of domestic honey production will result in an increase in annual revenues to honey producers of 6 percent and an increase of $5.8 million in the value of U.S. shipments. U.S. producers' share of the domestic market should increase to approximately 65 percent. The projected market share during the period of relief for U.S. producers would be below that held by domestic producers in 1991 and recoups only part of the market share lost to rapidly rising imports of honey from China. However, the improvement in prices, production and revenues to domestic producers should remedy the threat of material injury by returning the domestic industry to a more viable condition.

The improvements in prices, production, and revenues to domestic honey producers are especially important in light of the upcoming changes to the USDA honey program. Starting with the 1994 honey crop, in accordance with the Agricultural Reconciliation Act of 1993, honey loan rates and payment limits to domestic honey producers will be reduced.[5] Furthermore, the fiscal year 1994 appropriations reduce the amount of payments and loan forfeitures to zero for the 1994 crop year, essentially reducing the honey program to strictly a loan program.[6]

Effect on Honey Imports from China

We have factored into our tariff recommendation the expectation that exporters and/or importers of Chinese honey will absorb a small amount of the duty increase, either through lower export prices or lower profit margins on imports or both. However, we believe that a large part of the increased duties we are recommending will be passed through by importers, offsetting much of the harmful underselling that currently exists in the case of imports of honey from China.

We expect the remedy to raise the price of the subject imports from their current $0.40 per pound to approximately $0.48, a 21 percent increase (see Table A and Graph A).[7] This price increase is roughly equivalent to the most recent margins of underselling, i.e. the percentages by which the prices of Chinese imports sold in the U.S. market were lower than the prices of comparable U.S.-produced honey.

The remedy should reduce the quantity of honey imported from China to approximately 45 million pounds (see Table A and Graph A), which is slightly above the 1991 level -- the point at which Chinese imports began to increase rapidly. That is, our

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[5] Pub. L. 103-66.

[6] H.R. Rep. No. 2493, 103d Cong., 2d Sess. (1993).

[7] The estimated effects in Table A and Graph A are based on the median of plausible elasticity estimates. Table B shows the sensitivity of the estimates to alternative elasticity assumptions.

proposed remedy should reduce imports to a level at which they no longer are disruptive to the U.S. market.

The estimated effects of the tariff-rate quota are based on the assumption that exporters of honey from China and their U.S. importers will respond to market forces, i.e., will reduce the quantity of honey supplied to the U.S. market in response to lower prices they realize on U.S. honey sales. However, the record indicates that honey production and exportation in China is at least to an appreciable extent centrally-controlled through planned allocation of productive resources and other non-market mechanisms.[8] In order to ensure that the threat of material injury is eliminated, we have recommended a 50 percent tariff on imports above the level of 50 million pounds a year, to be administered on a quarterly basis. Prices for Chinese honey in the U.S. would have to further rise substantially above the projected price level to an estimated $0.59 per pound before imports from China would exceed 50 million pounds per year (See Graph A).

The estimated effects, based on market principles, of a 25 percent tariff should restrain imports from China to 45 million pounds, somewhat less than the 50 million pound tariff-rate quota level, assuming that the large majority of the tariff is passed through to consumers. If less of the lower tariff is passed through, however, we still expect that imports from China will not exceed 50 million pounds annually because of the substantially higher tariff imposed above that level. The additional tariff-rate quota for imports above 50 million pounds per year will provide a strong disincentive against producers and exporters of honey from China absorbing more of the 25 percent tariff than market principles would indicate.

Effect on U.S. Honey Consumers

We also considered the needs of U.S. purchasers of honey. Prices for domestically produced honey are anticipated to rise by only 2 percent after the tariff-rate quota is imposed. Domestic purchasers will have a sufficient supply of high-quality, moderately-priced honey even after imposition of the remedy. In the event of a shortfall in domestic honey production or importation of honey from countries other than China, honey imported from China would be available to U.S. purchasers.

We have chosen a tariff-type remedy rather than a quota because tariffs tend to have a less distortive effect on the marketplace: in the case of a tariff or tariff-rate quota, no absolute limitation is imposed on the quantity of goods that may enter. Even at 50 million pounds, imports from China will remain very substantial, at 100 percent more than the 1990 level of honey imports from China. The expected level of imports of honey from China during the period of relief is also nearly double the quota level requested by the U.S. honey industry. However, we believe that the domestic market can accommodate this amount in view of the fact that domestic honey consumption has increased in recent years.

At the same time, we do not believe that the increased duties will have a significant adverse impact on U.S. packers who import honey from China or on U.S. consumers. Imports from countries other than China are expected to rise after implementation of our recommended remedy by an estimated 4.9 million pounds, offsetting 20 percent of the

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[8] CR at I-85, PR at II-65 (discussion of TUHSU as conduit for China's honey exports); and CR at I-90, PR at II-67 (discussion by China's Ministry of Agriculture (MOA) economist of importance of beekeeping in China's Eighth Five-Year Plan). See also Winston & Strawn, posthearing brief on behalf of U.S. industry, at pp. 4 and 5 (discussion of importance of TUHSU as powerful bureaucracy setting export prices); Miller, Canfield posthearing brief on behalf of Chinese exporters, at exhibit 8, p. 4 (citing U.S. Foreign Agriculture Service (FAS) report on China's MOA's role in beekeeping); Akin, Gump post-hearing brief on behalf of U.S. importers, at attachment 20, p. 3 (citing FAS discussion of China's honey production policy).

decline in the quantity of honey imported from China. Competition within the domestic industry, with other imports, and the sale of significant carry-over stocks, along with competition from substitute products will promote considerable price competition in the U.S. honey market. In the event honey demand were to rise unexpectedly in the United States, U.S. packers and importers retain the flexibility to import honey from China at the higher tariff level if domestic and other import supplies are insufficient.

In sum, the remedy we are recommending allows for flexibility in the quantity of honey that may be imported from China, while at the same time providing domestic honey producers with a reasonable assurance that price undercutting and further increases in U.S. market share by imports of honey from China will not continue.

TABLE A
EFFECTS OF A 25% TARIFF UP TO 50 MILLION POUNDS AND A 50% TARIFF THEREAFTER
(1993 BASE YEAR)

| | |
|---|---|
| ESTIMATED IMPACT ON DOMESTIC INDUSTRY (PERCENTAGE CHANGES) | |
| Price: | 2.0% |
| Quantity: | 4.0% |
| Revenue: | 6.0% |
| QUANTITY CHANGES | |
| U.S. Production (millions of pounds): | 6.9 |
| U.S. Consumption (millions of pounds | (15.7) |
| Employment ( hours): | 37,196.3 |
| Imports (millions of pounds): | (22.5) |
| ESTIMATED MARKET SHARES | |
| Domestic Market Share: | 65.4% |
| Target Import Market Share: | 13.9% |
| Non-Target Import Market Share: | 20.7% |
| Change in Value of U.S. Production: (millions of dollars) | $5.8 |

| | |
|---|---|
| ESTIMATED IMPACT ON TARGET IMPORTS (PERCENTAGE CHANGES) | |
| Price: | 21.1% |
| Quantity: | -37.9% |
| Revenue: | -24.8% |
| Change in Quantity of Imports: (millions of pounds) | (27.4) |
| Change in Value of Imports: (millions of dollars) | ($7.1) |

| | |
|---|---|
| ESTIMATED IMPACT ON NON-TARGET IMPORTS (PERCENTAGE CHANGES) | |
| Price: | 0.5% |
| Quantity: | 8.5% |
| Revenue: | 9.1% |
| Change in Quantity of Imports: (millions of pounds) | 4.9 |
| Change in Value of Imports: (millions of dollars) | $2.7 |

| | |
|---|---|
| OVERALL IMPACT ON U.S. ECONOMY (millions of dollars) | |
| Change in National Income: | ($1.2) |
| Benefit to Producers: | $1.9 |
| Cost to Consumers: | $7.0 |
| due to higher prices: | $3.9 |
| due to market distortion: | $3.2 |
| Tariff Revenue | $4.5 |

INPUTS

| | |
|---|---|
| Proposed Duty Rate: | 25.0% |
| ELASTICITIES OF SUBSTITUTION | |
| Domestic and Target Imports: | 3 |
| Domestic and Non-Target Imports: | 3 |
| Target and Non-Target Imports: | 3 |
| ELASTICITIES OF SUPPLY TO U.S. MARKET | |
| Domestic Product: | 2 |
| Target Imports: | 15 |
| Non-Target Imports: | 15 |
| U.S. MARKET | |
| Aggregate Elasticity of Demand: | -1.0 |
| Employment ( hours): | 935,548 |

| | |
|---|---|
| DOMESTIC SHIPMENTS | |
| Quantity (millions of pounds): | 172.9 |
| Value (millions of dollars): | $96.5 |
| TARGET IMPORTS | |
| Quantity (millions of pounds): | 72.4 |
| Value (millions of dollars): | $28.8 |
| NON-TARGET IMPORTS | |
| Quantity (millions of pounds): | 58.1 |
| Value (millions of dollars): | $29.7 |

**Graph A**
**Effects on honey imported from China of a 25% tariff up to 50 million pounds and a 50% tariff thereafter (1993 base year)**

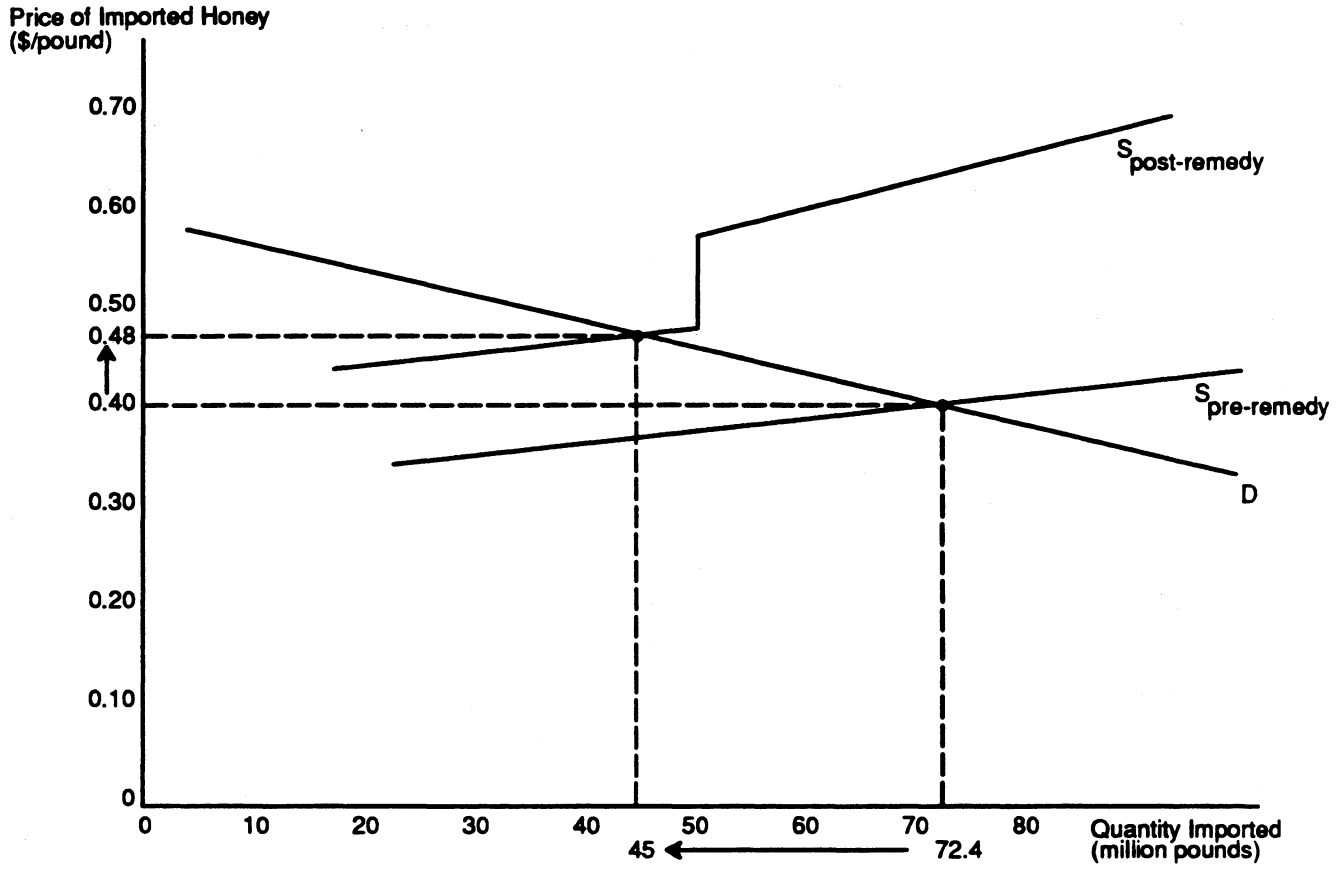

TABLE B
EFFECTS OF A 25% TARIFF UP TO 50 MILLION POUNDS AND A 50% TARIFF THEREAFTER (1993 BASE YEAR)

| ESTIMATED IMPACT ON DOMESTIC INDUSTRY (PERCENTAGE CHANGES) | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| Price: | 2.4% | 1.2% | 1.2% | 0.7% | 3.9% | 2.9% | 2.5% | 2.0% | 2.0% |
| Quantity: | 2.4% | 1.2% | 3.7% | 2.1% | 3.9% | 2.9% | 7.6% | 6.0% | 4.0% |
| Revenue: | 4.9% | 2.5% | 4.9% | 2.8% | 7.9% | 5.9% | 10.2% | 8.1% | 6.0% |
| QUANTITY CHANGES | | | | | | | | | |
| U.S. Production (millions of pounds): | 4.1 | 2.1 | 6.3 | 3.6 | 6.7 | 5.1 | 13.1 | 10.4 | 6.9 |
| U.S. Consumption (millions of pounds | (14.7) | (18.5) | (12.8) | (17.2) | (13.5) | (18.6) | (10.8) | (16.4) | (15.7) |
| Employment (thousands of hours): | 22,450.9 | 11,562.9 | 34,244.9 | 19,288.5 | 36,156.4 | 27,337.7 | 70,792.3 | 56,517.5 | 37,196.3 |
| Imports (millions of pounds): | (18.9) | (20.6) | (19.1) | (20.8) | (20.2) | (23.7) | (23.9) | (26.8) | (22.5) |
| ESTIMATED MARKET SHARES | | | | | | | | | |
| Domestic Market Share: | 64.2% | 64.2% | 64.3% | 64.3% | 65.3% | 65.7% | 66.5% | 66.7% | 65.4% |
| Target Import Market Share: | 15.7% | 15.8% | 15.7% | 15.8% | 13.0% | 12.9% | 12.0% | 11.9% | 13.9% |
| Non-Target Import Market Share: | 20.1% | 20.0% | 20.0% | 19.9% | 21.6% | 21.4% | 21.6% | 21.4% | 20.7% |
| Change in Value of U.S. Production: (millions of dollars) | $4.7 | $2.4 | $4.7 | $2.7 | $7.6 | $5.7 | $9.9 | $7.8 | $5.8 |
| ESTIMATED IMPACT ON TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 24.7% | 22.6% | 24.0% | 22.7% | 18.9% | 18.5% | 21.3% | 21.1% | 21.1% |
| Quantity: | -30.9% | -30.9% | -30.9% | -31.3% | -39.5% | -41.4% | -45.2% | -46.7% | -37.9% |
| Revenue: | -13.9% | -15.4% | -14.4% | -15.7% | -28.0% | -30.6% | -33.6% | -35.5% | -24.8% |
| Change in Quantity of Imports: (millions of pounds) | (22.4) | (22.4) | (22.4) | (22.6) | (28.6) | (30.0) | (32.7) | (33.8) | (27.4) |
| Change in Value of Imports: (millions of dollars) | ($4.0) | ($4.4) | ($4.1) | ($4.5) | ($8.1) | ($8.8) | ($9.7) | ($10.2) | ($7.1) |
| ESTIMATED IMPACT ON NON-TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 0.6% | 0.3% | 0.3% | 0.2% | 1.4% | 1.0% | 0.7% | 0.6% | 0.5% |
| Quantity: | 6.1% | 3.1% | 5.6% | 3.1% | 14.5% | 10.8% | 15.2% | 12.1% | 8.5% |
| Revenue: | 6.7% | 3.4% | 5.9% | 3.3% | 16.1% | 12.0% | 16.1% | 12.7% | 9.1% |
| Change in Quantity of Imports: (millions of pounds) | 3.5 | 1.8 | 3.3 | 1.8 | 8.4 | 6.3 | 8.9 | 7.0 | 4.9 |
| Change in Value of Imports: (millions of dollars) | $2.0 | $1.0 | $1.7 | $1.0 | $4.8 | $3.6 | $4.8 | $3.8 | $2.7 |

TABLE B--Continued
EFFECTS OF A 25% TARIFF UP TO 50 MILLION POUNDS AND A 50% TARIFF THEREAFTER (1993 BASE YEAR)

| | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| OVERALL IMPACT ON U.S. ECONOMY (millions of dollars) | | | | | | | | | |
| Change in National Income: | ($1.1) | ($1.0) | ($1.1) | ($1.0) | ($1.1) | ($1.1) | ($1.4) | ($1.4) | ($1.2) |
| Benefit to Producers: | $2.3 | $1.2 | $1.2 | $0.7 | $3.8 | $2.9 | $2.5 | $2.0 | $1.9 |
| Cost to Consumers: | $8.5 | $6.8 | $7.1 | $6.2 | $8.6 | $7.4 | $7.5 | $6.8 | $7.0 |
| due to higher prices: | $5.0 | $4.5 | $4.8 | $4.5 | $3.5 | $3.2 | $3.6 | $3.4 | $3.9 |
| due to market distortion: | $3.6 | $2.3 | $2.3 | $1.7 | $5.1 | $4.2 | $3.9 | $3.4 | $3.2 |
| Tariff Revenue | $5.0 | $5.0 | $5.0 | $4.9 | $4.4 | $4.2 | $3.9 | $3.8 | $4.5 |
| INPUTS | | | | | | | | | |
| Proposed Duty Rate: | 29.4% | 27.2% | 26.3% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| ELASTICITIES OF SUBSTITUTION | | | | | | | | | |
| Domestic and Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Domestic and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Target and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| ELASTICITIES OF SUPPLY TO U.S. MARKET | | | | | | | | | |
| Domestic Product: | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 2 |
| Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| Non-Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| U.S. MARKET | | | | | | | | | |
| Aggregate Elasticity of Demand: | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -1.0 |
| Employment (thousands of hours) | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 |
| DOMESTIC SHIPMENTS | | | | | | | | | |
| Quantity (millions of pounds): | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 |
| Value (millions of dollars): | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 |
| TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 |
| Value (millions of dollars): | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 |
| NON-TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 |
| Value (millions of dollars): | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 |

## SEPARATE VIEWS OF VICE CHAIRMAN WATSON ON REMEDY
## Honey from China, Inv. TA-406-13

On December 21, 1993, I joined the Commission majority and determined in accordance with 19 U.S.C. § 2436, that market disruption exists within the U.S. honey industry as a result of rapidly increasing imports of honey from China which are a significant cause of threat of material injury to the U.S. industry. Having found that market disruption exists within the U.S. honey industry, the statute further directs me to recommend to the President, "the amount of the increase in, or imposition of, any duty or other import restriction on (Chinese honey) which is necessary to prevent or remedy such market disruption".[1]

### I. The Commission's findings on market disruption

In its affirmative determination, the Commission found that "the domestic honey industry is not presently experiencing material injury", but that it "is experiencing financial and other operational difficulties that make it vunerable to the effects of increased imports of honey from China."[2] In order to determine the appropriate level of import relief to recommend to the President, I have found it helpful to first review the specific factors which led me to conclude that the domestic industry is faced with a threat of material injury.

Although domestic market share declined after 1990, the domestic industry was able to remain consistently profitable and increase its honey production until 1992.[3] The domestic honey industry has also benefited since 1950 from a price-support program. As determined by the 1990 Farm Act, the price of honey for the 1991 through 1993 crops has been supported at 53.8 cents per pound.[4] As compared with 1981 through 1988, the number of loan forfeitures were minimal from 1989 through 1992,[5] suggesting that the price-support program has helped the domestic industry remain profitable during the period of investigation. Moveover, I have noted that the Secretary of Agriculture, Mike Espy, observed on July 13, 1993 that "the increased imports [from China] have been absorbed by our market without adversely affecting sales of domestically produced honey."[6]

By 1993, however, it became apparent that if Chinese honey imports continued their rapid increase or even remained at 1993 levels, the domestic industry would soon be experiencing material injury. This conclusion is evidenced by the declining profits and market share of the domestic industry coupled with consistent underselling by the Chinese imports throughout the period of investigation.[7] The precarious position of the domestic

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[1] 19 U.S.C. § 2436(a)(3)

[2] See Views of Chairman Newquist, Vice Chairman Watson, and Commissioners Rohr, Crawford and Nuzum at I-15.

[3] CR at E-19, Table E-11; PR at E-19. The USDA has forecast domestic production to decline from 220.6 million pounds in 1992 to 198.4 million pounds in 1993, principally due to summer flooding in the Midwestern States. CR at I-62-63, PR at II-43. Net income in 1992 was $3.7 million.

[4] CR at I-32-33, Table 5; PR at II-22-23. The honey crop year runs from April 1 through March 31.

[5] Id.

[6] See, CR at I-37, PR at II-26. Letter from Mike Espry to Donald R. Schmidt dated July 13, 1993. Secretary Espy notes that "while imports from China have increased 226 percent in the past five years, forfeitures of honey pledged as collateral for Commodity Credit Corporation (CCC) price support programs have decreased about 95 percent."

[7] CR at I-111, PR at II-84. Although prices of domestic and Chinese honey generally declined throughout the period of investigation, imports of Chinese honey declined more sharply during the last part of 1992 and in 1993. The largest price differences also occurred in the latter part of 1991 and in

(continued...)

honey industry has been exacerbated by recent changes to the honey price-support program,[8] and rising domestic inventories.[9]

## II. Considerations taken into account in determining import relief

In crafting an appropriate remedy, I have remained cognizant of the complex dynamics that exist in the honey market. Described below are the most important considerations which I have found appropriate to take into account in reaching my recommendation.

### a. Import relief should be in proportion to the degree of injury threatened by imports of Chinese honey.

China is the world's largest producer of honey.[10] Currently, 55-70% of China's honey production is consumed domestically, while the remainder is exported.[11] Although there certainly exists a potential for increased exports of honey to the United States and for diversion of Chinese exports to the U.S. market, there is also evidence which might suggest otherwise. Honey production and total bee colonies in China have been declining since 1991.[12] Apparently, inherent difficulties exist in data collection and forecasting of Chinese honey production.[13] Nonetheless, the information before me does not appear to support a conclusion that the rapid increase in Chinese honey imports will continue in 1994 and thereafter.

### b. Limitations on the ability of domestic producers to meet domestic consumption needs.

Although domestic honey production increased to a four year high in 1992 of 220.6 million pounds, production has been forecasted to decrease to 198.4 million pounds.[14] U.S. production of honey varies widely among regions and from year to year depending on rainfall, soil conditions, temperature, cropping patterns, management and various other environmental factors.[15] The fact that the forecasted decrease in 1993 production was caused, at least in part, by adverse weather conditions, indicates that domestic producers' elasticity of supply may be relatively low. In other words, should Chinese prices be forced to rise as a result of import relief, there are limits to the speed with which domestic producers could increase production to meet consumption needs.

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[7] (...continued)
1993. I note that the price differential between Chinese and domestic honey can be explained at least in part, by quality differences and larger lot purchases.

[8] CR at I-36, PR at II-25. The FY-1994 Appropriations Bill has eliminated the non-recourse nature of the loans available through the program to domestic producers. All loans made during the 1994 crop season must be repaid with interest. As a result, domestic producers will not, at least for the 1994 crop, be guaranteed a set price for the amount of their production covered by the loan program.

[9] CR at I-67, PR at II-51. Inventories have increased dramatically since 1990 to a high of 113.0 million pounds in 1993.

[10] CR at I-85, PR at II-62.

[11] CR at I-90, PR at II-67.

[12] CR at I-89, Table 25; PR at II-66.

[13] CR at I-90, fn 80; PR at II-65 fn 80.

[14] CR at I-59, PR at II-43.

[15] Id.

The evidence before me also indicates that Chinese honey is not fully substitutable for domestic honey in all applications. Evidence regarding the question of quality of Chinese honey imports is mixed.[16] Some domestic packers have indicated a clear preference for Chinese honey noting its consistency and higher moisture content.[17]

I conclude from the above that import relief should not unnecessarily curtail the quantity of Chinese honey imported in the U.S. market. Domestic consumption has been increasing steadily each year since 1991 and there exists little certainly that domestic producers will be able to significantly increase production in the short term. Any decrease in the amount of Chinese honey imported into the United States will either be replaced by other imports,[18] by an increase in domestic production, or by an increase in the consumption of other sweeteners. Under any of these scenarios, prices paid by U.S. consumers for honey will rise. To the extent possible, import relief should improve the competitive position of the domestic industry without upsetting existing supply channels.

c. The effect of import relief on the U.S. economy.

I have been mindful that any import relief provided to the U.S. honey industry will have an impact on the U.S. economy. Most forms of import relief are likely to cause an increase in domestic honey prices. This increase will affect household table use as well as industrial and commercial operations such as bakery, health food and cereal manufacturers.[19] In addition, sharp increases in domestic honey prices are likely to cause some industrial users of honey to switch to other caloric sweeteners.[20]

d. The inequitable trading environment created as a result of disparate tariff rates existing between the two countries.

I also believe it is appropriate to consider the trading environment that currently exists between the two countries. Data gathered in this investigation indicates that China is the world's largest producer of honey followed closely by the United States.[21] At the same time, the United States is the world's largest consumer of honey followed closely by China.[22]

Honey trade between the two countries does not, however, take place on a level playing field. The United States, in sharp contrast to China, has the most open honey market among the world's largest producers.[23] China's 55 percent ad valorem duty effectively protects the Chinese market by keeping U.S. and other producers out of one of the world's largest markets for honey. China's maintenance of one of the highest worldwide tariffs can be viewed as a governmental effort to unfairly manage trade patterns.[24] Despite China's high duty rate, the Chinese respondents have insisted that a quota is the only acceptable remedy

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[16] CR at I-52, PR at II-36.

[17] CR at I-19-21, PR at II-12-13.

[18] I am mindful that alternative sources of imported honey exist, such as Mexico and Argentina, that could displace Chinese honey imports. Such a result is not necessarily desireable. See, CR at I-86, Table 24; PR at II-63. In 1993, honey imports from countries other than China accounted for 19.1% of U.S. consumption in term of quantity. CR at E-19, Table E-11; PR at E-19.

[19] CR at I-24, PR at II-16.

[20] CR at I-28, PR at II-18.

[21] CR at I-86, Table 24; PR at II-63.

[22] Id.

[23] CR at I-92, PR at II-68. China currently has a 55% ad valorem tariff on imports of honey while the United States has a weight-based tariff which is approximately equal to a 2% ad valorem tariff.

[24] See, 19 U.S.C. § 2436(e)(2)(C)(iv).

because a tariff would unnecessarily injure the domestic packers.[25] I do not believe, however, that import relief in the form of a quota provides sufficient remedial flexibility.

e. The need to retain flexibility.

Import relief should be flexible enough to allow Chinese imports to grow if either U.S. consumption increases, U.S. production decreases or if some other event affects honey imports into the United States from other countries. Moreover, import relief may no longer be necessary, or it may become appropriate to modify relief should the honey price-support program be restored to some extent in 1995.[26]

Any number of unforeseeable events could alter current worldwide honey market dynamics. As previously mentioned, changing environmental conditions can have a significant effect on worldwide honey production. In addition, changes to tariff and non-tariff barriers in other countries could affect the financial condition of the U.S. industry.[27]

A case in point is the reason behind the recent decline in Chinese exports of honey. Estimates for 1993 indicate that total Chinese exports of honey will decline significantly.[28] This decline was due principally to a decline in Japanese purchases resulting from reduced demand for a honey-based beverage in Japan in late 1991 and 1992.[29] It is yet unclear how this event has or will affect the global honey marketplace and U.S. producers.

f. How import relief will promote domestic industry adjustment and promote competition.

The Commission requested U.S. honey producers and packers to describe and explain the actual and negative effects of Chinese honey imports on their growth, investment, ability to raise capital, and the scale of their capital investments.[30] A significant number of both producers and packers indicated that they had experienced a reduction in the size of capital investments and expansion projects and an increase in debt obligations.[31] The import relief provided should sufficiently adjust market prices so that domestic producers and packers can sell off existing inventories, obtain fair prices for current and future production, and continue to make the technological improvements necessary to increase productivity in the future.

## III. The remedy recommendation

My recommendation to the President is, subject to monitoring and other safeguards set forth below, to proclaim a tariff-rate quota for a two and one-half year period. Specifically, I recommend that in addition to the current weight based tariff rate that applies to imports of Chinese honey, the President impose a tariff-rate quota on such honey, under which an additional 15% ad valorem tariff rate would be imposed on the first 60 million pounds of Chinese honey imports each year, and an additional 25% ad valorem tariff would be imposed on imports of Chinese honey in excess of 60 million pounds in any given year.

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[25] Respondent's Post-Hearing Brief at 35-36. Economic analysis performed by ITC staff indicates that import relief in the form of a quota, tariff-rate quota or a tariff would necessarily have both a price and quantity effect on the U.S. honey market.

[26] CR at I-36, PR at II-25.

[27] CR at I-92 and I-64, PR at II-68 and II-48.

[28] CR at I-89, Table 25; PR at II-66.

[29] CR at I-90, PR at II-67.

[30] CR at F-2-9, PR at F-3-4.

[31] Id.

In order to maintain maximum flexibility, I recommend that the ITC be requested to monitor the domestic and Chinese honey markets and provide the U.S. Trade Representative with yearly reports. In addition, I recommend that the President request the ITC to conduct a review of any remedy imposed not later than two years after its imposition in order to facilitate the consideration of whether or not the remedy should be extended for a further time period.

I further recommend to the President that interested parties be given the right to petition the ITC for a review of the remedy imposed at any time after one year following any relief granted by the President. The ITC would initiate a review, if the petition demonstrates significant evidence that market conditions have materially changed so as to make modification or termination of the import relief appropriate. Following its review, the ITC would provide the President with a full report and recommendation.

## IV. Why the recommended remedy is appropriate

I believe that my recommended remedy is appropriate because it takes into consideration the relevant bilateral and multilateral conditions of competition and trade in the honey industry and strives to obtain balance and flexibility. Furthermore, in order to avoid unnecessary interference with market dynamics, I have attempted to provide the minimal relief necessary to prevent material injury from occurring.

In choosing an appropriate remedy I have recognized that all forms of import relief will have both a price and quantity effect on imports of Chinese honey. Any change in the prices and quantity of Chinese imports will in turn have an effect on domestic industry prices and sales. At the outset, it is important to establish a base quantity of Chinese honey imports that should be allowed to enter the U.S. market substantially unfettered. This amount should be relatively equal to the amount of Chinese honey imported into the United States during the most recent period that is representative of such imports.[32] The average amount of honey imported from China from 1991 through 1993 is approximately 59 million pounds.[33] I also note that in 1992, when domestic industry production was at a four year high, Chinese honey imports were 60.1 million pounds. It is appropriate, therefore, to establish 60 million pounds as a primary tier quantity in the tariff-rate quota I have recommended. I believe that a tariff rate of 25% on quantities in excess of 60 million pounds is appropriate because it would allow the possibility of additional imports in the event of a market shortfall, but at the same time, would sufficiently deter Chinese imports from continuing their rapid increase.[34]

Next I attempted to arrive at a target price effect on Chinese honey imports. In order to help evaluate the effects of applying various remedies in this investigation I used a computable partial equilibrium model developed by the ITC Office of Economics.[35] The

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[32] Although I do not believe that Section 203(d)(2) of the Trade Act of 1974 (pre-August 23, 1988 version) is applicable in regard to the remedy I have recommended, the limitation set forth in that provision is instructive.

[33] CR at E-19, Table E-11; PR at E-19.

[34] The ITC staff economic model indicates that if my recommended relief is imposed, quantities of Chinese honey imports above 60 million pounds are unlikely to enter the U.S. market. A tariff rate in excess of 25% would be more likely to deter additional imports and cause a shift of Chinese honey to countries other than the U.S.

[35] This model is based on well established principles of economics which organize available evidence on relevant economic relationships. The model, similar to one used in Commission anti-dumping and countervailing duty investigations, relates the imposition of duties, the removal of duties, or other price changes of imported goods to the resulting impact on U.S. producers and consumers of similar products.

(continued...)

modeling performed by the ITC Office of Economics specifically for my office indicates that a 15% tariff on the first 60 million pounds of Chinese honey would have an estimated quantity effect on Chinese imports in the range of -18.2% to -32.6%[36], and a price effect in the range of 11.2 to 13.7% depending on the inputs used in the modeling (a copy of the modeling is attached hereto as Exhibit A). I am quite comfortable with a price effect in the range indicated by the model. Currently, Chinese honey imports appear to undersell domestic honey by some 10 to 15%.[37] As explained above, some underselling by the Chinese imports is to be expected, because of quality differences. In addition, some absorption of the tariff will occur. Keeping in mind that the Commission did not find material injury at import levels of 60 or even 72 million pounds of Chinese honey, I find that if Chinese honey prices were caused to rise approximately 10% in the U.S. market, the domestic industry would be given appropriate breathing room to enable it to become more competitive.[38]

Finally, I note that my proposed remedy will have a relatively minor impact on the U.S. economy.[39] Some cost to U.S. consumers is unavoidable if the domestic industry is to be given import relief.[40] I believe, however, that my recommended import relief plan effectively balances the cost to consumers and the benefits to U.S. producers.[41]

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[35] (...continued)
Among the data required by the model are the relative shares (in the U.S. market) of the subject imports, of the comparable U.S. product, and of any other imports. The model also uses parameter values qualitatively estimated by staff based on information collected during the investigation. These include the responsiveness of demand to price changes for the product in the U.S.(the demand elasticity), the extent to which imports are substitutable for the U.S. product (substitution elasticities), and the responsiveness of production to price changes (the supply elasticity). As output, the model estimates the effects of changes in duties on the level of imports, the level of domestic production, domestic prices, and tariff revenues.

[36] As noted above, there are limitations to the degree of substitutability between domestic and Chinese honey and to the speed with which the domestic honey industry could react to an increase in domestic demand for U.S. honey. As a result, the estimated quantity effect would probably be in the low end of the range (i.e. closer to 20% less than the 1993 base year or approximately 58 million pounds), rather in the high end of that range.

[37] CR at I-107-108, PR at II-80-81.

[38] I emphasize that even if economic modeling was not available to me, I would have sought a remedy that would have the effect of causing Chinese honey prices to rise approximately 10-15% while, at the same time, ensuring that the quantity of Chinese honey imports did not fall below approximately 60 million pounds.

[39] See, Exhibit A.

[40] The remedy causes consumers to lose in two ways. First, it requires them to pay more for the honey they buy. Second, it induces them to redirect their purchases towards ones that they less prefer at the original prices. This second effect is sometimes called a loss resulting from "market distortion" because the remedy requires consumers to pay more for some goods but not for others and it is this distortion of relative prices that induces the change in purchases.

[41] I am reminded that the domestic industry was profitable throughout the period of investigation having net income of $3.7 million in 1992 which is 9.3% of total revenue. CR at E-19, Table E-11; PR at E-19. The economic model indicates that my recommended relief will have a positive $.4 to $2.3 million total revenue effect on the domestic industry.

EFFECTS OF A 15% TARIFF ON IMPORTS UP TO 60 MILLION LBS AND 25% TARIFF THEREAFTER (1993 BASE YEAR)

| ESTIMATED IMPACT ON DOMESTIC INDUSTRY (PERCENTAGE CHANGES) | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| Price: | 1.3% | 0.7% | 0.7% | 0.4% | 2.4% | 1.8% | 1.5% | 1.2% | 1.2% |
| Quantity: | 1.3% | 0.7% | 2.2% | 1.3% | 2.4% | 1.8% | 4.7% | 3.7% | 2.5% |
| Revenue: | 2.6% | 1.4% | 2.9% | 1.7% | 4.9% | 3.7% | 6.3% | 5.0% | 3.7% |
| QUANTITY CHANGES | | | | | | | | | |
| U.S. Production (millions of pounds): | 2.2 | 1.2 | 3.8 | 2.2 | 4.2 | 3.1 | 8.1 | 6.5 | 4.3 |
| U.S. Consumption (millions of pounds | (9.0) | (11.7) | (8.7) | (11.8) | (10.2) | (13.6) | (9.3) | (12.8) | (11.4) |
| Employment (hours): | 12,108.2 | 6,699.8 | 20,350.2 | 12,034.9 | 22,485.2 | 17,030.2 | 43,733.4 | 35,009.8 | 23,127.2 |
| Imports (millions of pounds): | (11.3) | (13.0) | (12.5) | (14.0) | (14.4) | (16.7) | (17.3) | (19.3) | (15.7) |
| ESTIMATED MARKET SHARES | | | | | | | | | |
| Domestic Market Share: | 63.3% | 63.4% | 63.5% | 63.6% | 64.4% | 64.6% | 65.1% | 65.3% | 64.3% |
| Target Import Market Share: | 17.0% | 16.9% | 16.8% | 16.8% | 14.9% | 14.8% | 14.2% | 14.1% | 15.5% |
| Non-Target Import Market Share: | 19.7% | 19.6% | 19.7% | 19.6% | 20.7% | 20.6% | 20.7% | 20.6% | 20.2% |
| Change in Value of U.S. Production: (millions of dollars) | $2.5 | $1.4 | $2.8 | $1.7 | $4.7 | $3.5 | $6.1 | $4.8 | $3.6 |
| ESTIMATED IMPACT ON TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 12.7% | 12.6% | 13.7% | 13.7% | 11.4% | 11.2% | 12.9% | 12.8% | 12.7% |
| Quantity: | -18.2% | -19.4% | -19.9% | -20.9% | -27.0% | -28.5% | -31.4% | -32.6% | -25.8% |
| Revenue: | -7.8% | -9.2% | -8.9% | -10.1% | -18.6% | -20.4% | -22.6% | -24.0% | -16.4% |
| Change in Quantity of Imports: (millions of pounds) | (13.2) | (14.0) | (14.4) | (15.1) | (19.5) | (20.6) | (22.7) | (23.6) | (18.7) |
| Change in Value of Imports: (millions of dollars) | ($2.2) | ($2.7) | ($2.6) | ($2.9) | ($5.4) | ($5.9) | ($6.5) | ($6.9) | ($4.7) |
| ESTIMATED IMPACT ON NON-TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 0.3% | 0.2% | 0.2% | 0.1% | 0.9% | 0.6% | 0.4% | 0.4% | 0.3% |
| Quantity: | 3.3% | 1.8% | 3.3% | 2.0% | 8.9% | 6.7% | 9.3% | 7.4% | 5.2% |
| Revenue: | 3.6% | 2.0% | 3.5% | 2.1% | 9.8% | 7.3% | 9.8% | 7.8% | 5.6% |
| Change in Quantity of Imports: (millions of pounds) | 1.9 | 1.0 | 1.9 | 1.1 | 5.1 | 3.9 | 5.4 | 4.3 | 3.0 |
| Change in Value of Imports: (millions of dollars) | $1.1 | $0.6 | $1.0 | $0.6 | $2.9 | $2.2 | $2.9 | $2.3 | $1.7 |

EFFECTS OF A 15% TARIFF ON IMPORTS UP TO 60 MILLION LBS AND 25% TARIFF THEREAFTER (1993 BASE YEAR)

| | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| OVERALL IMPACT ON U.S. ECONOMY (millions of dollars) | | | | | | | | | |
| Change in National Income: | ($0.3) | ($0.3) | ($0.4) | ($0.4) | ($0.4) | ($0.5) | ($0.6) | ($0.6) | ($0.5) |
| Benefit to Producers: | $1.3 | $0.7 | $0.7 | $0.4 | $2.3 | $1.8 | $1.5 | $1.2 | $1.2 |
| Cost to Consumers: | $4.7 | $4.0 | $4.3 | $4.0 | $5.5 | $4.7 | $4.8 | $4.4 | $4.5 |
| due to higher prices: | $3.0 | $2.9 | $3.2 | $3.1 | $2.5 | $2.4 | $2.6 | $2.5 | $2.8 |
| due to market distortion: | $1.7 | $1.1 | $1.1 | $0.8 | $3.0 | $2.4 | $2.2 | $1.9 | $1.7 |
| Tariff Revenue: | $3.5 | $3.5 | $3.5 | $3.4 | $3.2 | $3.1 | $3.0 | $2.9 | $3.2 |
| INPUTS | | | | | | | | | |
| Proposed Duty Rate: | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| ELASTICITIES OF SUBSTITUTION | | | | | | | | | |
| Domestic and Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Domestic and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Target and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| ELASTICITIES OF SUPPLY TO U.S. MARKET | | | | | | | | | |
| Domestic Product: | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 2 |
| Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| Non-Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| U.S. MARKET | | | | | | | | | |
| Aggregate Elasticity of Demand: | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -1.0 |
| Employment (hours): | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 |
| DOMESTIC SHIPMENTS | | | | | | | | | |
| Quantity (miliions of pounds): | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 |
| Value (millions of dollars): | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 |
| TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 |
| Value (millions of dollars): | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 |
| NON-TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 |
| Value (millions of dollars): | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 |

## ADDITIONAL VIEWS ON REMEDY OF COMMISSIONER CRAWFORD

Having found that rapidly increasing imports of honey from China are a threat of material injury to the domestic honey industry, I recommend to the President that he impose a duty of 10 percent ad valorem, in lieu of the existing rate of duty, on honey from China for a period of three years, with a review of this remedy action prior to the end of three years to determine whether an extension of remedy is appropriate. In my judgment, imposition of this remedy will prevent material injury.

I. Establish a remedy that will eliminate threat and prevent material injury

The goal of the remedy that I am recommending is to return imports of Chinese honey to a level so as to eliminate the threat of material injury and prevent material injury to the domestic industry. I believe the current level of imports from China, if maintained, will materially injure domestic industry. I further believe, given current and expected market conditions, that a return to the 1992 level of imports of honey from China will raise domestic sales and prices sufficiently to eliminate the threat of material injury and prevent material injury. Any additional increase in duties would reduce imports below the level that I find necessary to prevent material injury and would therefore result in unnecessary social and economic costs to the United States.[1]

I recommend a 10 percent duty based on the Commission's economics staff analysis and other factors.[2] The Commission analysis estimates that a 10 percent duty will reduce imports by a range of 13 to nearly 24 percent. I expect a decline in imports from China of just under 20 percent based on: 1) the high substitutability between U.S., Chinese and third country honey, 2) the ready availability of third country imports, and 3) the low supply elasticity of U.S. producers. These factors correspond with "Case 5" on Table 1 (see attachment). As Chinese imports are estimated to be 72.4 million pounds in 1993, the proposed tariff would reduce imports to 58.1 million pounds.[3] [4] This achieves the 1992 level of imports.[5]

I have considered several factors in making my recommendation of an appropriate remedy. First, as discussed in the Commission's finding of market disruption, the domestic honey industry experienced an increase in difficulties from 1992 to 1993. Trends in production, inventories and income suggest an increase in domestic industry difficulties from 1992 to 1993.[6] However, the data present a somewhat mixed picture for the 1990 to 1992 period.

Second, the evidence before the Commission indicates that the large increase in imports can partly be explained by the significant increase in demand for honey by U.S.

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[1] In general, the imposition of barriers to trade results in a net economic loss since higher costs to consumers and deadweight losses generally outweigh the benefits to producers. Deadweight losses are losses in benefits to consumers and producers that are not captured by any party.

[2] An economic analysis of a 10 percent tariff, completed by Commission staff, is attached as Table 1.

[3] See CR at I-97, PR at II-73 for the 1993 estimate of Chinese imports to the US.

[4] Please note that the Commission's economic analysis in Tables 1-3 (attached) uses 1992 data in its analysis. I have applied the estimates of percentage changes to the available data for 1993.

[5] Note that I recommend a 10 percent tariff in lieu of the existing one cent per pound tariff. The Commission's analysis presented in Tables 1 through 3 includes this one cent tariff. Thus the estimated impact of a 10 percent tariff will likely reduce imports of honey from China to slightly more than 58.1 million pounds. This would achieve the 1992 import levels of 60.1 million pounds.

[6] I note that there was an exceptionally low response rate to questionnaires sent by the Commission. This raises the issue of accuracy of this data.

industrial users.[7] Industrial users generally consume lower quality, darker honey. Such honey accounts for about one third of the increase in imports from China between 1991 and 1992 and accounts for all of the increase between interim 1992 and interim 1993.[8] Although U.S. prices of darker honey have fallen consistently since the fourth quarter of 1992, this can be explained at least in part by falling prices of the alternative sweetener high fructose corn syrup (HFCS).[9] HFCS and honey are highly substitutable in food and industrial uses.[10]

Third, honey tariffs in the European Union (EC) and Japan are expected to fall as a result of the recent conclusion of the GATT Uruguay Round on December 15, 1993. This likely will result in increased honey consumption worldwide and therefore higher prices worldwide.

Fourth, total Chinese exports are unlikely to increase significantly in the future. In fact, the FAS/USDA estimates that total Chinese exports fell 14.7 percent, or 25.8 million pounds, between 1992 and 1993.[11] This reduction can be explained by falling production and increasing consumption in China.[12]

In light of these current and expected economic conditions, it is my judgment that a 10 percent duty will lead to higher domestic sales and higher prices, which will be sufficient to eliminate the threat of material injury and prevent material injury.[13]

II. A 10 percent tariff vs. Alternative Recommendations

Several of my colleagues are recommending that the President impose relief in the form of a tariff-rate quota system. In my view, a 10 percent duty has several advantages.

First, I believe the tariff-rate quota recommended by my colleagues would exceed the amount of relief necessary to prevent material injury and eliminate the threat of material injury. Moreover, I believe the implementation of such tariff-rate quotas may result in greater economic and social costs than benefits.[14]

Second, a flat tariff retains flexibility for the US honey consumer. A tariff-quota system will likely lead to the creation of a quota-granting administrative system in China.[15] Chinese officials would then be responsible for allocating export quotas among exporters to

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[7] The information before the Commission indicates that industrial honey demand has been growing significantly from 1990 to 1993. See Honey Users prehearing brief, Attachment 7 and Transcript at p. 103. Table 26 at CR I-94, PR at II-70 also shows an increase in industrial use honey from 1991 to 1992.

[8] CR at I-94, PR at II-70.

[9] The USDA reports that prices of HFCS fell 42 percent from 23.39 cents per pound to 16.47 cents between September 1992 and April 1993. See Honey Users Prehearing Brief, Attachment 9, Tables 35 and 36.

[10] CR at I-28, PR at II-18.

[11] CR at I-89, PR at II-66.

[12] Chinese production has fallen as a result of increasing costs and the termination of Chinese price supports and export subsidies. See Pre-Hearing Brief of Honey Users Council, Attachments 13 and 19; CR at I-86, PR at II-63.

[13] The high substitutability of third country imports for Chinese imports will mute the economic effects of any reduction in Chinese imports. In the absence of ready substitutes from third countries, a lower tariff would have been sufficient.

[14] An economic analysis by the Commission indicates that the ratio of net economic losses to producer benefits worsens when moving from a 10 percent flat tariff to the higher tariff-rate quotas. These ratios are as follows: 1) 0.13 for a 10 percent flat tariff 2) 0.17 for a 15/25 tariff-rate quota, and 3) 0.29 for a 25/50 tariff-rate quota. See attached Tables, labeled 1, 2 and 3.

[15] As would be the case for either a straight quota or a tariff-rate quota, officials in the exporting country have the option of allowing their exporters to compete in the United States on a first-come first-serve basis. However, it is more typical for an export quota administrative system to be implemented.

the United States. This creates allocation problems. For example, if U.S. industrial honey demand increases while demand for other forms of honey remains constant, a tariff-rate quota system may require an administrative decision by Chinese officials to reallocate quotas from a primarily retail honey producer to an industrial honey producer.[16] A flat tariff avoids this problem because no allocation system is required. Another advantage of a flat tariff is the flexibility it provides in the event of changes in the level of domestic production. If domestic production falls due to, for example, the suspension or termination of the U.S. Honey Program, a flat tariff will more easily allow a corresponding increase in imports to satisfy consumer needs; a tariff-rate quota with a fixed threshold will stifle the flow of imports beyond the threshold level. Thus a tariff-rate quota is inappropriate since it implicitly assumes some constant level of domestic production.[17]

Third, the establishment of a tariff-rate quota system would create additional, unnecessary administrative costs both in China, to administer the quotas, and in the United States, where special monitoring in each quarter is required to identify imports that exceed a specified quarterly quota.

Fourth, Chinese honey producers have not been found to be trading unfairly. Moreover, the high tariff-rate quotas undercut current global efforts to reduce agricultural trade barriers, as well as efforts to move toward tariffs and away from quotas.

## III. Conclusion

The Commission has determined that imports of honey from China have not caused material injury to the domestic industry. Rather, the Commission has determined that the rapidly increasing imports of honey from China represent a threat of material injury to the domestic industry. Because the current level of imports has not caused material injury, in my view material injury will be prevented by a remedy that returns imports of honey from China to their 1992 levels. For the reasons discussed above, I believe that a 10 percent duty on imports of honey from China will accomplish this result and therefore I recommend this remedy to the President.

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[16] It is also possible that a secondary market will emerge to buy and sell quota rights.

[17] I further note that a two-tiered tariff-quota can have perverse effects on import decisions. For example, US importers of Chinese honey may rush to buy at the beginning of each quarter in an effort to avoid the higher duties.

EFFECTS OF A 10 PERCENT TARIFF ON IMPORTS FROM CHINA

TABLE 1

| ESTIMATED IMPACT ON DOMESTIC | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 |
|---|---|---|---|---|---|---|---|---|
| PERCENTAGE CHANGES | | | | | | | | |
| Price: | 0.8% | 0.4% | 0.4% | 0.3% | 1.5% | 1.1% | 0.9% | 0.8% |
| Quantity: | 0.8% | 0.4% | 1.3% | 0.8% | 1.5% | 1.1% | 2.9% | 2.3% |
| Revenue: | 1.6% | 0.9% | 1.8% | 1.0% | 3.0% | 2.3% | 3.8% | 3.1% |
| QUANTITY CHANGES | | | | | | | | |
| U.S. Production: | 1.5 | 0.8 | 2.4 | 1.4 | 2.7 | 2.1 | 5.3 | 4.2 |
| U.S. Consumption: | (5.2) | (6.9) | (5.0) | (6.9) | (6.1) | (8.2) | (5.6) | (7.7) |
| Employment: | 7,038.1 | 3,876.1 | 11,736.3 | 6,933.2 | 13,189.3 | 9,941.8 | 25,299.6 | 20,229.6 |
| Imports: | (6.7) | (7.7) | (7.4) | (8.3) | (8.9) | (10.2) | (10.8) | (11.9) |
| ESTIMATED MARKET SHARES | | | | | | | | |
| Domestic Market Share: | 65.8% | 65.9% | 66.0% | 66.0% | 66.6% | 66.7% | 67.1% | 67.2% |
| Target Import Market Share: | 15.6% | 15.5% | 15.4% | 15.4% | 14.2% | 14.1% | 13.7% | 13.7% |
| Non-Target Import Market Share: | 18.6% | 18.6% | 18.6% | 18.6% | 19.2% | 19.1% | 19.2% | 19.2% |
| Change in Value of U.S. Production: | $1.6 | $0.9 | $1.8 | $1.1 | $3.1 | $2.3 | $3.9 | $3.1 |
| | | | | | | | | |
| ESTIMATED IMPACT ON TARGET IMPORTS | | | | | | | | |
| PERCENTAGE CHANGES | | | | | | | | |
| Price: | 8.5% | 8.4% | 9.2% | 9.1% | 7.6% | 7.5% | 8.6% | 8.5% |
| Quantity: | -13.0% | -13.8% | -14.2% | -14.9% | -19.7% | -20.7% | -23.1% | -23.9% |
| Revenue: | -5.6% | -6.5% | -6.4% | -7.2% | -13.6% | -14.8% | -16.5% | -17.5% |
| Change in Quantity of Imports: | (7.8) | (8.3) | (8.5) | (9.0) | (11.8) | (12.5) | (13.9) | (14.4) |
| Change in Value of Imports: | ($1.5) | ($1.7) | ($1.7) | ($1.9) | ($3.5) | ($3.9) | ($4.3) | ($4.6) |
| | | | | | | | | |
| ESTIMATED IMPACT ON NON-TARGET IMPORTS | | | | | | | | |
| PERCENTAGE CHANGES | | | | | | | | |
| Price: | 0.2% | 0.1% | 0.1% | 0.1% | 0.5% | 0.4% | 0.3% | 0.2% |
| Quantity: | 2.0% | 1.1% | 2.0% | 1.2% | 5.4% | 4.1% | 5.6% | 4.5% |
| Revenue: | 2.2% | 1.2% | 2.1% | 1.2% | 6.0% | 4.5% | 5.9% | 4.7% |
| Change in Quantity of Imports: | 1.1 | 0.6 | 1.1 | 0.6 | 3.0 | 2.2 | 3.1 | 2.5 |
| Change in Value of Imports: | $0.6 | $0.3 | $0.6 | $0.4 | $1.7 | $1.3 | $1.7 | $1.4 |
| | | | | | | | | |
| OVERALL IMPACT ON U.S. ECONOMY | | | | | Ratio=0.13 | | | |
| Change in National Income: | ($0.1) | ($0.2) | ($0.2) | ($0.2) | ($0.2) | ($0.2) | ($0.3) | ($0.3) |
| Benefit to Producers: | $0.8 | $0.5 | $0.5 | $0.3 | $1.5 | $1.2 | $1.0 | $0.8 |
| Cost to Consumers: | $2.9 | $2.5 | $2.7 | $2.5 | $3.5 | $3.0 | $3.0 | $2.8 |
| due to higher prices: | $1.9 | $1.9 | $2.1 | $2.0 | $1.6 | $1.6 | $1.8 | $1.7 |
| due to market distortion: | $1.0 | $0.6 | $0.6 | $0.5 | $1.9 | $1.5 | $1.3 | $1.1 |
| Tariff Revenue | $2.3 | $2.3 | $2.2 | $2.2 | $2.1 | $2.1 | $2.0 | $2.0 |

EFFECTS OF A 10 PERCENT TARIFF ON IMPORTS FROM CHINA

TABLE 1 (Cont'd)

| INPUTS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Proposed Duty Rate: | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| ELASTICITIES OF SUBSTITUTION | | | | | | | | |
| Domestic and Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 |
| Domestic and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 |
| Target and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 |
| ELASTICITIES OF SUPPLY TO U.S. MARKET | | | | | | | | |
| Domestic Product: | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 |
| Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 |
| Non-Target Imports (inf=infinity): | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 |
| U.S. MARKET | | | | | | | | |
| Aggregate Elasticity of Demand: | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 |
| Employment | 884,910 | 884,910 | 884,910 | 884,910 | 884,910 | 884,910 | 884,910 | 884,910 |
| DOMESTIC SHIPMENTS | | | | | | | | |
| Quantity: | 183.8 | 183.8 | 183.8 | 183.8 | 183.8 | 183.8 | 183.8 | 183.8 |
| Value: | $102.6 | $102.6 | $102.6 | $102.6 | $102.6 | $102.6 | $102.6 | $102.6 |
| TARGET IMPORTS | | | | | | | | |
| Quantity: | 60.1 | 60.1 | 60.1 | 60.1 | 60.1 | 60.1 | 60.1 | 60.1 |
| Value: | $26.1 | $26.1 | $26.1 | $26.1 | $26.1 | $26.1 | $26.1 | $26.1 |
| NON-TARGET IMPORTS | | | | | | | | |
| Quantity: | 54.6 | 54.6 | 54.6 | 54.6 | 54.6 | 54.6 | 54.6 | 54.6 |
| Value: | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 |

EFFECTS OF A 15% TARIFF ON IMPORTS UP TO 60 MILLION LBS AND 25% TARIFF THEREAFTER (1993 BASE YEAR)

TABLE 2

| ESTIMATED IMPACT ON DOMESTIC | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| PERCENTAGE CHANGES | | | | | | | | | |
| Price: | 1.3% | 0.7% | 0.7% | 0.4% | 2.4% | 1.8% | 1.5% | 1.2% | 1.2% |
| Quantity: | 1.3% | 0.7% | 2.2% | 1.3% | 2.4% | 1.8% | 4.7% | 3.7% | 2.5% |
| Revenue: | 2.6% | 1.4% | 2.9% | 1.7% | 4.9% | 3.7% | 6.3% | 5.0% | 3.7% |
| QUANTITY CHANGES | | | | | | | | | |
| U.S. Production: | 2.2 | 1.2 | 3.8 | 2.2 | 4.2 | 3.1 | 8.1 | 6.5 | 4.3 |
| U.S. Consumption: | (9.0) | (11.7) | (8.7) | (11.8) | (10.2) | (13.6) | (9.3) | (12.8) | (11.4) |
| Employment: | 12,108.2 | 6,699.8 | 20,350.2 | 12,034.9 | 22,485.2 | 17,030.2 | 43,733.4 | 35,009.8 | 23,127.2 |
| Imports: | (11.3) | (13.0) | (12.5) | (14.0) | (14.4) | (16.7) | (17.3) | (19.3) | (15.7) |
| ESTIMATED MARKET SHARES | | | | | | | | | |
| Domestic Market Share: | 63.3% | 63.4% | 63.5% | 63.6% | 64.4% | 64.6% | 65.1% | 65.3% | 64.3% |
| Target Import Market Share: | 17.0% | 16.9% | 16.8% | 16.8% | 14.9% | 14.8% | 14.2% | 14.1% | 15.5% |
| Non-Target Import Market Share: | 19.7% | 19.6% | 19.7% | 19.6% | 20.7% | 20.6% | 20.7% | 20.6% | 20.2% |
| Capacity Utilization: | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Change in Value of U.S. Production: | $2.5 | $1.4 | $2.8 | $1.7 | $4.7 | $3.5 | $6.1 | $4.8 | $3.6 |
| ESTIMATED IMPACT ON TARGET IMPORTS | | | | | | | | | |
| PERCENTAGE CHANGES | | | | | | | | | |
| Price: | 12.7% | 12.6% | 13.7% | 13.7% | 11.4% | 11.2% | 12.9% | 12.8% | 12.7% |
| Quantity: | -18.2% | -19.4% | -19.9% | -20.9% | -27.0% | -28.5% | -31.4% | -32.6% | -25.8% |
| Revenue: | -7.8% | -9.2% | -8.9% | -10.1% | -18.6% | -20.4% | -22.6% | -24.0% | -16.4% |
| Change in Quantity of Imports: | (13.2) | (14.0) | (14.4) | (15.1) | (19.5) | (20.6) | (22.7) | (23.6) | (18.7) |
| Change in Value of Imports: | ($2.2) | ($2.7) | ($2.6) | ($2.9) | ($5.4) | ($5.9) | ($6.5) | ($6.9) | ($4.7) |
| ESTIMATED IMPACT ON NON-TARGET IMPORTS | | | | | | | | | |
| PERCENTAGE CHANGES | | | | | | | | | |
| Price: | 0.3% | 0.2% | 0.2% | 0.1% | 0.9% | 0.6% | 0.4% | 0.4% | 0.3% |
| Quantity: | 3.3% | 1.8% | 3.3% | 2.0% | 8.9% | 6.7% | 9.3% | 7.4% | 5.2% |
| Revenue: | 3.6% | 2.0% | 3.5% | 2.1% | 9.8% | 7.3% | 9.8% | 7.8% | 5.6% |
| Change in Quantity of Imports: | 1.9 | 1.0 | 1.9 | 1.1 | 5.1 | 3.9 | 5.4 | 4.3 | 3.0 |
| Change in Value of Imports: | $1.1 | $0.6 | $1.0 | $0.6 | $2.9 | $2.2 | $2.9 | $2.3 | $1.7 |
| OVERALL IMPACT ON U.S. ECONOMY | | | | | | Ratio=0.17 | | | |
| Change in National Income: | ($0.3) | ($0.3) | ($0.4) | ($0.4) | ($0.4) | ($0.5) | ($0.6) | ($0.6) | ($0.5) |
| Benefit to Producers: | $1.3 | $0.7 | $0.7 | $0.4 | $2.3 | $1.8 | $1.5 | $1.2 | $1.2 |
| Cost to Consumers: | $4.7 | $4.0 | $4.3 | $4.0 | $5.5 | $4.7 | $4.8 | $4.4 | $4.5 |
| due to higher prices: | $3.0 | $2.9 | $3.2 | $3.1 | $2.5 | $2.4 | $2.6 | $2.5 | $2.8 |
| due to market distortion: | $1.7 | $1.1 | $1.1 | $0.8 | $3.0 | $2.4 | $2.2 | $1.9 | $1.7 |
| Tariff Revenue | $3.5 | $3.5 | $3.5 | $3.4 | $3.2 | $3.1 | $3.0 | $2.9 | $3.2 |

EFFECTS OF A 15% TARIFF ON IMPORTS UP TO 60 MILLION LBS AND 25% TARIFF THEREAFTER (1993 BASE YEAR)

TABLE 2 (Cont'd)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| INPUTS | | | | | | | | | |
| Proposed Duty Rate: | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% |
| ELASTICITIES OF SUBSTITUTION | | | | | | | | | |
| Domestic and Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Domestic and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Target and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| ELASTICITIES OF SUPPLY TO U.S. ARKET | | | | | | | | | |
| Domestic Product: | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 2 |
| Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| Non-Target Imports (inf=infinity): | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| U.S. MARKET | | | | | | | | | |
| Aggregate Elasticity of Demand: | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -1.0 |
| Domestic Capacity Utilization: | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Employment | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 |
| DOMESTIC SHIPMENTS | | | | | | | | | |
| Quantity: | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 |
| Value: | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 |
| TARGET IMPORTS | | | | | | | | | |
| Quantity: | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 |
| Value: | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 |
| NON-TARGET IMPORTS | | | | | | | | | |
| Quantity: | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 |
| Value: | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 |
| | | | | | | | | | |
| VALUES CALCULATED FROM INPUT | | | | | | | | | |
| VALUE SHARES OF U.S. MARKET | | | | | | | | | |
| Domestic Product: | 62.3% | 62.3% | 62.3% | 62.3% | 62.3% | 62.3% | 62.3% | 62.3% | 62.3% |
| Target Imports: | 18.6% | 18.6% | 18.6% | 18.6% | 18.6% | 18.6% | 18.6% | 18.6% | 18.6% |
| Non-Target Imports: | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% | 19.2% |
| ELASTICITIES OF DEMAND IN U.S. ARKET | | | | | | | | | |
| Domestic Product: | -1.2 | -1.5 | -1.2 | -1.5 | -2.0 | -2.3 | -2.0 | -2.3 | -1.8 |
| Target Imports: | -1.8 | -1.9 | -1.8 | -1.9 | -3.4 | -3.5 | -3.4 | -3.5 | -2.6 |
| Non-Target Imports: | -1.8 | -1.8 | -1.8 | -1.8 | -3.4 | -3.5 | -3.4 | -3.5 | -2.6 |
| CROSS ELASTICITY OF DOMESTIC EMAND | | | | | | | | | |
| wrt Target Import Price: | 0.2 | 0.1 | 0.2 | 0.1 | 0.6 | 0.5 | 0.6 | 0.5 | 0.4 |
| wrt Non-Target Import Price: | 0.2 | 0.2 | 0.2 | 0.2 | 0.6 | 0.5 | 0.6 | 0.5 | 0.4 |
| CROSS ELASTICITY OF TARGET IM ORTS | | | | | | | | | |
| wrt Domestic Product Price: | 0.8 | 0.5 | 0.8 | 0.5 | 2.0 | 1.7 | 2.0 | 1.7 | 1.2 |
| wrt Non-Target Import Price: | 0.2 | 0.2 | 0.2 | 0.2 | 0.6 | 0.5 | 0.6 | 0.5 | 0.4 |
| CROSS ELASTICITY OF NON-TARG T IMPORTS | | | | | | | | | |
| wrt Domestic Product Price: | 0.8 | 0.5 | 0.8 | 0.5 | 2.0 | 1.7 | 2.0 | 1.7 | 1.2 |
| wrt Target Import Price: | 0.2 | 0.1 | 0.2 | 0.1 | 0.6 | 0.5 | 0.6 | 0.5 | 0.4 |

TABLE 3

EFFECTS OF A 25% TARIFF UP TO 50 MILLION POUNDS AND A 50% TARIFF THEREAFTER (1993 BASE YEAR)

| ESTIMATED IMPACT ON DOMESTIC INDUSTRY (PERCENTAGE CHANGES) | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| Price: | 2.4% | 1.2% | 1.2% | 0.7% | 3.9% | 2.9% | 2.5% | 2.0% | 2.0% |
| Quantity: | 2.4% | 1.2% | 3.7% | 2.1% | 3.9% | 2.9% | 7.6% | 6.0% | 4.0% |
| Revenue: | 4.9% | 2.5% | 4.9% | 2.8% | 7.9% | 5.9% | 10.2% | 8.1% | 6.0% |
| QUANTITY CHANGES | | | | | | | | | |
| U.S. Production (millions of pounds): | 4.1 | 2.1 | 6.3 | 3.6 | 6.7 | 5.1 | 13.1 | 10.4 | 6.9 |
| U.S. Consumption (millions of pounds | (14.7) | (18.5) | (12.8) | (17.2) | (13.5) | (18.6) | (10.8) | (16.4) | (15.7) |
| Employment (hours): | 22,450.9 | 11,562.9 | 34,244.9 | 19,288.5 | 36,156.4 | 27,337.7 | 70,792.3 | 56,517.5 | 37,196.3 |
| Imports (millions of pounds): | (18.9) | (20.6) | (19.1) | (20.8) | (20.2) | (23.7) | (23.9) | (26.8) | (22.5) |
| ESTIMATED MARKET SHARES | | | | | | | | | |
| Domestic Market Share: | 64.2% | 64.2% | 64.3% | 64.3% | 65.3% | 65.7% | 66.5% | 66.7% | 65.4% |
| Target Import Market Share: | 15.7% | 15.8% | 15.7% | 15.8% | 13.0% | 12.9% | 12.0% | 11.9% | 13.9% |
| Non-Target Import Market Share: | 20.1% | 20.0% | 20.0% | 19.9% | 21.6% | 21.4% | 21.6% | 21.4% | 20.7% |
| Change in Value of U.S. Production: (millions of dollars) | $4.7 | $2.4 | $4.7 | $2.7 | $7.6 | $5.7 | $9.9 | $7.8 | $5.8 |
| ESTIMATED IMPACT ON TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 24.7% | 22.6% | 24.0% | 22.7% | 18.9% | 18.5% | 21.3% | 21.1% | 21.1% |
| Quantity: | -30.9% | -30.9% | -30.9% | -31.3% | -39.5% | -41.4% | -45.2% | -46.7% | -37.9% |
| Revenue: | -13.9% | -15.4% | -14.4% | -15.7% | -28.0% | -30.6% | -33.6% | -35.5% | -24.8% |
| Change in Quantity of Imports: (millions of pounds) | (22.4) | (22.4) | (22.4) | (22.6) | (28.6) | (30.0) | (32.7) | (33.8) | (27.4) |
| Change in Value of Imports: (millions of dollars) | ($4.0) | ($4.4) | ($4.1) | ($4.5) | ($8.1) | ($8.8) | ($9.7) | ($10.2) | ($7.1) |
| ESTIMATED IMPACT ON NON-TARGET IMPORTS (PERCENTAGE CHANGES) | | | | | | | | | |
| Price: | 0.6% | 0.3% | 0.3% | 0.2% | 1.4% | 1.0% | 0.7% | 0.6% | 0.5% |
| Quantity: | 6.1% | 3.1% | 5.6% | 3.1% | 14.5% | 10.8% | 15.2% | 12.1% | 8.5% |
| Revenue: | 6.7% | 3.4% | 5.9% | 3.3% | 16.1% | 12.0% | 16.1% | 12.7% | 9.1% |
| Change in Quantity of Imports: (millions of pounds) | 3.5 | 1.8 | 3.3 | 1.8 | 8.4 | 6.3 | 8.9 | 7.0 | 4.9 |
| Change in Value of Imports: (millions of dollars) | $2.0 | $1.0 | $1.7 | $1.0 | $4.8 | $3.6 | $4.8 | $3.8 | $2.7 |

* See next page for ratio.

TABLE 3 (Cont'd)

EFFECTS OF A 25% TARIFF UP TO 50 MILLION POUNDS AND A 50% TARIFF THEREAFTER (1993 BASE YEAR)

| | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 | Case 7 | Case 8 | AVG |
|---|---|---|---|---|---|---|---|---|---|
| OVERALL IMPACT ON U.S. ECONOMY (millions of dollars) | | | | | Ratio=0.29 | | | | |
| Change in National Income: | ($1.1) | ($1.0) | ($1.1) | ($1.0) | ($1.1) | ($1.1) | ($1.4) | ($1.4) | ($1.2) |
| Benefit to Producers: | $2.3 | $1.2 | $1.2 | $0.7 | $3.8 | $2.9 | $2.5 | $2.0 | $1.9 |
| Cost to Consumers: | $8.5 | $6.8 | $7.1 | $6.2 | $8.6 | $7.4 | $7.5 | $6.8 | $7.0 |
| due to higher prices: | $5.0 | $4.5 | $4.8 | $4.5 | $3.5 | $3.2 | $3.6 | $3.4 | $3.9 |
| due to market distortion: | $3.6 | $2.3 | $2.3 | $1.7 | $5.1 | $4.2 | $3.9 | $3.4 | $3.2 |
| Tariff Revenue | $5.0 | $5.0 | $5.0 | $4.9 | $4.4 | $4.2 | $3.9 | $3.8 | $4.5 |
| INPUTS | | | | | | | | | |
| Proposed Duty Rate: | 29.4% | 27.2% | 26.3% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% | 25.0% |
| ELASTICITIES OF SUBSTITUTION | | | | | | | | | |
| Domestic and Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Domestic and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| Target and Non-Target Imports: | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 3 |
| ELASTICITIES OF SUPPLY TO U.S. MARKET | | | | | | | | | |
| Domestic Product: | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 3 | 2 |
| Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| Non-Target Imports: | 10 | 10 | 20 | 20 | 10 | 10 | 20 | 20 | 15 |
| U.S. MARKET | | | | | | | | | |
| Aggregate Elasticity of Demand: | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -0.8 | -1.2 | -1.0 |
| Employment ( hours): | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 | 935,548 |
| DOMESTIC SHIPMENTS | | | | | | | | | |
| Quantity (millions of pounds): | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 | 172.9 |
| Value (millions of dollars): | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 | $96.5 |
| TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 | 72.4 |
| Value (millions of dollars): | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 | $28.8 |
| NON-TARGET IMPORTS | | | | | | | | | |
| Quantity (millions of pounds): | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 | 58.1 |
| Value (millions of dollars): | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 | $29.7 |

## DISSENTING VIEWS OF COMMISSIONER BRUNSDALE
## Honey from the People's Republic of China
## Inv. No. 406-13

Based on the record in this investigation, I determine that no market disruption exists with respect to the honey industry in the United States, because the rapid increase in Chinese honey imports is not a significant cause of material injury or threat thereof to the domestic industry producing honey.

Section 406 requires the Commission to find market disruption whenever imports of an article are increasing rapidly, either absolutely or relatively, so as to be a significant cause of material injury, or threat thereof, to such domestic industry.[1] "Significant cause" means "a cause which contributes significantly to the material injury of the domestic industry, but need not be equal to or greater than any other cause."[2]

The language of this statute, like section 201 and unlike Title VII, requires the Commission to make three separate findings in order to reach an affirmative determination. First, we must find imports to be increasing rapidly. Second, we must find material injury or a threat thereof to the domestic industry, and third, we must find imports to be a significant cause of the material injury or threat.

I agree with my colleagues in the majority on a number of issues in this case. I find, as they do, one domestic industry consisting of beekeepers and honey packers who blend, process, and pack raw or partially processed honey. Most honey sold in the United States is packed by the beekeepers or their cooperatives. Thus, even though the subject imports consisted almost exclusively of raw or partially processed honey sold in bulk form, the economic interest of the two groups is the same.[3] I note, however, that independent packers may have disparate economic interests, since they benefit from low raw honey prices, and thus benefit from any increase in imports.[4] Available data do not permit us to separate these groups of packers, but in evaluating the data, I have kept in mind that beekeepers and producer/packers are the groups most harmed by increased honey imports from China.

I also agree with the majority's finding that Chinese honey imports have been increasing rapidly. They rose from 24.9 million pounds valued at $8.9 million in 1989, to 60.1 million pounds valued at $26.1 million in 1992. In addition, the market share of Chinese honey increased significantly during the period of investigation, from 8.7 to 20.1 percent based on quantity and from 6.6 to 16.6 percent based on value.[5]

The majority based their affirmative finding on a threat of material injury to the domestic industry. Therefore, I assume that we are in agreement that the present state of the domestic industry could not be characterized as materially injured.

Beekeepers' production increased steadily from 177 million pounds in 1989 to 220.6 million pounds in 1992, as did the yield per colony.[6] The average farm price of honey per pound increased from $.51 in 1989 to $.56 in 1992. While USDA estimated a drop in production in 1993 back to 1990 production levels, due to severe flooding in the midwest, there are some reports that production may actually be higher than originally anticipated.[7]

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[1] 19 U.S.C. § 2436(e)(2)(A).
[2] Id. at (B)(ii)
[3] See CR at I-94, Table 26; PR at II-70.
[4] Some honey cooperatives import honey to blend with domestic honey.
[5] See CR at I-98, PR at II-74. I put little weight on estimated 1993 data.
[6] See Report at Table 12 and Table E-7. Production fluctuations often depend on things such as weather conditions. I note that sales also increased substantially from 1990 to 1991. Full year information of sales for 1992 is not available.
[7] See Report at Table 6 and FN. 64.

Production by packers also increased since 1990, and that increase continued through interim 1993.[8]

Our employment and financial information is based on an incomplete response to questionnaires sent to a sample of beekeepers and packers.[9] This is, however, the best information available to the Commission. The total number of hours worked by beekeepers and packers increased throughout the period of investigation.[10] While hourly wages fluctuated, total compensation, increased.

Revenue from beekeeping (not strictly from honey sales) increased throughout the period of investigation, but costs increased faster. Thus, net income decreased from 12.3 percent of total revenue to 9.3 percent. The net income of packers increased throughout the period of investigation, though it remained at a relatively low level.[11]

Inventories of U.S.-produced honey decreased sharply from 1986 through 1990, but increased thereafter reaching 1989 levels in 1992.[12] Packers' inventories decreased from 6.6 percent of production in 1990 to 6.3 percent of production in 1992.

The financial experience of beekeepers has been linked closely to U.S. government program payments. These payments declined sharply in recent years from $100 million, 50 percent of a beekeeper's income, in 1988 to $17 million, only 13 percent of income, in 1992. Given the decline in support payments, I find the industry's performance to be remarkably good. After reviewing all the data I find that the industry is not materially injured.

The condition of the industry and market trends do not lead me to conclude that Chinese honey imports are a significant cause of threat to the domestic industry, nor do the current trends indicate an industry where material injury is imminent. In addition, for the reasons discussed below, I do not believe that Chinese imports will continue to increase at the present rate, and I do not believe that the U.S. market is the focal point for Chinese exports.[13]

In analyzing market disruption, the Commission is instructed to consider the volume of Chinese honey imports, their effect on prices of domestic honey and on domestic producers, and evidence of disruptive pricing practices or other efforts to unfairly manage trade patterns.[14]

In order to determine the effect of Chinese imports on domestic prices and domestic producers I consider the substitutability between domestic honey, imported honey from China, and other imported honey. Clearly, the more substitutable the Chinese honey is for the domestic, the greater effect it will have on the domestic market. Likewise, if there are other close substitutes for Chinese honey, it is unlikely that U.S. producers could raise prices if honey imports were limited, without encouraging increased imports from other countries.

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[8] See Report at Table 13.

[9] See CR at I-58, PR at II-42. Questionnaire responses were received from less than a third of the beekeepers they were sent to, and from about half of the packers. I can only assume that those with the greatest interest in returning the questionnaires were those who feel most adversely affected by the Chinese imports. Therefore, I rely on questionnaire data only when it is all that is available.

[10] Because there are a number of seasonal or part-time workers, hours worked, rather than number of workers, seems to be the best indicator of employment in the honey industry.

[11] See Report at Table 20.

[12] I note that inventories as a percent of sales include government stocks. They have historically been quite high. See CR at I-67, PR at II-51.

[13] I note that the Commission is not required to adopt a threat standard from either Title VII or Section 201. While I considered and discuss the various factors in Section 201, I will concentrate on the causation factors in Section 406 itself that the Commission is required to consider for market disruption. My reading of the statute is that we are required to consider these factors for both present material injury and for threat.

[14] 19 U.S.C. § 2436(e)(2)(A).

Honey is a highly differentiated product, one whose price depends on its color (ranging from white to dark amber) and floral source. About 40 percent of honey is table-use or retail honey, which tends to be the lighter colored and more expensive honey.[15] Chinese honey has a very small presence in this segment of the market, while domestic honey and other imports, particularly those from Canada and Argentina, enjoy a larger share of this market segment. Medium and darker honey tends to be used for industrial purposes to make other products. While all imports have a substantial presence in the industrial market, Chinese imports are concentrated in the dark honey market segment, whereas other imports are concentrated in the medium colored segments.[16]

The majority of packers responding to the Commission's questionnaire reported that quality was the most important factor in their honey purchases.[17] They also reported that honey imported from China was inferior in quality to domestic honey. The problems they reported included the Chinese honey being mixed with other sweeteners, chemical contamination, a sour taste due to fermentation, and a higher moisture content. Given the flavor problems, Chinese honey has been largely limited to the industrial sector.

There are also a number of differences in packaging and sales terms between Chinese and domestic honey. Chinese honey is sold in closed 55 gallon drums, whereas U.S. honey is sold in open-top drums. Packers reported that, for this reason, domestic honey is easier to inspect and test. On the other hand, Chinese honey is sold to packers on a contract basis whereas U.S. honey is sold on a spot basis. Packers reported that long-term contracts ensure availability and price stability.

While it is clear that Chinese honey has made substantial inroads to the domestic industry, any increase in honey imports is limited by these quality problems. According to the parties, imports from Argentina and Canada appear to be much closer substitutes for lighter, high-quality, retail honey than the imports from China, while Mexican honey is a close substitute for dark, lower-quality honey.

Another factor I consider is the availability of close substitutes for honey. If there are close substitute products, domestic producers have limited ability to raise prices without losing a substantial number of sales. There are a number of substantially lower-priced sweeteners that can be substituted for honey, including sugar, corn syrup, and glucose syrup. Industrial users, however, identified flavor, consumer appeal, and the "all natural image" as their main reasons for using honey. While the alternative lower-priced sweeteners are not perfect substitutes for honey, they do limit the extent to which honey producers could raise their prices without losing some sales.[18]

Finally, I consider whether domestic producers could increase their output if imports of Chinese honey were reduced. According to the American Beekeeping Federation, Inc., it would take over a year for domestic producers to expand the number of bee colonies. Yield per colony is not easily increased and is dependent on a number of things, such as weather, that are out of the beekeeper's control.[19] Thus, if Chinese imports were reduced, domestic producers would not be able to increase output in the short run.

Imports from countries such as Argentina, Canada, and Mexico would likely increase if the domestic price of honey increased. These countries have large honey industries and could easily shift sales to the United States in response to any change in the relative prices

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[15] See Report at Tables 29-32.

[16] According to the parties, Mexico is also an important producer of dark honey.

[17] See Economics Memo EC-Q-125 at 33.

[18] See Economics Memo for a full discussion on substitute products and the elasticity of demand for honey. If the price of honey increased, these alternative sweeteners could be blended with honey to reduce costs, while still allowing producers to maintain the "natural" image.

[19] See Economics Memo, EC-Q-124, at 21.

they are receiving.[20] Thus, domestic producers would have difficulty raising prices even if Chinese imports were reduced.

Finally, the statute instructs us to consider disruptive pricing practices and other efforts to unfairly manage trade programs. According to the USDA, decontrol of honey prices in China and elimination of the honey export subsidy led to a sharp drop in Chinese honey prices during the period of investigation.[21] These price declines, combined with increased transportation costs for migrant beekeepers, are expected to reduce Chinese honey production as beekeepers find more lucrative opportunities in other sectors of the growing Chinese economy. As production decreases, the price of Chinese honey would be expected to return to a more stable level. Thus, the fall in honey prices was due to the elimination of government management, not to an effort to control current prices.

The large increase in Chinese honey exports to the United States, Germany, and other countries from 1990 to 1992 coincides with a dramatic decrease in Chinese exports to Japan.[22] The increase in exports to the United States was not proportionally larger than the increase in exports to other countries. In 1990, two-thirds of Chinese exports were destined for the Japanese market compared to less than a third in 1992.[23] This shift away from the Japanese market was caused, as noted above, by a one-time change in Japanese preferences. This obviously caused displacement of honey to other markets. There is no reason to assume it will continue. In addition, USDA estimates that total honey exports as well as total production in China will be lower in 1993 than in 1990.

It is important to note that while other countries, including those in the EU and Japan, have tariffs on honey that are considerably higher than the U.S. tariff, they still imported significant quantities of honey from China during the period of investigation. Therefore, it would be a mistake to consider these markets closed to Chinese honey exports, or to think of the United States as the focal point for Chinese honey. In addition, following the GATT negotiations, the duty rates on honey imports are expected to drop continuously during the 1990s. Thus, if anything, I would expect imports of honey to increase in Western Europe and Japan, relative to the United States.

For all these reasons, I find that Chinese imports are not a significant cause of threat of material injury to the domestic honey industry.[24] Imports from China are not likely to increase because of internal conditions in the Chinese market and quality problems with Chinese honey. Furthermore, Chinese imports alone do not determine domestic output or prices in this fluid world market. There is simply no basis to find imports from China to be a significant cause of threat to the U.S. industry producing honey.

**Remedy**

My determination that there is no threat of material injury to the domestic industry is, in part, based on my conclusion that there will not be a large increase in imports from China. In making this recommendation on remedy I keep several factors in mind.

First, imports of Chinese honey have not been found to be unfairly traded and no Commissioner determined that the domestic industry is materially injured at the present time. This being the case, our remedy should not seek to punish the Chinese industry for shipments

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[20] See Economics Memo, EC-Q-124, at 22.

[21] See "World Honey Situation," United States Department of Agriculture, December 1992.

[22] Exports to Japan decreased due to decreased demand for a honey based beverage.

[23] Japan remains the largest buyer of Chinese honey imports, despite its 30 percent tariff on imported honey.

[24] While honey producers may have to adjust to a reduction or elimination in their support payments, the bulk of those payments were eliminated from 1988 to 1992 and the industry has performed quite well.

to the United States that are in no way connected to material injury to the domestic industry. In my opinion, increasing the tariff on Chinese imports below their 1992 level would not be consistent with the Commission's finding of no present material injury.

In making this recommendation, I also take into account that the price decline in Chinese imports was caused by deregulation not by management of Chinese honey prices. I believe that the market will adjust naturally as Chinese honey producers leave the industry and prices increase. Any act that involves large tariff increases on honey may bring the Chinese government to aid its honey farmers, by increasing the use of subsidies. This would seem to be at odds with our trade policy goals.

Finally, to the extent that any threat of material injury stems from the removal of U.S. price supports, it would be dangerous to place high tariffs on fairly traded imports. Countries around the globe have agreed to dismantle agricultural protection through domestic price support programs. If we use domestic trade laws to restrict imports and thus maintain the status quo for farmers in the face of declining subsidization, tremendous costs will be placed on consumers and on the world economy.

My specific remedy recommendation is a tariff-rate quota with no additional duty imposed on any imports from China below their 1992 level, and a 10 percent duty on any imports above that level imposed for, at most, three years. This remedy would reduce imports from China, while not imposing unnecessary costs on American consumers. Any higher tariff, particularly a tariff as high as 50 percent (the effective rate of duty suggested by the Commission) would effectively limit Chinese imports to a specific volume lower than the current volume. In my view, that would obviously be unjustifiable, given that the Commission found no present material injury.

# PART II

# INFORMATION OBTAINED IN THE INVESTIGATION

## INTRODUCTION

On October 6, 1993, the U.S. International Trade Commission (Commission) received a letter from the United States Trade Representative (USTR) requesting an investigation under section 406(a) of the Trade Act of 1974 to

> "determine whether market disruption exists with respect to domestically produced honey as a result of imports from China of natural honey, artificial honey containing natural honey, and preparations of natural honey."[1]

Accordingly, effective October 6, 1993, the Commission instituted investigation No. TA-406-13 under the provisions of section 406(a)(1) of the Act, which provides that "upon request of ... the United States Trade Representative ... the International Trade Commission shall promptly make an investigation to determine, with respect to imports of an article which is the product of a Communist country, whether market disruption exists with respect to an article produced by a domestic industry." As defined in section 406(e)(2)(A) of the Act, market disruption exists within a domestic industry whenever "imports of an article, like or directly competitive with an article produced by such domestic industry, are increasing rapidly, either absolutely or relatively, so as to be a significant cause of material injury, or threat thereof, to such domestic industry." The Commission reported its determination, findings and recommendations in this investigation to the President on January 7, 1994.

Notice of the institution of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of October 20, 1993 (58 F.R. 54169).[2] The hearing on injury and relief was held in Washington, DC, on December 2, 1993.[3] The Commission voted on the injury phase of this investigation on December 21, 1993, and voted on the question of remedy on January 4, 1994.

### Previous and Related Investigations

The Commission conducted an investigation of honey in 1976 under section 201 of the Trade Act of 1974 (USITC publication No. 781). At that time, the Commission determined[4] that honey was being imported into the United States in such increased quantities as to be a substantial cause of the threat of serious injury to the domestic industry producing articles like or directly competitive with the imported article. The Commission found that a tariff-rate quota system was necessary to prevent the threatened injury.[5] On August 28, 1976, President Gerald R. Ford advised Congress that

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[1] Such imports are provided for in heading 0409 and subheadings 1702.90 and 2106.90 of the Harmonized Tariff Schedule of the United States (HTS).

[2] Copies of the Commission's notice and the USTR's letter of request are presented in app. A.

[3] A list of witnesses who appeared at the hearing is presented in app. B.

[4] Chairman Leonard, Vice Chairman Minchew, and Commissioner Moore voted in the affirmative; Commissioners Bedell and Parker dissented; and Commissioner Ablondi did not participate. U.S. International Trade Commission, Honey, Report to the President on Inv. No. TA-201-14, publication 781, June 1976, p. 3.

[5] The Commission recommended that whenever the aggregate quantity of imports of honey exceeded a tariff-rate quota of 30 million pounds, imports in the remainder of a given calendar year would be subject to the following rates of duty:

| | |
|---|---|
| For calendar years 1976, 1977, and 1978 . . . . . | 1 cent per lb. + 30% ad valorem |
| For calendar year 1979 . . . . . | 1 cent per lb. + 20% ad valorem |
| For calendar year 1980 . . . . . | 1 cent per lb. + 10% ad valorem |

"import relief for the U.S. industry engaged in the commercial production and extraction of honey is not in the national economic interest."[6]

In 1992 the Commission published one of its Industry and Trade Summary series of informational commodity reports that included information on the U.S. honey industry.[7] The report included an analysis of the basic factors affecting trends in consumption, production, and trade of honey.

## THE PRODUCT

### Description of the Product

The imports of honey that are the subject of this investigation are defined as follows:

Natural honey.--Honey produced by bees, centrifuged or in the comb or containing comb chunks, provided that neither sugar nor any other substance has been added. Such honey may be designated by floral source, origin, or color.

Artificial honey mixed with natural honey.--Mixtures of natural and artificial honey. The term "artificial honey" refers to mixtures based on sucrose, glucose, or invert sugar, generally flavored or colored and prepared to imitate natural honey.

Preparations of natural honey.--Food preparations principally consisting of natural honey, including natural honey enriched with bees' royal jelly.

Honey is a sweet, viscous fluid derived by bees from the nectar of flowers. It is believed to be the oldest sweetener used by man, with the first written passage concerning honey dated to about 2,000 BC and prehistoric cave paintings in Spain depicting its collection 15,000 years ago.[8] Color, flavor, and chemical and physical composition of honey depend upon the flora from which the nectar for the honey was taken. The principal components of honey are fructose, glucose, and water. Honey is commonly regarded as a "natural" health food because the simple component sugars, fructose and glucose, can be assimilated without further breakdown by the digestive system, providing a source of quick energy.

Honey may be typed according to several different factors, including its source, its color, the season in which it was harvested, its physical state, or the means of preparation. Honey may be monofloral, meaning it has one predominant botanical source, or it may be polyfloral, having several botanical sources, with no single floral source predominant. The floral source of the honey can impart its distinctive flavor; for instance, alfalfa, buckwheat, clover, mesquite, orange blossom, and sage. Specialty monofloral honeys, such as rosemary or acacia, may sell at premiums. Polyfloral honeys may be described by the time of year during which they were harvested, such as "spring honey." Floral sources can also impart a distinctive color, such as light-colored clover honey, yellow-orange sunflower honey, and dark-colored buckwheat honey. Honey is valued according to both floral source and color, with the lighter colors and milder flavors of honey generally being more valuable in most countries, including the United States. Different types of honeys may be blended to obtain the desired flavor and color as well as to provide a uniform product throughout a given market.

Nearly all commercial honey is extracted from the comb, although small quantities are consumed in the form of comb honey or chunk honey. Specialty products known as "spun" or "creamed" honey, which consist of pure honey in which dextrose crystallization has been encouraged, also are marketed. Most honey will granulate over time as the glucose (dextrose) in the honey

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[6] U.S. Honey Industry, Communication from the President of the United States to Congress, Aug. 28, 1976, p. 1 (41 FR 36787).

[7] USITC, Industry & Trade Summary, Natural Sweeteners, publication 2545 (AG-8), Nov. 1992.

[8] Sugar Chemistry, The Avi Publishing Company, Inc., Westport, CT, 1975, p. 150, and The Hive and the Honey Bee, Dadant & Sons, Inc., Hamilton, IL, 1992, p. 869.

crystallizes out of the solution. Honey also will darken and deteriorate in flavor if held for long periods of time at above-average room temperatures. The means of preparation--extraction, pressing, or settling--and processing can have an effect on the rate of deterioration of honey.[9]

**Country-of-Origin Comparisons**

The Commission's packer's questionnaire requested comments regarding the differences and similarities in the physical/chemical characteristics between the U.S.-produced honey and imports of honey from China. The following comments were reported to the Commission by packers of both U.S.-produced and Chinese-produced honey:

| Firm | Comments |
|---|---|
| ***..... | "We find Chinese honey to [be] clean but high in moisture & slightly fermented in flavor. It can bee [sic] successfully blended with domestic honey." |
| ***..... | "Both U.S. & Chinese honey have a large diversity in both physical & chemical characteristics. Therefore, both are interchangeable in almost all end uses except for a small amount of specialty honey (Orange Blossom, Tupelo) which are gathered from specific regions of the U.S. Note, however, that most imports from China are industrial grade honey which do not compete with lighter domestically produced honey." |
| ***..... | "Chinese has higher fructose content - contributes to crystallization; requires extra inventory, special handling and blending, longer melt-down time; dirty, dusty drums." |
| ***..... | "Honey tends to vary mostly by floral source; we blend our honey with domestic, Chinese, Australian, Canadian, and Argentine to develop a consistent product." |
| ***..... | "U.S. honey is generally superior in taste and lower in moisture. Chinese honey has limited uses." |
| ***..... | "The samples of Chinese honey checked for CDF (chlordimeform) all showed nominal amounts. Fermented flavor even though moisture levels were normal. Random granulation in some lots caused filtering problems. High percentage of lots appeared to be economically adulterated." |
| ***..... | "Flavor of US product superior to China product." |
| ***..... | "U.S. honey is a milder aroma/taste than Chinese honey." |
| ***..... | "Consumer acceptance. Moisture is higher in China honey. Flavor has a different twang or after taste. Honey from China has less flavor." |
| ***..... | "Completely interchangeable. Natural organoleptic [relating to or perceived by a sensory organ] variation accounts for likes & dislikes." |

[9] More specific information on the preparation and processing of honey is contained in the section of this report entitled "Production Processes."

| Firm | Comments |
|---|---|
| ***..... | "There should not be any [differences], honeybees produce honey in the same manner throughout the world, but Chinese honey does differ due to the processing and handling of the product." |
| ***..... | "U.S. honey quality is superior to Chinese, but price of U.S. is higher." |
| ***..... | "U.S. honey produced in my area does not meet the specifications of my customers in color or moisture. China produced honey does." |
| ***..... | "U.S. honey and Chinese are not fully interchangeable. U.S. white alfalfa/clover honey cannot be replaced by any country's honey because of the unique flavor. White honey is used mostly for retail containers. Darker and stronger flavored honeys can be interchanged." |
| ***..... | "We now buy Chinese honey almost exclusively for the bakery/industrial market because that market can accept Chinese honey's strong flavor, and there is not enough U.S.-produced honey for that growing market." |
| ***..... | "As an industrial [user] of honey, China honey is more uniform in color, taste--than domestic supply--in a more consistent manner. Grading system [for domestic honey] in taste and flavor is not consistent. China price [is] more favorable. Domestic honey prices change without notice." |
| ***..... | "No real difference if you can blend properly. Obviously there are off flavor domestic and foreign honies that require different blending techniques." |
| ***..... | "Honey purchased from China is more consistant in quality. Not as good as the best domestic but better than the lower quality domestic." |
| ***..... | "Flavor is the only major difference. End uses are interchangeable." |

U.S. producers and producer/packers (beekeepers) did not provide a response to the question of differences/similarities in honey based on country-of-origin because they do not generally process honey imported from China. However, a number of beekeepers did argue that the honeys are interchangeable based on the fact that "the packers are asking us to match the Chinese prices or will not make a sale."[10]

## Production Processes

The production of honey, which is the bee's main sustenance, begins with the bees' gathering of nectar from various plants.[11] Bees may forage for several miles from their hive to find nectar. During these foragings, bees typically visit only one variety of plant. As the bee moves from plant to plant, small amounts of pollen cling to the bee and are transferred from plant to plant, making the bee an excellent crop pollinator. Upon returning to the hive, the foraging bee regurgitates the nectar into the mouth of a specialized "house" bee. The house bee adds enzymes and places the unripe honey into the hexagonal cells of the comb. The unripe honey is often spread among several cells to

[10] Questionnaire response of ***.

[11] Nectar is a solution composed of sugar and water with additional constituents such as proteins and amino acids.

help in moisture evaporation, which the house bees promote by fanning their wings. Cells are then capped with a thin layer of wax, and the honey is allowed to ripen.

There are four traditional species of bees worldwide: 1) the giant honey bee (*Apis dorsata*), (2) the little honey bee (*Apis florea*), (3) the eastern honey bee (*Apis cerana*), and (4) the western honey bee (*Apis mellifera*). In the United States, *A. mellifera* was the bee introduced by European settlers, and is both the feral bee[12] and the bee used in commercial honey production. Approximately one-half of the commercial honey-producing colonies in China are the native *A. cerana*, and the other half are the western bee, *A. mellifera*. *A. mellifera* was introduced into China in the early 20th century, along with the techniques of movable-frame beekeeping, and is generally the bee used in migratory beekeeping.[13]

**U.S. Beekeeper Operations**

Beekeepers often move their hives to follow the nectar and bloom flow, as well as to areas in need of the bees' pollination services or areas rich in certain flora to promote production of a distinct type of honey. In the United States, approximately half of the estimated 2,000 commercial beekeepers are migratory. The migration is generally from north in the summer to south in the winter, as well as to California during almond season and several other States for pollination of crops such as melons.[14] Beekeepers in the United States keep their bees in constructed wooden hives that are relatively easy to transport (figure 1).

Bees naturally construct a core nest containing the brood and then have an insulating layer of pollen and honey above the nest. With a hive structure similar to the one shown in figure 1, the bees live in either one or two hive bodies and store the honey on the frames contained in the supers.[15] The excluder restrains the queen to the brood nest and prevents her from laying brood in the supers containing honey.[16] The rectangular frames, usually constructed of wood, begin the season holding a foundation made of wax, upon which the bees construct the hexagonal-shaped cells of wax in which they store the honey. The standard super contains 10 frames in the United States and two 10-frame supers are usually used in the production of bulk honey.[17]

There are many techniques for "robbing" the bees of their honey. Using the wooden hive structure discussed above, the process begins with driving the bees from the supers by means of brushing the bees off the supers, or by using smoke, chemicals, or low-pressure, high-volume forced

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[12] "Feral" bees are bees not maintained by beekeepers; i.e., they are wild bees. The feral bee population of the United States has undergone significant changes in recent years. The introduction of varroa and tracheal mites into the U.S. bee population during the 1980s has significantly reduced the feral bee population, although the damage inflicted by these pests can be controlled by beekeepers in maintained hives. The reduction of the feral bee population is estimated to be as high as 80 percent in some areas of the country, increasing the need to purchase pollination services from beekeepers.

The feral bee population in the United States is also threatened by the so-called "Africanized" bee, which first made an appearance in the United States in Texas in October 1990. Since that time, Africanized swarms have been found further in Texas, Arizona, and California. Africanized bees have been spreading their range since 1957, when some African queens (*Apis mellifera scutellata*) escaped from a breeding experiment in Brazil and mated with the more docile European bees already introduced to the Americas. The implication of the invasion of the United States by the Africanized bee is that breeding between the Africanized bees and the native bees generally produces Africanized swarms. Africanized swarms of bees have received a great deal of publicity because of their highly defensive behavior coupled with some reports that these bees produce less honey than the native bees.

[13] "China's Beekeeping and the Journal of the Bee," American Bee Journal, vol. 131, No. 7, July 1991.

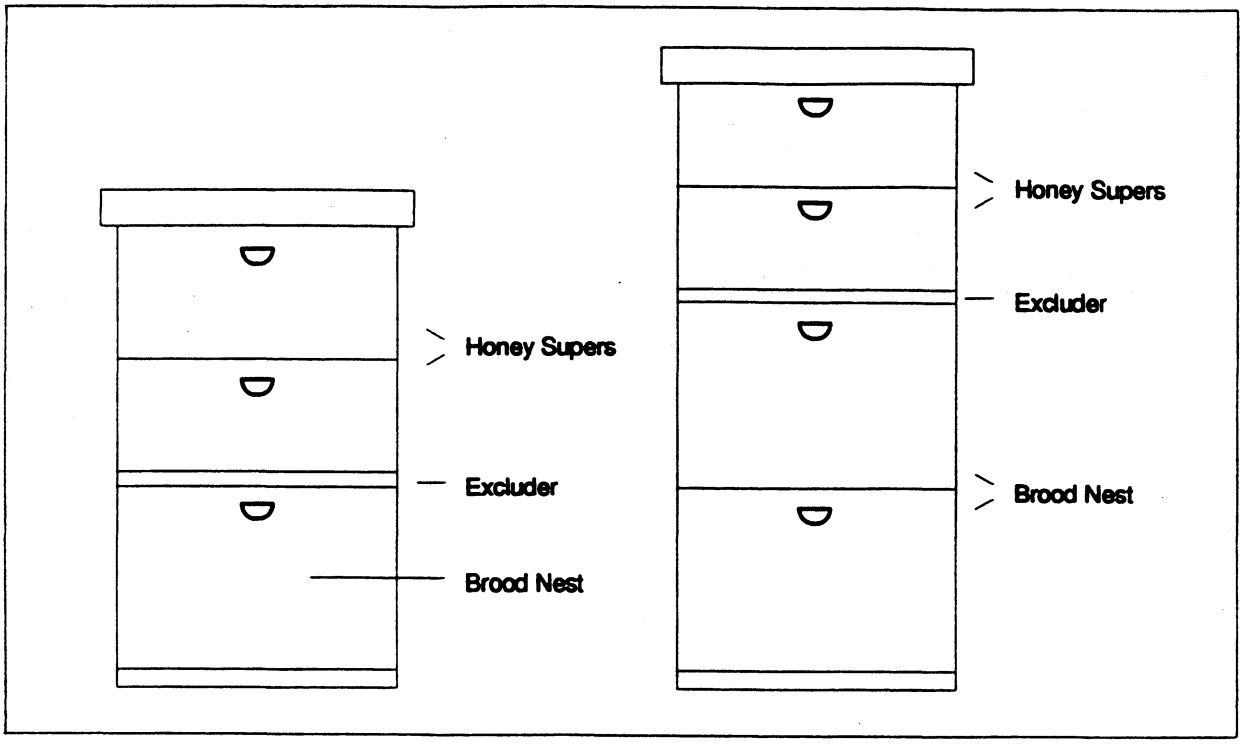
[14] "America's Beekeepers: Hives for Hire," National Geographic, May 1993, p. 76.

[15] In the United States, northern beekeepers traditionally use two hive bodies to allow for large honey stores for wintering. Southern beekeepers usually use just one hive body. "Strictly for the Hobbyist," American Bee Journal, Volume 132, No. 7, July 1992.

[16] Not all beekeepers use an excluder because some believe that an excluder discourages bees from storing honey in the super.

[17] The Hive and the Honeybee, op. cit., p. 706.

Figure 1
Bee hive structure




*Note*.--A brood nest can be made up of one or two hive bodies, depending largely on location and personal preference. This shows the placement of a queen excluder with one hive body (left) or two hive bodies (right).

Source: "Strictly for the Hobbyist," American Bee Journal, vol. 132, No. 7, July 1992.

air to drive the bees from the supers down into the brood nest. Supers are removed when the cells on the frames are fully capped. Removal of frames containing cells that are not fully capped can result in a honey that is not fully ripened and high in moisture, conditions which can cause the honey to ferment.[18]

No matter the size of the operation, most extraction of honey uses the same basic equipment, although configuration, complexity, and capacity of the equipment depend upon the needs and the

[18] Fermentation of honey is caused by the growth of yeasts that are naturally found in honey. Unlike many yeasts, these yeasts can grow in a relatively high sugar concentration. However, there are limitations to the sugar concentration in which these yeasts can grow, and thus the water content of honey is one of the factors in whether or not fermentation occurs. Industry sources indicate that the Chinese remove honey daily from the hive, and subsequently have a high fermentation rate caused by the unripe, high-moisture honey. The Hive and the Honey Bee indicates that fermentation is often a problem in areas of high humidity, even if the cells have been capped, because the bees are unable to ripen the honey fully. This fermentation problem can be alleviated by removing the supers to a drying room and circulating warm, dry air while dehumidifying. The Hive and the Honey Bee, Dadant & Sons, Hamilton, IL, 1992; p. 716.

space available to the beekeeper. Figure 2 illustrates a general honey processing pathway. Some commercial operations and hobbyists first use a drying room (not shown in the illustration), although capped honey in general has a low enough moisture content (around 17-18 percent) to prevent fermentation. A drying room may consist simply of heating a room to 85-90 degrees and dehumidifying to 0-20 percent relative moisture for a small operation, or may comprise large drying rooms with special ventilation systems to circulate the warm, dry air around the stored supers for commercial operations.

Combs are uncapped using either hot knives or power uncappers. The most common uncapper uses mounted, heated, serrated knives, which saw through the honey cappings as the frames pass through. A relatively newer design uses rotating steel flails, which lightly strike and break the cap as the frames pass. Commercial operations also use a rotary knife uncapper that works in a manner similar to the "flailing" uncapper. Honey cappings contain significant quantities of honey, and comb uncapping occurs over plastic or stainless steel containers to catch the honeyed caps. The caps and honey are then separated by either a wax spinner, which uses a centrifuge to sling honey from cappings, or a cap compressing system, which mechanically squeezes the honey from the cappings. The wax from the caps is rendered for the production of beeswax.

Extractors are used in the actual separation of the honey from the uncapped cells on the frame. Currently in the United States, extractors range in size from 2-frame capacity to 240-frame capacity.[19] Extractors, like the wax spinners, use centrifuges to fling the honey from the cells, and have either a horizontal or vertical shaft. As honey flows from the extractor, it contains particles of wax, bees, or other hive matter. The honey may be run through a centrifuge to separate the honey from the foreign particles or may be strained through a simple netting (usually nylon) or a more complicated high pressure filter. The processing of honey to this point is usually done by the beekeeper. The honey at this stage can be bottled and sold to consumers as "unprocessed" or "raw" honey, further processed by a beekeeper who possess a facility similar to the one pictured in figure 2, or sold to a packer, who picks up in the production pathway pictured in figure 2 after extraction.

The beekeeper may also produce other honey products, such as comb honey. Comb honey, which consists of sections of comb containing honey that has not been uncapped, has a production process slightly different than regular extracted honey. Bees are encouraged to produce comb on full sheets of foundations--as for the production of extracted honey--or on split or round sections of foundation. These other configurations of foundation in the supers are used to produce a more attractive comb section. When the supers are removed, comb honey is treated for the prevention of damage by wax moths; usually this treatment consists of freezing the comb sections and the honey contained in them. After defrosting, the comb honey is then ready for sale. Pieces of comb often are cut from frames and put in containers with extracted honey. This product is referred to as "chunk honey."

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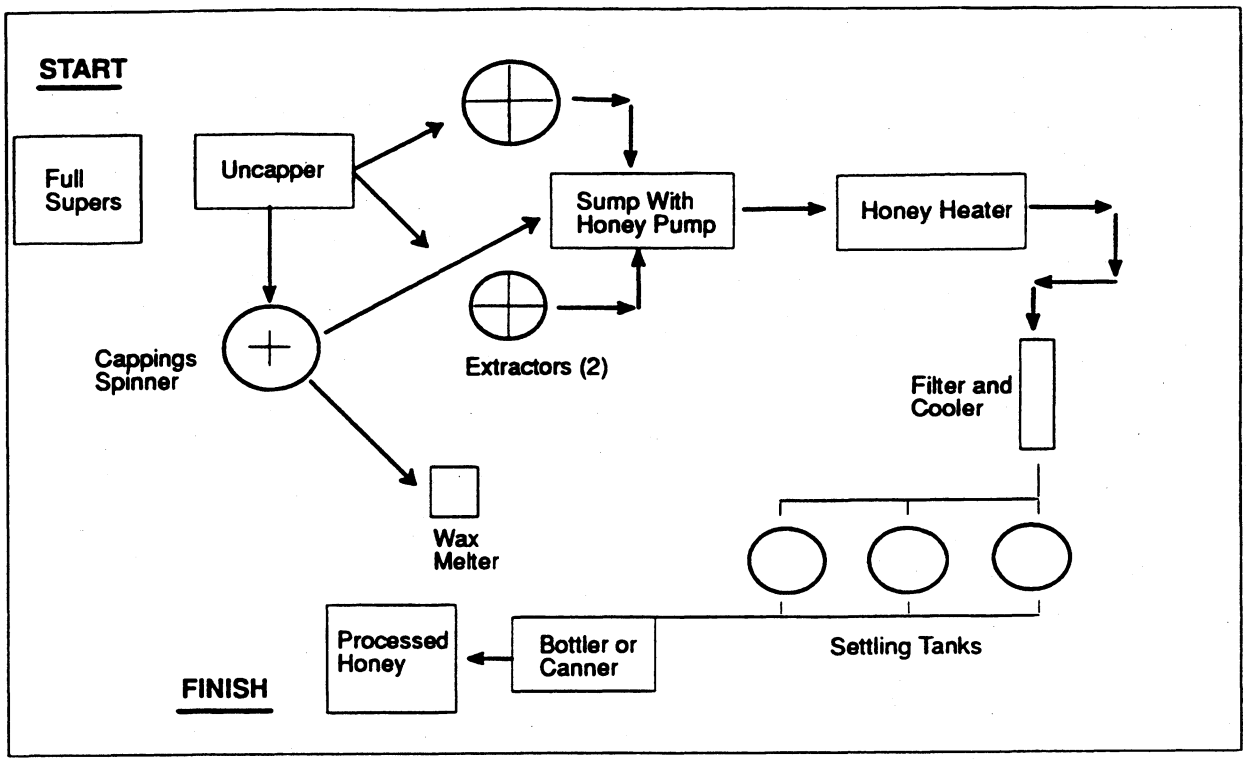
[19] The Hive and the Honeybee, op. cit., p. 671.

Figure 2
Honey processing pathway




Source: The Hive and the Honeybee, Dadant & Sons, Hamilton, IL, 1992, p. 680.

**U.S. Packer Operations**

Upon receipt of extracted honey, the packer (including the beekeepers with packing facilities) may blend different types of honey to obtain a uniform product.[20] The honeys, usually in 55-gallon drums from the beekeepers, are labeled according to color and floral source of the honey, making selection for blending or production of monofloral honey (e.g., "orange") possible.[21]

At this point, heat may or may not be used to pack a finished product. Heating honey aids in the flow of honey through the processing facility and can retard granulation and spoilage, largely through the destruction of yeasts naturally present in honey. Honey that has been heated is acceptable to most users in the United States, although in other areas of the world, honey that has

[20] Honey may also be stored for years under proper storage conditions; i.e., in a dry place at approximately 70° F, or alternatively at freezing temperatures. According to the USDA, honey stored for years at freezer temperatures, 0° to -10° F, cannot be distinguished from fresh newly extracted honey in color, flavor, or aroma (Honey: Background for 1990 Farm Legislation, Economic Research Service, USDA, Sept. 1989, p. 12).

[21] A 55-gallon steel drum with an FDA-approved food liner and an open head is the common container for U.S.-produced bulk raw honey. Packers responding to the Commission's questionnaires report that imports of honey from China are packed in 55-gallon closed-head steel drums.

been heated is perceived to have lost some of its health and nutritional benefits. Because both diastase, an enzyme which destroys starch, and hydroxymethylfurfural (HMF), a by-product of the decomposition of sugars in acid, are affected by heat, countries preferring unheated honey often have required levels of each for imports. "Flash heating," whereby the honey is rapidly heated to 120 degrees or above and then quickly cooled, can produce honey with acceptable HMF and diastase levels for export to many countries, while maintaining its favorable processing characteristics.

Heated or unheated, honey next flows through filtering mechanisms (filtering paper sheets in commercial processing plants), usually under high pressure. Some packing facilities also add diatomaceous earth to the honey before filtering to aid in filtration.[22] The honey next moves to a "settling tank" in a warm area for several hours or even days, with any remaining foreign material floating to the top, where it can be skimmed.[23] Honey then can be poured directly into containers and sold to consumers or industrial users.

Creamed honey is another honey product that the packer may also process. This is honey in which the natural granulation has been encouraged and controlled for a smooth consistency similar to that of butter. Although nearly all honey can be creamed, those honeys higher in glucose generally granulate the fastest. To start the production of creamed honey, extracted honey is heated to a maximum of 150 degrees to destroy the natural yeasts that can cause fermentation and to dissolve large glucose crystals. The heated honey is strained to remove any extraneous substances such as wax, pollen, or bee debris. The honey is then cooled and "starter" seed, consisting of creamed honey that has been finely ground to create extremely fine glucose crystals, is added. The starter is completely blended into the honey to be creamed in order to assure uniform crystallization. After blending, the mixture of seed and honey is allowed to set for a period of time during which air bubbles rise to the surface and are skimmed. The product is then transferred to containers and sets up within 4 to 6 days.[24]

**Honey-Producing Operations in China**

As previously mentioned, approximately half the commercial honey-producing colonies in China are native *A. cerana*, and the other half are the western bee, *A. mellifera*. In China, *A. mellifera* is generally the bee used in migratory beekeeping, and several million of such colonies are transported yearly to increase honey flow.[25] The *A. cerana* colonies usually are not used in migratory beekeeping, and approximately 40 percent are still kept in wooden baskets or bamboo cages.[26] In some areas of China, beekeepers maintaining colonies of native bees are reported to still use the traditional method of destroying the hive to harvest the honey.[27] Industry sources report that, with the exception of litchi and canola blossoms, major nectar sources in China are similar to those found in the United States.[28]

Differences in the honey production process between the United States and China have been reported at the extraction stage. As previously mentioned, the beekeeper in the United States employs a hive structure that consists of supers for honey storage, which allows the honey to dry and ripen. In China, beekeepers reportedly do not use supers, and extract honey from the comb on a

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[22] Diatomaceous earth is a natural filtering agent derived from the skeletons of ancient algae. The particles of diatomaceous earth attract the particles of dirt, bee parts, and other matter in the honey, and are not passed through the filters.

[23] Some operations reverse the process, and place honey in settling tanks before filtration.

[24] The Hive and the Honey Bee, op. cit., p. 702.

[25] "China's Beekeeping and the Journal of the Bee," American Bee Journal, vol. 131, No. 7, July 1991.

[26] *Ibid.*

[27] "Introduction of Chinese Apiculture History and Conditions," by Wang Suzhi, Senior Agronomist, Department of Animal Husbandry and Health, Ministry of Agriculture, China, 1990.

[28] "The China Experience - A Unique Beekeeping Event," American Bee Journal, June 1992, p. 388.

daily basis, so that the honey is unripe and high in moisture content, which encourages fermentation. Such extracted honey is collected and taken to processing plants for heating and drying, but while such processing may stem fermentation, it cannot reverse the process and, as a result, honey from China may have the bitter taste associated with fermentation.[29]

**Country-of-Origin Comparisons**

The Commission's packer's questionnaire requested comments regarding the differences and similarities between the processing of U.S.-produced honey and that of imports of honey from China. The following comments were reported to the Commission by packers of both U.S.-produced and Chinese-produced honey:

| Firm | Comments |
|---|---|
| ***..... | "No difference of any consequence." |
| ***..... | "All aspects of processing and packaging of U.S. and Chinese honey are virtually identical." |
| ***..... | "Once blended, the processing, machinery and equipment requirements are similar. Extra labor is needed to clean incoming drums." |
| ***..... | "No difference in processing technique (generally processed simultaneously)." |
| ***..... | "Chinese honey is packed in closed top drums, U.S. in open top (usually). Closed top drums must be handled differently. No other difference." |
| ***..... | "Chinese honey is placed in tight head drums which causes concern over questionable liners and accurate sampling. Fermented high moisture flavor leads to conclusion that at some point the Chinese honey was dried before being sold." |
| ***..... | "Processing is the same." |
| ***..... | "The honey would process much the same, the higher moisture content may cause a drying process to be used on the honey before it could be packed." |
| ***..... | "No difference in production. Chinese barrels are inferior as they must be cut open." |
| ***..... | "Chinese honey is equal or superior in every way. To wit: cleaner, easier to filter, more consistent color, more consistent flavor, accurately graded, quality containers." |

[29] Interview with ***; field trip notes from staff visits to ***.

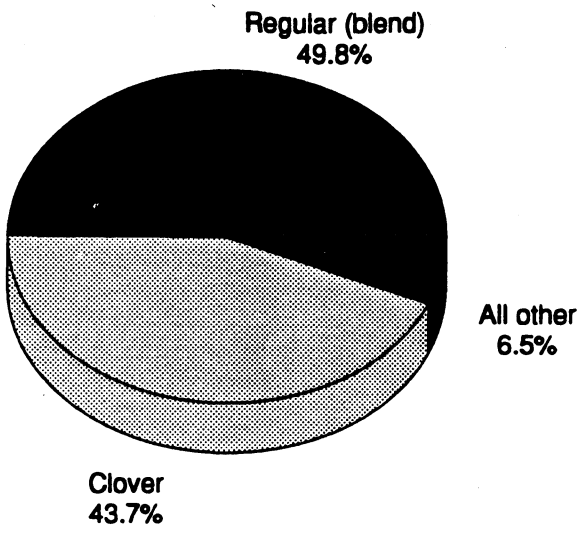
| Firm | Comments |
|---|---|
| ***..... | "None." |
| ***..... | "Greatest difference is the Chinese removal of the honey from the hive while it is still green (high moisture). Due to the elevated level of moisture the honey starts to ferment, causing off flavors. The moisture is reduced by a vacuum pan. U.S. beekeepers allow the honey to ripen in the hive." |
| ***..... | "No difference." |
| ***..... | "U.S. produced honey has more trash in it then Chinese honey. Therefore taking more filter bags to process resulting in more time and labor to process U.S. honey." |
| ***..... | "Fully interchangeable except it is more costly to heat Chinese honey because all Chinese honey is shipped in closed top drums. U.S. honey is shipped in open top drums. Both crystallize, but Chinese drums sometimes must have tops removed." |
| ***..... | "No difference." |
| ***..... | "None." |
| ***..... | "China honey is pre-processed resulting in less cost to process--cleaner, more uniform. Domestic is not uniform nor whole clean resulting in a higher cost per output unit." |
| ***..... | "No differences in processing. Chinese honey comes in an enclosed drum which is more difficult to deal with when dumping honey out." |
| ***..... | "Processing is the same for both. Due to length of time from extraction, Chinese honey takes longer at times to melt." |

## Uses

Table use (as a spread for bakery products, a sweetener for tea, and as an ingredient in home baking and meat/poultry preparation) accounts for approximately 40 percent of honey consumption in the United States.[30] Honey for table use is generally liquid and of light color (extra light amber or lighter) and of mild flavor, usually designated as "clover." Figure 3 illustrates the U.S. share of honey consumption by flavor. Often honey sold for table use is blended to obtain a uniformity of

[30] See "Channels of Distribution" section of this report.

## Figure 3
## Shares of honey consumption by flavor, 1992




Source: The National Honey Board.

taste and color, although there are consumers who prefer a monofloral honey.[31] Comb, chunk, and creamed honey are also available for table use. Both domestic and imported honey are used for table use, as well as blends of domestic and imported honey. Industry sources indicate that Chinese honey often has to be blended with other honey for U.S. table use. The reported need for blending honey from China stems from the previously discussed Chinese production process that leads to fermentation of the honey, resulting in a flavor that American consumers do not generally find palatable.

Approximately 15 percent of the honey consumed in the United States is used in the food service industry, which is comprised of commercial operations such as restaurants and non-commercial operations such as schools and other institutional operations.[32] Table 1 outlines the percentage of honey used at various mealtimes and in various preparations, as well as the pack sizes used by food service commercial and non-commercial operators. As with table use honey, food service honey can be composed of domestic, imported, or a blend of domestic and imported.

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[31] Blends may be designated as one floral source, such as "clover," provided that over 50 percent of the honey in the blend is from that floral source.

[32] The Hive and the Honeybee, op. cit., p. 797.

Table 1
Honey: Selected summaries of usage by honey users

| | (Percent) | |
|---|---|---|
| | Commercial operators (restaurants)-- | Institutional operators (school, business & industry, hospital)-- |
| Pack size usage: | | |
| Portion pack | 40.1 | 37.0 |
| Bulk size | 27.9 | 44.9 |
| Glass jars | 29.6 | 21.7 |
| Squeeze bottles | 7.2 | 4.3 |
| Don't know | 2.6 | 7.6 |
| Meal occasions honey is offered: | | |
| Breakfast | 59.4 | 77.1 |
| Lunch | 55.0 | 58.5 |
| Dinner | 55.5 | 35.6 |
| Non-specific | 12.2 | 10.2 |

| | (Percent) | | |
|---|---|---|---|
| Type of use of honey: | | | |
| Ingredient | 53 | Topping | 43 |
| Dipping sauce | 46 | Sauce for entree | 7 |
| Sweetener | 45 | | |

| | (Percent) | | |
|---|---|---|---|
| Use in food preparation: | | | |
| Baking | 53 | Marinating | 25 |
| Meat glaze | 36 | Beverages | 20 |
| Salad dressing | 25 | Other | 8 |
| Desserts | 25 | Don't use | 18 |

| | (Percent) | | |
|---|---|---|---|
| Where honey is featured: | | | |
| Not at all | 78 | Menu board | 4 |
| Menu | 15 | Both | 3 |

Note: Totals add up to more than 100 percent because respondents could choose more than one category.

Source: The Hive and the Honeybee, Dadant & Sons, Hamilton, IL, 1992; from a study by the Hale Group, Danvers, MA, 1987.

The United States is one of the world's largest markets for industrial honey, accounting for approximately 45 percent of total consumption. The major industrial honey users are in the food industry, although the tobacco, pharmaceutical, and cosmetic industries use some honey. Bakery, health food, and cereal manufacturers, respectively, are the greatest users of industrial honey in the food industry, as illustrated by figure 4. The National Honey Board's 1993 Retail Baking Marketing Plan indicates that of the approximately 26,000 independent retail bakeries in the United States, 80 percent use honey. The products in which honey was most often used were:

| Product | Share containing honey *Percent* |
|---|---|
| Bread . . . . | 53 |
| Cookies . . . | 52 |
| Muffins . . . | 42 |
| Cakes . . . . | 15 |
| Brownies . . | 14 |

The main reason indicated by the food industry for the inclusion of honey in products is for flavor.[33] Other reasons for the use of honey in the food industry include consumer appeal, sweetness, moisture retention, and color (figure 5).

Microbiological standards, followed by grade, color, flavor, and honey type are, respectively, the important factors specified by industrial users when purchasing honey.[34] Extra-light to light amber is the color most used by food industry manufacturers.[35] Imported honey is often used for industrial purposes. Chinese honey imported into the United States in recent years has reflected the U.S. market preference for light and mild honey. Differences (other than those stemming from the floral sources) between U.S. honey and the majority of honey imported from China appear to stem from differences in the respective production processes.

## Substitute Products

Aside from flavor, honey is also used for its sweetening, hygroscopic abilities, and immunities to some types of spoilage.[36] These properties stem from the fact that honey is a concentrated solution of several sugars.[37] Many of the sugars in honey are not found in nectar, but form during the ripening in the wax cells. The sweetness of honey comes from dextrose (glucose) and levulose (fructose), which account for 85-95 percent of the total sugars in honey. Honey usually ranges from 31 to 44 percent fructose, 23 to 41 percent glucose, and around 17 percent water;

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[33] "U.S. Food Industry is 'Sweet' on Honey," by Veronique Lagrange, David Ropa, and Cathy Mupoper, American Bee Journal, Volume 131, No. 7, July 1991, and "Industrial Use and Attitudes Study," National Honey Board, 1992.

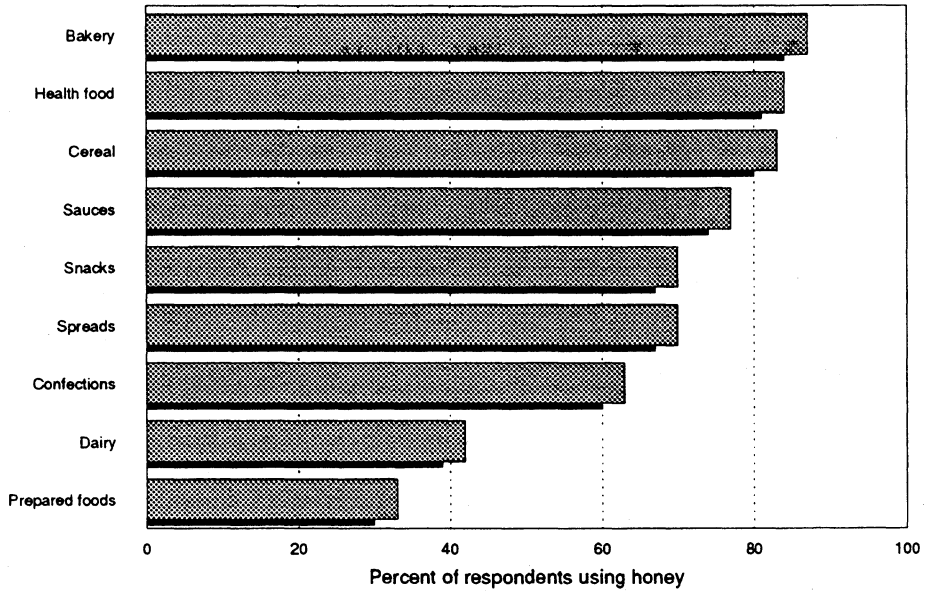
[34] A study conducted by the National Honey Board in 1990 found the order of importance of specification criteria to be different than the 1992 study. In the earlier survey, 75 percent of all manufacturers cited color as the most often used specification, followed by flavor, U.S. grade, honey type, and microbiological standards. The National Honey Board's 1992 study indicated that the increased interest in microbiological standards most likely stemmed from highly publicized incidences of contaminated food outbreaks within the past several years.

[35] "U.S. Food Industry is 'Sweet' on Honey", American Bee Journal, July 1991 and "Industrial Use and Attitudes Study," National Honey Board, 1992.

[36] Hygroscopicity is the ability of a material to remove moisture from the air.

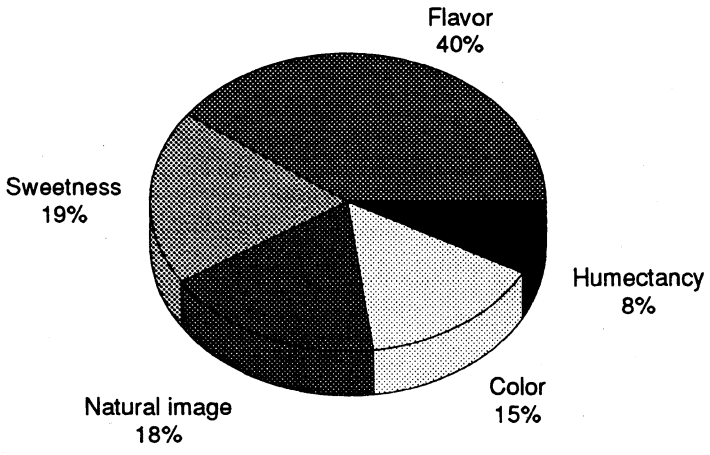
[37] Symposium: Sweeteners, Ed. George E. Inglett, The Avi Publishing Company, Inc., 1974, p. 118.

Figure 4
Honey usage frequency, by product categories




Source: American Bee Journal.

Figure 5
Important factors when purchasing honey




Source: The National Honey Board.

generally, the higher the fructose content, the sweeter and more valuable the honey (table 2 and figure 6).[38] Fructose and glucose are monosaccharides with the chemical formula $C_6H_{12}O_6$.[39] Fructose is sweeter than sucrose ("sugar"), a disaccharide having the chemical formula $C_6H_{22}O_{11}$, but glucose is less sweet than sucrose. The fact that honey is usually found to be as sweet or sweeter than sucrose in relative sweetness tests appears to be a function of synergism as it exists in the mixture of the lower molecular weighted sugars occurring in honey.[40] Honey also contains small quantities of several other saccharide components, such as maltose, and nonsaccharide components, such as enzymes, protein, and amino acids.

Tables 3 and 4 show U.S. consumption of honey compared with other caloric sweeteners. Syrups, jams, jellies, and preserves compete with honey for its main table usage as a spread for bread products. Although some consumers purchase honey for table use for its perceived nutritional and health benefits, for others the main factor in deciding among these products often is price. The industrial market for honey is also sensitive to price. Sugar, high fructose corn syrup, invert sugar, fruit juice, and non-caloric sweeteners are the main alternative sweeteners for industrial use.[41,42] When flavor is not important, high-fructose corn syrup is virtually directly substitutable for sugar, in that it has high sweetness resulting from the fructose level, possesses hygroscopic abilities, and can also provide viscosity and emulsion stability in products such as salad dressings and other sauces.

However, the Commission's 1976 investigation of honey noted that:

> "Changes in the price of corn sirup, a major substitute for industrial honey, do not seem to bring out corresponding changes in import levels on honey or in domestic honey production. Thus a price increase in corn sirup does not appear to be followed by an increase in either honey imports or sales to processors of domestic honey. The likely explanation for this is that the price level of corn sirup is so much lower than the price level of either domestic or imported honey that the only barriers to corn sirup's completely taking over the honey market are consumer preference for honey and certain technical characteristics that make honey preferable for some bakery products."[43]

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[38] Sugar Chemistry, by R.S. Shallenberger and G.G. Birch, The AVI Publishing Company, Inc., Westport, CT, 1975.

[39] A monosaccharide is a carbohydrate with a formula of $C_xH_{2x}O_x$ that cannot be decomposed by hydrolysis. A disaccharide has a formula of $C_{12}H_{22}O_{11}$, and upon hydrolysis yields two monosaccharides. Sugar (glucose) is a disaccharide.

[40] Sugar Chemistry, p. 155.

[41] "Industrial Use and Attitudes Study", National Honey Board, 1992.

[42] High-fructose corn syrup is a starch-based sweetener produced from corn and commercially marketed as either HFCS-42 or HFCS-55. The numerical designation indicates the level of fructose. HFCS-42 is generally used for processed foods, whereas HFCS-55 is usually used to sweeten beverages. Invert sugar is a mixture of glucose (dextrose) and fructose (levulose) formed by the hydrolysis of sucrose.

[43] USITC, Honey: Report to the President on Investigation No. TA-201-14, publication 781, June 1976, p. A-118. The report also noted (p. A-142) that "The best reading obtained was a cross-elasticity of 2.037 for purchases by processors of domestic industrial honey, but the reading possessed a low statistical significance level. Inspection of the data indicates that the comparable cross-elasticity for imported industrial honey would have an even lower statistical significance."

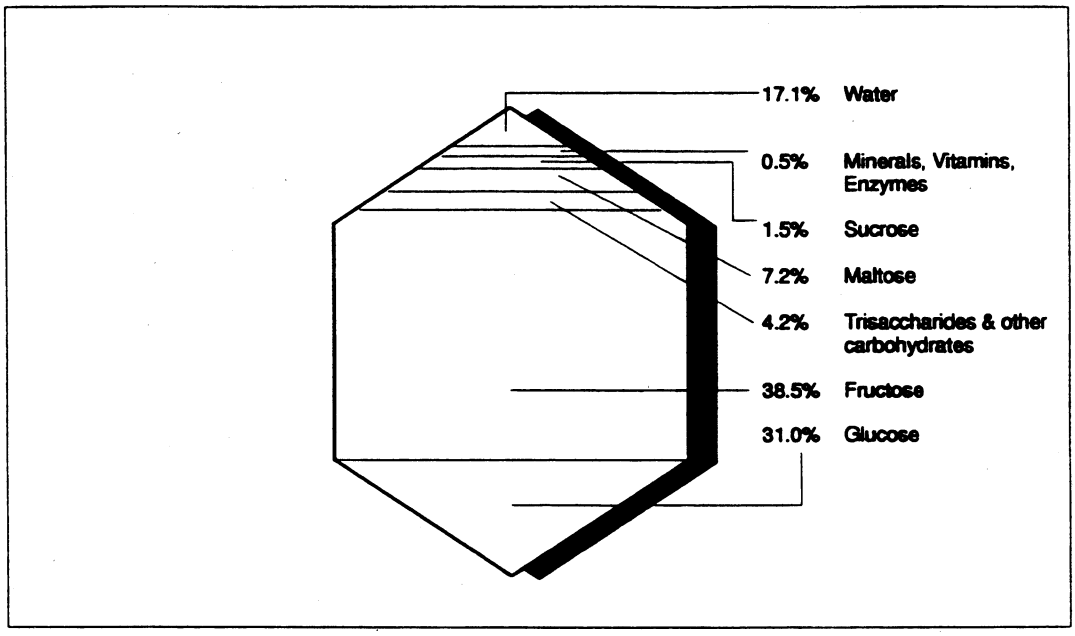
Table 2
Average composition of honey[1]

| Item | Average | Standard deviation | Range |
|---|---|---|---|
| | *(Percent)* | | |
| Moisture | 17.2 | 1.5 | 12.2 - 22.9 |
| Fructose | 38.4 | 1.8 | 30.9 - 44.3 |
| Glucose | 30.3 | 3.0 | 22.9 - 40.7 |
| Sucrose | 1.3 | 0.9 | 0.2 - 7.6 |
| Maltose[2] | 7.3 | 2.1 | 2.7 - 16.0 |
| Higher sugars | 1.4 | 1.1 | 0.1 - 3.8 |
| Free acid as gluconic | 0.43 | 0.16 | 0.13 - 0.92 |
| Lacotone as gluconolactone | 0.14 | 0.07 | 0.0 - 0.37 |
| Total Acid as gluconic | 0.57 | 0.20 | 0.17 - 1.17 |
| Ash | 0.17 | 0.15 | 0.02 - 1.03 |
| Nitrogen | 0.04 | 0.03 | 0.00 - 0.13 |
| pH | 3.9 | - | 3.42 - 6.10 |
| Diastase[3] | 20.8 | 9.8 | 2.1 - 62.1 |

[1] Data for 490 samples of U.S. honey (White, Riethof, Kushnir, & Subers, 1962). All values in percentages, except for pH and diastase. Values for sugars are for 439 of the samples after removal of honeydew outliers (White, 1980).
[2] Reducing disaccharides, calculated as maltose.
[3] Data for 292 of the samples.

Source: The Hive and the Honey Bee, edited by Joe M. Graham, revised edition, Dadant and Sons, Hamilton, IL, 1992.

**Figure 6**
**Composition of honey**




Source: National Honey Board.

Table 3
U.S. total consumption of caloric sweeteners, by types, 1980-93[1]

*(1,000 short tons, dry basis)*

| Year | Refined sugar[2] | Corn sweeteners: HFCS | Corn sweeteners: Glucose syrup[3] | Corn sweeteners: Dextrose | Pure honey | Edible syrups | Total caloric sweeteners |
|---|---|---|---|---|---|---|---|
| 1980 . . . | 9,522 | 2,102 | 1,908 | 433 | 94 | 50 | 14,109 |
| 1981 . . . | 9,130 | 2,589 | 1,940 | 442 | 96 | 50 | 14,247 |
| 1982 . . . | 8,554 | 3,109 | 2,011 | 459 | 104 | 50 | 14,287 |
| 1983 . . . | 8,236 | 3,685 | 2,066 | 474 | 116 | 50 | 14,627 |
| 1984 . . . | 7,873 | 4,427 | 2,110 | 487 | 108 | 50 | 15,055 |
| 1985 . . . | 7,480 | 5,349 | 2,157 | 497 | 107 | 50 | 15,640 |
| 1986 . . . | 7,225 | 5,490 | 2,196 | 508 | 121 | 50 | 15,590 |
| 1987 . . . | 7,573 | 5,732 | 2,240 | 517 | 137 | 50 | 16,249 |
| 1988 . . . | 7,604 | 5,944 | 2,298 | 525 | 114 | 50 | 16,535 |
| 1989 . . . | 7,761 | 6,108 | 2,390 | 539 | 118 | 50 | 16,966 |
| 1990 . . . | 8,051 | 6,285 | 2,511 | 559 | 124 | 50 | 17,580 |
| 1991 . . . | 8,053 | 6,489 | 2,611 | 573 | 121 | 50 | 17,897 |
| 1992 . . . | 8,250 | 6,600 | 2,700 | 580 | 124 | 50 | 18,304 |
| 1993[4] . . . | 8,387 | 6,725 | 2,800 | 585 | 125 | 50 | 18,672 |

[1] Totals may not add due to rounding.
[2] Does not include sugar imported in blends and mixtures.
[3] Includes estimates for glucose syrup solids and maltodextrin, as well as for glucose syrup.
[4] Preliminary.

Source: Economic Research Service, USDA.

Table 4
U.S. per capita consumption of caloric sweeteners, by types, 1980-93[1]

*(Pounds, dry basis)*

| Year | Corn sweeteners-- Refined sugar[2] | HFCS | Glucose syrup[3] | Dextrose | Pure honey | Edible syrups | Total caloric sweeteners | U.S. population[4] |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | *Millions* | |
| 1980 | 83.6 | 18.5 | 16.8 | 3.8 | .8 | .4 | 123.9 | 227.726 |
| 1981 | 79.4 | 22.5 | 16.9 | 3.8 | .8 | .4 | 123.8 | 229.966 |
| 1982 | 73.7 | 26.8 | 17.3 | 3.9 | .9 | .4 | 123.0 | 232.188 |
| 1983 | 70.3 | 31.5 | 17.6 | 4.0 | 1.0 | .4 | 124.8 | 234.307 |
| 1984 | 66.6 | 37.5 | 17.9 | 4.1 | .9 | .4 | 127.4 | 236.348 |
| 1985 | 62.7 | 44.9 | 18.1 | 4.2 | .9 | .4 | 131.2 | 238.466 |
| 1986 | 60.0 | 45.6 | 18.3 | 4.2 | 1.1 | .4 | 129.6 | 240.651 |
| 1987 | 62.4 | 47.2 | 18.4 | 4.2 | 1.3 | .4 | 133.9 | 242.804 |
| 1988 | 62.1 | 48.5 | 18.8 | 4.3 | .9 | .4 | 135.0 | 245.021 |
| 1989 | 62.8 | 49.4 | 19.3 | 4.4 | 1.0 | .4 | 137.3 | 247.342 |
| 1990 | 64.4 | 50.3 | 20.1 | 4.5 | 1.0 | .4 | 140.7 | 249.900 |
| 1991 | 63.7 | 51.4 | 20.7 | 4.5 | 1.0 | .4 | 141.7 | 252.671 |
| 1992 | 64.5 | 51.7 | 21.1 | 4.5 | 1.0 | .4 | 143.2 | 255.462 |
| 1993[5] | 65.0 | 52.2 | 21.7 | 4.5 | 1.0 | .4 | 144.8 | 258.138 |

[1] Totals may not add due to rounding.
[2] Does not include sugar imported in blends and mixture.
[3] Includes estimates for glucose syrup solids and maltodextrin, as well as for glucose syrup.
[4] As of July 1.
[5] Preliminary.

Source: Economic Research Service, USDA.

## Government Programs and Regulations Affecting the U.S. Honey Industry

### Food and Drug Administration

There is no official U.S. definition of "honey" or legal standards for honey composition, although the general provisions of the Food, Drug, and Cosmetic Act of 1938 apply. The Food and Drug Administration (FDA) is authorized to make factory inspections and randomly check imports upon entry into the country. The inspections focus on the purity and cleanliness of the honey.[44]

The USDA maintains a voluntary grading system for extracted honey (7 CFR 52 1391). The grades are U.S. Grade A, U.S. Grade B, U.S. Grade C, and Substandard.[45] Determining the grade of honey is based on three main factors: flavor and aroma; absence of defects; and clarity. The relative importance of each factor is expressed numerically on a scale of 100, with the maximum number of points accorded each factor as follows:

| | |
|---|---|
| Flavor and aroma . . | 50 |
| Absence of defects . . | 40 |
| Clarity . . . . . | 10 |
| Total . . . . . | 100 |

These factors are determined according to the procedures and tables contained in appendix C.

The type of extracted honey, whether clover, buckwheat, or other floral source, is not incorporated into the grades of the finished product, and therefore it is possible to have a dark U.S. Grade A honey such as buckwheat. The USDA does have approved color standards for determining the color of honey. The standard color designations range from "water white" to "dark amber." The color designations of extracted honey are determined using the pfund scale, which is a measurement system generally accepted in international trade based on optical density.

### The Honey Program

A price-support program for honey was first established in 1949 to attempt to support and raise depressed honey prices. The depressed honey market following World War II stemmed from the increased honey production capacity promoted during the war in order to reduce dependence on sugar, which was largely imported or transported via sea from Hawaii. After 1951, the program evolved into two parts--a loan program and a purchase program. The purchase program has not been in operation since 1986. As determined by the 1990 Farm Act, the price of honey for the 1991 through 1995 crops was to be supported through the loan program at a price of 53.8 cents per pound. However, the Agricultural Reconciliation Act of 1993 has made several changes to the administration of the program for the 1994 crop year. Table 5 shows honey program activity since the institution of the program.

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[44] On Nov. 29, 1991, the FDA posted an import alert in response to several incidences of imported honey being found to have been adulterated with corn or cane sugar syrups. Articles found to have been adulterated are subject to refusal under 801(a)(3) of the Food, Drug, and Cosmetic Act. Additionally the FDA has issued an automatic detention alert, again under section 801(a)(3), for honey entering the United States from several specified Chinese shippers. The honey is to be detained unless the shipper or manufacturer provides valid certification showing that the honey does not contain residues of chlordimeform, a pesticide used in the treatment of mites.

[45] These standards are also referred to as U.S. Fancy, U.S. Choice, U.S. Standard, and U.S. Grade D.

Table 5
Honey price support rates and loan activity, crop years 1950-93

| Crop year | National average price support rate[1] | Parity Price adjusted | Support rate as a percent of parity | Program Activity: Quantity placed under loan | Quantity receiving payments | CCC take over | Net Government (*return*) or expenditure[2] |
|---|---|---|---|---|---|---|---|
| | *----Cents per pound-----* | | *Percent* | *----------Million pounds----------* | | *Million dollars* | |
| 1950 . . . . | 9.0 | 15.0 | 60.0 | [5] | [4] | 7.4 | [5] |
| 1951[6] . . . . | 10.0 | 16.7 | 60.0 | [5] | [4] | 17.4 | [5] |
| 1952 . . . . | 11.4 | 16.3 | 70.0 | 9.3 | [4] | 7.0 | [5] |
| 1953 . . . . | 10.5 | 15.0 | 70.0 | 3.1 | [4] | 0.6 | [5] |
| 1954 . . . . | 10.2 | 17.0 | 60.0 | 1.5 | [4] | 0.0 | [5] |
| 1955 . . . . | 9.9 | 13.2 | 75.0 | 1.6 | [4] | 0.0 | [5] |
| 1956 . . . . | 9.7 | 13.9 | 70.0 | 1.6 | [4] | 0.0 | [5] |
| 1957 . . . . | 9.7 | 13.9 | 70.0 | 2.9 | [4] | 0.1 | [5] |
| 1958 . . . . | 9.6 | 13.7 | 70.0 | 6.0 | [4] | 2.0 | [5] |
| 1959 . . . . | 8.3 | 13.8 | 60.0 | 1.3 | [4] | 0.0 | [5] |
| 1960 . . . . | 8.6 | 14.6 | 60.0 | 1.1 | [4] | 0.0 | [5] |
| 1961 . . . . | 11.2 | 14.9 | 75.0 | 4.2 | [4] | 1.1 | 0.0 |
| 1962 . . . . | 11.2 | 15.1 | 74.0 | 3.4 | [4] | 0.0 | 0.1 |
| 1963 . . . . | 11.2 | 16.7 | 67.0 | 3.2 | [4] | 0.0 | (0.1) |
| 1964 . . . . | 11.2 | 17.2 | 65.0 | 9.5 | [4] | 2.2 | 0.0 |
| 1965 . . . . | 11.2 | 17.8 | 63.0 | 17.3 | [4] | 3.3 | 0.7 |
| 1966 . . . . | 11.4 | 18.6 | 61.3 | 33.9 | [4] | 4.1 | 0.1 |
| 1967 . . . . | 12.5 | 19.5 | 64.0 | 31.0 | [4] | 5.4 | (0.1) |
| 1968 . . . . | 12.5 | 18.7 | 66.8 | 24.9 | [4] | 0.1 | 0.4 |
| 1969 . . . . | 13.0 | 19.5 | 66.7 | 45.7 | [4] | 3.5 | (0.9) |
| 1970 . . . . | 13.0 | 20.4 | 63.7 | 40.6 | [4] | [7] | 0.8 |
| 1971 . . . . | 14.0 | 21.0 | 66.7 | 22.9 | [4] | 0.0 | (0.9) |
| 1972 . . . . | 14.0 | 22.3 | 62.8 | 19.8 | [4] | 0.0 | [8] |
| 1973 . . . . | 16.1 | 26.7 | 60.2 | 12.1 | [4] | 0.0 | 0.0 |
| 1974 . . . . | 20.6 | 34.3 | 60.0 | 13.9 | [4] | 0.0 | 0.3 |
| 1975 . . . . | 25.5 | 42.4 | 60.1 | [9] | [4] | 0.0 | (0.3) |
| 1976 . . . . | 29.4 | 49.0 | 60.0 | [9] | [4] | 0.0 | (0.2) |
| 1977 . . . . | 32.7 | 54.4 | 60.0 | 14.1 | [4] | 0.0 | 1.5 |
| 1978 . . . . | 36.6 | 61.3 | 60.0 | 40.5 | [4] | 0.0 | 3.5 |
| 1979 . . . . | 43.8 | 73.1 | 60.0 | 49.1 | [4] | 0.0 | (1.7) |
| 1980 . . . . | 50.3 | 83.9 | 60.0 | 41.1 | [4] | 6.0 | 8.7 |
| 1981 . . . . | 57.4 | 95.6 | 60.0 | 55.2 | [4] | 35.2 | 8.4 |
| 1982 . . . . | 60.4 | 100.7 | 60.0 | 88.4 | [4] | 74.5 | 27.4 |
| 1983 . . . . | 62.2 | 103.7 | 60.0 | 113.6 | [4] | 106.4 | 48.0 |
| 1984 . . . . | 65.8 | 109.7 | 60.0 | 107.5 | [4] | 105.8 | 90.2 |
| 1985 . . . . | 65.3 | 108.7 | 60.0 | 102.0 | [4] | 98.0 | 80.8 |
| 1986 . . . . | 64.0 | [5] | [10] | 180.4 | [4] | 41.0 | 89.4 |
| 1987 . . . . | 61.0[11] | 106.0[12] | [10] | 218.0 | [4] | 52.7 | 72.6 |
| 1988 . . . . | 59.1 | 111.0[12] | [10] | 209.5 | [4] | 32.0 | 100.1 |
| 1989 . . . . | 56.4 | 114.0[12] | [10] | 161.7 | [4] | 2.8 | 41.7 |
| 1990 . . . . | 53.8 | [5] | [10] | 183.5 | [4] | 1.1 | 46.7 |
| 1991 . . . . | 53.8 | [5] | [10] | 112.9 | 86.7[13] | 3.2 | 16.6 |
| 1992 . . . . | 53.8 | [5] | [10] | 122.4 | 74.1 | 2.9 | 16.6 |
| 1993[14] . . . | 53.8 | [5] | [10] | 130.7 | 62.1 | [5] | [5] |

[1] For extracted honey in 60-pound or larger container.
[2] Fiscal year.
[3] Direct packer purchase program.
[4] Not applicable.
[5] Not available.
[6] On Mar. 22, 1951, support for most flavors of honey was announced at 10 cents per pound with a dozen flavors of honey of limited domestic acceptability supported at 9 cents. On Apr. 6, 1951, it was announced that the support price of honey of wide table acceptability would be increased from 10.0 to 10.1 cents per pound.
[7] 5,900 pounds.
[8] Less than $50,000.
[9] Purchased agreements only, no loan program.
[10] Parity formula dropped from the loan calculation and no purchase program.
[11] Loan rate was reduced from 63 to 61 cents per pound on Dec. 23, 1987, because of the Omnibus Budget Reconciliation Act of 1987.
[12] National Agricultural Statistics Service estimates.
[13] Program option started Apr. 1, 1991, with the 1991 honey crop.
[14] Estimated by ASCS.

Source: ASCS, U.S. Department of Agriculture.

The loan program, which has operated in every year since 1951 except 1975 and 1976, basically allows producers to take out loans using their honey as collateral. The purpose of the loan is to allow producers to market their honey in an orderly manner and to wait for the most advantageous price. The resulting market stability is intended to encourage maintenance of the bee population, which is considered vital for pollination purposes. Traditionally, the loan has been a nonrecourse loan, which requires the Commodity Credit Corporation (CCC) to take the honey if the producer elects to deliver it to the Government rather than repay the loan.

Nonrecourse loans are available to honey producers at a set loan rate per pound, using the honey as collateral. The loans are obtained through local Agricultural Stabilization and Conservation Service (ASCS) offices for each crop year during the period April 1 of the applicable crop year through March 30 of the following year. All loans mature no more than 9 months following the month in which the loan application was made. The 9-month maturation of the loans allows a staggered maturation from January 31 to December 31 of the following crop year. During the loan period, the Government does not actually take possession of the collateral honey, and the producer is responsible for the cost of storing the honey.

The loan may be repaid any time before maturity. If the honey is sold on the market, the loan must be repaid with interest. If producers elect not to sell the honey on the market, they may forfeit the honey collateral to the CCC. At settlement, premiums and/or discounts based on the color and class of the honey forfeited are applied. The tabulation below shows the premiums and discounts for the 1992 honey crop, as reported by the ASCS:

| Type | Premium/discount |
|---|---|
| | *Cents per pound* |
| Table honey: | |
| White | 0.16 premium |
| Extra light amber | 0.16 premium |
| Light amber | 0.54 discount |
| Amber | 0.54 discount |
| Nontable | 8.14 discount |

***Changes to the program since 1985***

The Food Security Act of 1985 changed the honey program to allow producers to repay the loans at an administratively set lower rate (marketing loan rate) if the market price was lower than the initial loan rate.[46] This provision, implemented at the discretion of the Secretary of Agriculture, has been used for the 1986 through 1993 crops in order to (a) minimize the number of loan

[46] The market loan repayment rate is reviewed by USDA monthly and set the third Friday of each month. The following tabulation provides the marketing loan rate, buy-back rate, and net USDA subsidy rate for honey during crop years 1990-93 (in cents per pound):

| Year | Loan rate | Buy-back rate | Net USDA subsidy rate |
|---|---|---|---|
| 1990 | 53.8 | 41.0 | 12.8 |
| 1991 | 53.8 | 47.2 | 6.6 |
| 1992 | 53.8 | 47.8 | 6.0 |
| 1993 | 53.8 | 47.0 | 6.8 |

forfeitures, (b) moderate total stocks of honey, (c) reduce costs incurred by the Government in storing honey, and (d) maintain the competitiveness of honey in domestic and export markets.[47]

The Food, Agriculture, Conservation, and Trade Act of 1990 maintained this option and, to further cut administrative costs, established a loan deficiency payment. This payment is based on the difference between the loan rate and the market loan repayment rate and is available to producers in lieu of the price support loan. The total amount of payment a producer may receive is limited in the following manner: $200,000 for the 1991 crop; $175,000 for 1992; $150,000 for 1993; and $125,000 for the 1994 crop year and subsequent crop years. Loan forfeiture limits were established by the 1990 legislation at the same yearly levels. The 1990 Act also required a budget-reduction assessment on honey production equal to 1 percent of the marketing loan rate.

The Agricultural Reconciliation Act of 1993, while not in operation during the period examined in this report, will make the following changes to the honey program:

°Honey loan rate will be reduced from 53.8 cents per pound to:
50 cents for the 1994 and 1995 crops,
49 cents for the 1996 crop,
48 cents for the 1997 crop, and
47 cents for the 1998 crop.

°The 1-percent budget-reduction assessment will be dropped.

°Payment limits will be reduced from $150,000 in 1993 to:
$125,000 for the 1994 crop,
$100,000 for the 1995 crop,
$75,000 for the 1996 crop, and
$50,000 for the 1997 and 1998 crops.

Furthermore, the FY-1994 appropriations bill reduces the amount of payments and loan forfeitures to zero for the 1994 crop year, essentially reducing the honey program to strictly a loan program. However, because the appropriation bill applies only to fiscal 1994, the provisions of the Food, Agriculture, Conservation, and Trade Act of 1990 (with the revisions of the 1993 Reconciliation Act) will return to effect in 1995 without the enactment of further legislation.

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[47] In its Honey: Background for 1990 Farm Legislation publication (ERS, USDA, Sept. 1989, pp. 27-29) USDA reported a number of factors that precipitated changes in the honey program in 1985, as follows:

> "The cost of the program began increasing in the early 1980's. While the CCC did not acquire any honey in the 1970's, CCC acquisitions of forfeited honey climbed from 6 million pounds in 1980 to 106.4 million pounds in 1983. Inflation in the economy beginning in the mid-1970's caused the honey support price to escalate from 32.7 cents per pound for the 1977 crop to 65.8 cents per pound for the 1984 crop. Inflation also led to an increase in the index of prices paid by farmers which in turn led to an increase in the parity price used in the formula to compute the support price. In 1981, the support price rose to 57.4 cents per pound which exceeded import and domestic market prices.
>
> As honey support prices moved above the average domestic price, the industry found it profitable to import lower priced honey for domestic use and to forfeit domestically produced honey to the Government. U.S. honey imports reached successively record-high levels in 1981-85, forcing the domestic market price downward and further widening the gap between the support price and market prices. Forfeitures of honey to the Government peaked with the 1984 crop when it acquired 98 percent of the 107.5 million pounds of honey placed under loan. This represented about 64 percent of domestic honey production."

*Recent support program activity*

Recent activities under the price support program have been debated by the parties in this investigation. Parties opposed to the imposition of import relief have argued that USDA has recently determined that imports of honey from China have not disrupted the U.S. market, citing a July 1993 letter from Secretary Espy, as follows:

> "while imports from China have increased 226 percent in the past five years, forfeitures of honey pledged as collateral for Commodity Credit Corporation (CCC) price support loans have decreased about 95 percent. This is an indication that because of strong demand for honey, the increased imports have been absorbed by our market without adversely affecting sales of domestically produced honey."[48]

Parties in support of the imposition of import relief have argued that Secretary Espy's letter is not meaningful evidence of the economic condition of the domestic honey industry because (1) there is a "large political element affecting any position USDA takes on the honey support program, especially in 1993 when the program was under vigorous attack in Congress and in the press," and (2) the letter has been outpaced by recent events including the increase in forfeitures since 1991 (the 95 percent decrease in loan forfeitures having occurred from 1986 to 1990) and the low level of loan repayments as of November 1993.[49]

Data on honey price support program activities as of November in each of the years 1989-93 were provided by ASCS and are presented in the following tabulation (in 1,000 pounds, except as noted):

| Item | 1989 | 1990 | 1991 | 1992 | 1993 |
|---|---|---|---|---|---|
| **Loan activity:** | | | | | |
| Quantity placed under loan | 106,832 | 137,150 | 89,363 | 91,689 | 103,964 |
| Quantity repaid | 45,514 | 72,844 | 24,874 | 16,956 | 12,733 |
| Loans repaid (percent) | 42.6 | 53.1 | 27.8 | 18.5 | 12.2 |
| **Loan deficiency payments:** | | | | | |
| Quantity receiving deficiency payments | (1) | (1) | (2) | 52,000 | 62,100 |
| **Loan forfeitures:** | | | | | |
| Quantity forfeited | 2,800 | 1,100 | 3,200 | 2,900 | (2) |

[1] Not applicable, as program was not in effect.
[2] Not available.

**The National Honey Board**

The National Honey Board was created by the Honey Research, Promotion, and Consumer Information Act (PL 98-590) on October 30, 1984. The purpose of the Act was to authorize the establishment of a program to conduct research and consumer education about honey, and to develop

[48] July 13, 1993, letter from USDA Secretary Mike Espy to Donald Schmidt, president, American Beekeeping Federation.
[49] Posthearing brief of the American Beekeeping Federation and the American Honey Producers Association, pp. 17-19.

and expand markets for honey. The program is funded through an assessment. A referendum by honey producers and importers in May 1986 approved a National Honey Board composed of industry representatives appointed by the Secretary of Agriculture to administer the Act.[50] The actual Board is composed of 13 members appointed by the U.S. Secretary of Agriculture. The Secretary selects the appointees from nominees provided by a nominating committee of representatives from the state beekeeping associations. The board is composed of persons from various sectors of the industry--currently, seven producers, two packers, two importers, one cooperative representative, and one member from the general public.

Every year the National Honey Board develops a promotional plan for honey, which includes advertisements, developing new uses, and providing consumer information. The Honey Board also conducts extensive surveys on consumers in order to determine the most beneficial approaches for increasing the market for honey. Approximately one-quarter of the gross budget of the National Honey Board goes toward research and development of marketing strategies and market uses for honey.

The National Honey Board program is funded by an assessment of 1 cent per pound on honey entering the market. In 1992, assessments totaled $3,086,293, of which over $3,000,000 was spent on advertising, public relations, research, and export marketing programs. Those who produce, handle, or import less than 6,000 pounds of honey annually or donate their honey to charity are not liable for the assessment.

The increasing significance of the role imports of honey play in the U.S. market is reflected in the following tabulation, which provides information on assessments paid to the Honey Board, by source:

| Item | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| **Assessments collected from:** | | | | | | |
| *(1,000 dollars)* | | | | | | |
| U.S.-produced honey . . . . | 2,274 | 2,012 | 1,792 | 1,910 | 2,013 | 1,966 |
| Imports of honey . . . . . | 448 | 515 | 814 | 753 | 879 | 1,120 |
| Total . . . . . | 2,722 | 2,527 | 2,606 | 2,664 | 2,892 | 3,086 |
| **Share (*percent*) of total:** | | | | | | |
| U.S.-produced honey . . . . | 83.6 | 79.6 | 68.8 | 71.7 | 69.6 | 63.7 |
| Imports of honey . . . . . | 16.4 | 20.4 | 31.2 | 28.3 | 30.4 | 36.3 |
| Total . . . . . | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

**The Market Promotion Program**

U.S. exports of honey have been assisted by the Market Promotion Program (MPP) and its predecessor, the Targeted Export Assistance (TEA) program.[51] The Foreign Agricultural Service (FAS) administers the program. The original TEA program was developed in order to help gain entrance abroad into markets for products affected by unfair trade practices of the importing country or other countries exporting to the same market. The MPP program performs basically the same function, but its promotional efforts are not limited to commodities affected by unfair trade practices. Under both the TEA and the MPP, the National Honey Board has received funds in order to assist in

[50] A sunset provision of the Act provides for a referendum vote every 5 years on the continuance of the program. The first referendum was held in 1991, and was favorable. The next referendum will be in 1996.

[51] The MPP was established by the 1990 Farm Bill; the TEA program was created by the Food Security Act of 1985.

the promotion of U.S. honey exports. The following is an FAS summary of export assistance provided to the Honey Board under the TEA and MPP programs from 1989 to 1993:

| Fiscal year | Allocated | Budgeted | Spent |
|---|---|---|---|
| 1989 | *** | *** | *** |
| 1990 | *** | *** | *** |
| 1991 | *** | *** | ***[1] |
| 1992 | *** | *** | *** |
| 1993 | *** | *** | ***[2] |

[1] Includes $*** from the TEA program, and $*** from the MPP program.
[2] Estimated by FAS, as the program does not end until March 1994.

## U.S. Tariff Treatment

Imports of pure honey are classified in HTS heading 0409.00, and data are gathered under statistical reporting numbers 0409.00.0020, 0409.00.0040, and 0409.00.0060.[52,53] Natural honey has a column 1-general rate of duty of 2.2 cents per kilogram; eligible honey enters free of duty under the United States-Canada Free Trade Agreement, the United States-Israel Free Trade Area Implementation Act, the Caribbean Basin Economic Recovery Act, and the Andean Trade Preference Act. Honey mixed with flavorings, milk products, and other ingredients is classified as an edible preparation in HTS subheading 2106.90.60 (successor subheadings include 2106.90.65 (effective 1/1/93), and 2106.90.61 and 2106.90.69 (effective 1/1/94)), and is dutiable at a column 1-general rate of 10 percent ad valorem. These products enter free of duty from beneficiary countries under the Generalized System of Preferences, the Caribbean Basin Economic Recovery Act, the United States-Israel Free Trade Area Implementation Act, and the Andean Trade Preference Act. FTA-eligible imports from Canada are dutiable at a 1993 rate of 5 percent ad valorem. The U.S. Customs Service indicates that honey products comprise a very small portion of the products entering in this residual subheading.

Artificial honey and honey blended with corn syrup or sugar syrups are classified in HTS subheading 1702.90.50. Such products are subject to a column 1-general rate of duty of 6 percent ad valorem, with eligible products from developing countries under the agreements specified above entering free of duty. Imports from Canada are dutiable at a 1993 rate of 3 percent ad valorem. According to the U.S. Customs Service, imports of artificial honey and honey blended with corn or sugar syrups are a very small portion of products entering under this HTS classification.

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[52] Relevant HTS nomenclature are presented in app. D.
[53] As of Jan. 1, 1994, the HTS will have 2 additional statistical reporting numbers for natural honey in bulk form based on color (included in app. D).

## THE U.S. MARKET

### Apparent U.S. Consumption

Table 6 and figure 7 present data on apparent U.S. consumption of honey. Since 1980, annual U.S. production levels of honey have varied substantially. Over the period 1980 to 1993, the United States has been a net importer of honey.[54] Average unit prices have also varied (table 7 and figure 8).[55]

Apparent U.S. consumption of honey trended upward during 1980-93 at an average annual rate of growth of 2.0 percent. Consumption during 1989-93 slowed somewhat to an average annual rate of growth of 1.2 percent.[56] U.S. per-capita consumption of honey fluctuated between 0.8 and 1.3 pounds during 1980-88, then remained constant during 1989-93 at 1.0 pound (table 4).[57]

### U.S. Market Participants

#### U.S. Beekeepers

Beekeepers as honey producers are classified as commercial or full-time producers (300 or more colonies), part-time or sideliner producers (25 to 299 hives), or hobbyists (fewer than 25 hives). In its 1976 investigation, the Commission reported the number of beekeepers per category as follows:

| Category | Number |
|---|---|
| Commercial . . . . | 2,000 |
| Sideliners . . . . . | 10,000 |
| Hobbyists . . . . . | 200,000 |

[54] The Commission's 1976 investigation on honey showed that, with the exception of 1973, the United States has been a net importer of honey since 1966. In contrast, the United States was a net exporter of honey throughout 1951-66, with the exception of 1960 and 1961. Apparent annual U.S. consumption during 1945-75 fluctuated between 196 million pounds and 265 million pounds. USITC Honey: Report to the President on Investigation No. TA-201-14, USITC Publication 781, June 1976, p. A-5.

[55] The Commission's 1976 honey investigation found (p. A-118) that "a 1-percent increase in the unit value of production (a surrogate domestic price) would be likely to have the result of increasing honey imports by 4.5 percent, all other factors remaining unchanged. As well, the analysis indicated that a 1-percent increase in the unit value of imports would reduce the amount of imports to the United States by about 3.7 percent, other economic variables remaining constant." That report also found that the income elasticity was 1.25 for the years 1951-74 (p. A-139).

[56] Both trend growth rates were fitted by OLS regression. Trend lines fitted over a period encompassing relatively large fluctuations such as those shown in fig. 7 are, of course, crucially dependent upon the period selected. The 1980-93 trend line noted above is statistically highly significant ("t" statistic=4.29). However, a trend line fitted over the 1989-93 period is not statistically significant (at the 90-percent confidence level).

[57] The Commission's 1976 report on honey indicated that U.S. per-capita consumption of honey gradually declined from 1.49 pounds in 1946-50 to 1.30 pounds in 1961-65 and 1.09 pounds in 1971-75 (p. A-91).

Table 6
Honey: U.S. supply and disposition, 1980-93

*(Million pounds)*

| Year | Supply-- Carry-in[1] | Production | Imports | Total | Disposition-- Domestic | Export | Total |
|---|---|---|---|---|---|---|---|
| 1980 | 37.7 | 199.8 | 49.0 | 286.5 | 226.2 | 8.5 | 234.7 |
| 1981 | 51.8 | 185.9 | 77.3 | 315.0 | 232.0 | 9.2 | 241.2 |
| 1982 | 73.8 | 230.2[2] | 92.0 | 395.8 | 250.8 | 8.5 | 259.3 |
| 1983 | 136.5 | 205.0[2] | 109.8 | 451.3 | 278.9 | 7.5 | 286.4 |
| 1984 | 164.9 | 165.1[2] | 128.7 | 458.7 | 260.3 | 7.5 | 267.8 |
| 1985 | 190.9 | 150.1[2] | 138.2 | 479.2 | 257.1 | 6.5 | 263.6 |
| 1986 | 215.6 | 200.4 | 118.4 | 534.4 | 291.4 | 9.2 | 300.6 |
| 1987 | 233.8 | 226.8 | 58.3 | 518.9 | 331.2 | 12.4 | 343.6 |
| 1988 | 175.3 | 214.1 | 55.9 | 445.3 | 275.6 | 13.9 | 289.5 |
| 1989 | 155.7 | 177.0 | 77.3 | 410.0 | 284.8 | 9.9 | 294.7 |
| 1990 | 115.2 | 197.8 | 77.0 | 390.0 | 299.8 | 12.4 | 312.2 |
| 1991 | 77.8 | 219.2 | 92.2 | 389.2 | 292.0 | 9.6 | 301.6 |
| 1992 | 87.6 | 220.6 | 114.6 | 422.8 | 298.5 | 10.4 | 308.9 |
| 1993 | 113.9 | 198.4[3] | 130.6[4] | 442.9 | 303.5[3] | 8.4[4] | 311.9 |

[1] Includes government inventory and commercial stocks.
[2] Estimated by USDA.
[3] Forecast by USDA.
[4] Annualized from January-September 1993 official statistics in relation to 1992 experience.

Source: ASCS and NASS, USDA; and official statistics of the U.S. Department of Commerce.

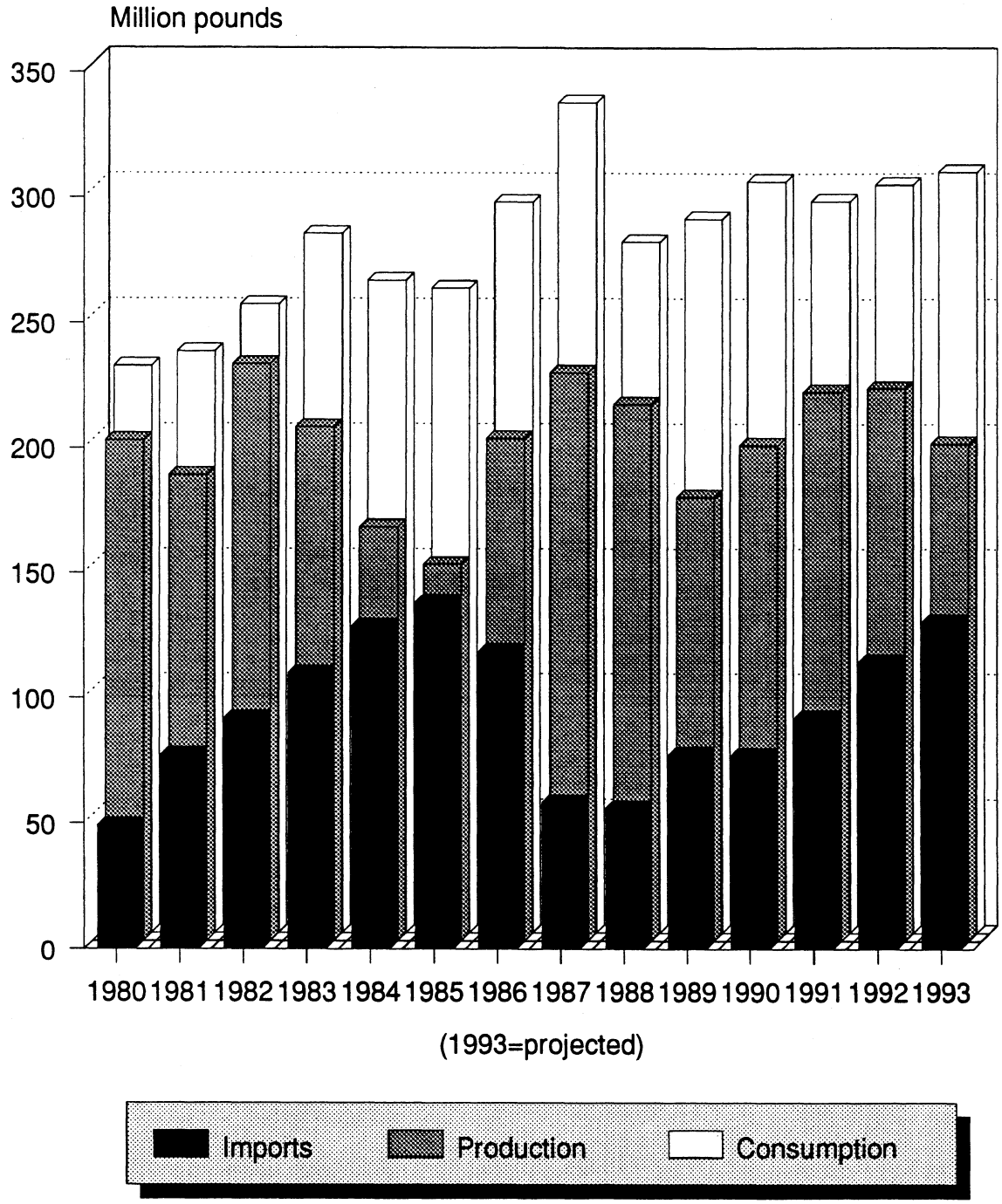
Table 7
Honey: Value and unit values of U.S. production, imports, and exports, 1980-93[1]

| Year | Value *(million dollars)*-- Production | Imports | Exports | Unit value *(cents per pound)*-- Production | Imports | Exports |
|---|---|---|---|---|---|---|
| 1980 | 122.8 | 22.8 | 8.9 | 61.4 | 46.6 | 87.1 |
| 1981 | 117.6 | 35.4 | 7.9 | 63.2 | 45.7 | 64.8 |
| 1982 | (2) | 40.9 | 5.8 | 56.8[3] | 44.4 | 66.9 |
| 1983 | (2) | 47.1 | 4.1 | 54.4[3] | 42.9 | 67.9 |
| 1984 | (2) | 51.8 | 5.4 | 50.0[3] | 40.3 | 83.1 |
| 1985 | (2) | 50.8 | 5.9 | 47.5[3] | 36.7 | 85.1 |
| 1986 | 102.7 | 47.9 | 6.4 | 51.1 | 40.5 | 71.0 |
| 1987 | 113.7 | 23.1 | 7.1 | 50.3 | 39.7 | 82.2 |
| 1988 | 108.0 | 21.7 | 6.6 | 50.0 | 38.9 | 78.6 |
| 1989 | 89.4 | 31.0 | 6.3 | 49.8 | 40.2 | 63.7 |
| 1990 | 107.7 | 34.0 | 7.1 | 53.7 | 44.2 | 64.7 |
| 1991 | 121.9 | 44.4 | 6.8 | 55.6 | 48.1 | 91.9 |
| 1992 | 123.1 | 54.9 | 7.2 | 55.8 | 47.9 | 59.8 |
| 1993 | (2) | 58.5 | 6.0 | (2) | 45.1 | 68.9 |

[1] Production valued at farm level; imports valued at landed-duty-paid; and exports valued at port of export.
[2] Not available.
[3] Estimated by USDA.

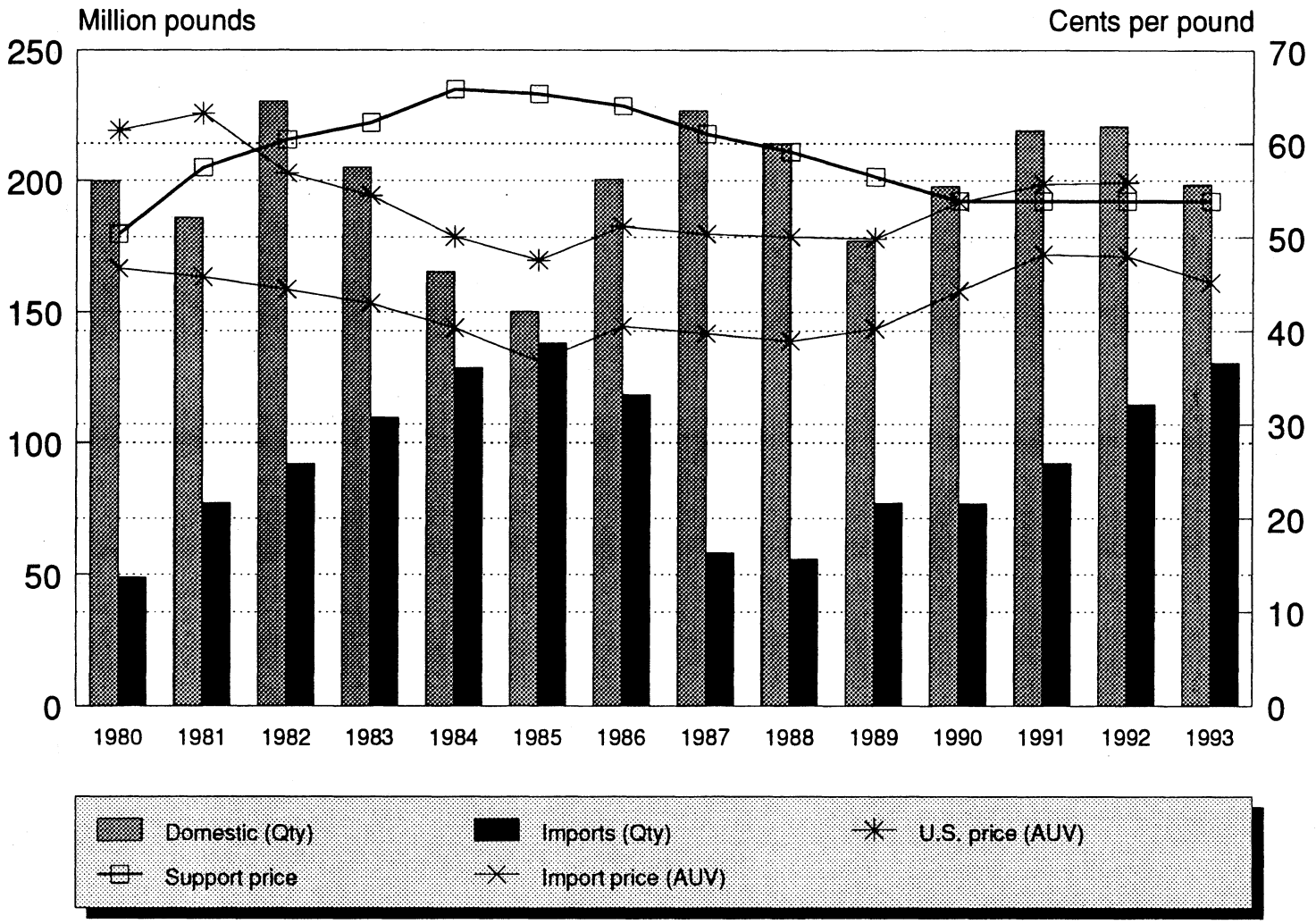
Source: ASCS and NASS, USDA; and official statistics of the U.S. Department of Commerce.

Figure 7: Honey--U.S. production, imports, and apparent consumption, 1980-93




Source: Table 6.

Figure 8: Honey volume and average unit values, 1980-93




Source: Tables 5, 6, and 7.

The 1987 Census of Agriculture reported 38,625 farms with honeybee colonies, down from 46,833 in 1982.[58] In addition, the A.I. Root Company conducted surveys of state apiary inspectors and reported in its Bee Culture magazine that the number of U.S. beekeepers was estimated to have declined from 139,061 in 1991 to 121,025 in 1992 (table 8).

As reported by the Commission in 1976 and the USDA in 1993, there are an estimated 1,600-2,000 full-time or commercial beekeepers in the United States, producing approximately 60 percent of the total honey extracted. Commercial beekeepers can be (a) migratory, relocating colonies several times during the year to provide pollination services and to extend the production season, or (b) nonmigratory, leaving colonies in the same location, summer and winter.

Among the commercial beekeepers are a small group that specialize in the production of queens and packaged bees, produce small quantities of honey, and are located in the South and in California. These beekeepers sell packages of bees to other beekeepers to (a) replace colonies killed or severely damaged in the fall and winter in northern areas, (b) strengthen colonies weakened by overwintering, diseases, or pesticides, and (c) stock new colonies.

**U.S. Packers**

U.S. honey packers may be classified as producer/packers, cooperatives, or commercial packer/bottlers. During 1992, there were approximately 500 producer/packers, one large-scale cooperative (Sioux Honey), and 450 packer/bottlers. The 15 largest packers (including the large-scale cooperative) account for 80 to 95 percent of the honey sold through wholesale and industrial channels of distribution.

***The question of "domestically produced" honey***

Many commercial packer/bottlers pack honey from both domestic and foreign sources. During the Commission's hearing in this investigation, Commissioner Nuzum raised the question as to whether or not packers should be included in the domestic industry producing honey "where those packers have essentially mixed interests in handling both foreign product and domestic product."[59] In addition, those in support of the imposition of import relief have contended that--

> "Because honey packers who purchase substantial amounts of low-priced PRC honey benefit substantially from such imports, their data would clearly have such a distorting effect on the aggregate data. Moreover, there is no 'coincidence of economic interest' between those packers who import substantial amounts of PRC honey and all other domestic packers and honey producers. This is illustrated by the strong opposition by leading packers of PRC honey to the remedies sought by the rest of the domestic industry. Thus, the Commission should give limited weight to the responses of packers who pack substantial amounts of PRC honey."[60]

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[58] However, the Census estimate does not include the majority of hobbyists and non-farm-resident beekeepers.

[59] Hearing transcript (TR), p. 170.

[60] Joint Posthearing Brief and Answers to Commissioners' Questions of The American Beekeeping Federation, Inc. and the American Honey Producers Association, Inc., pp. 6-7. The "coincidence of economic interest" cites to Commissioner Brunsdale's views in Sulfur Dyes from China, India, and the United Kingdom, (Invs. Nos. 731-TA-548, 550, and 551 (Preliminary)), USITC Publication No. 2514 (May 1992) at pp. 11-13.

Table 8
Honey: Number of beekeepers and bee colonies, by states, 1991 and 1992

| States and regions | Number of beekeepers-- 1991 | 1992 | % Change | Colonies-- 1992 | Share of 1992 total Beekeepers | Colonies |
|---|---|---|---|---|---|---|
| | (*Thousands*) | | (*Percent*) | | | |
| 1 Connecticut | 1,850 | 1,000 | -45.9 | [1] | 0.8 | -- |
| 1 Maine | 1,000 | 1,000 | 0.0 | 15 | 0.8 | 0.5 |
| 1 Massachusetts | 2,500 | 2,000 | -20.0 | [1] | 1.7 | -- |
| 1 New Hampshire | 1,000 | 1,000 | 0.0 | [1] | 0.8 | -- |
| 1 New Jersey | 1,000 | 900 | -10.0 | 8 | 0.7 | 0.3 |
| 1 New York | 10,000 | 8,250 | -17.5 | 70 | 6.8 | 2.3 |
| 1 Pennsylvania | 8,000 | 6,800 | -15.0 | 30 | 5.6 | 1.0 |
| 1 Rhode Island | 350 | 300 | -14.3 | [1] | 0.2 | -- |
| 1 Vermont | 3,500 | 2,500 | -28.6 | 6 | 2.1 | 0.2 |
| 2 Delaware | 450 | 450 | 0.0 | [1] | 0.4 | -- |
| 2 Kentucky | 8,000 | 7,000 | -12.5 | 4 | 5.8 | 0.1 |
| 2 Maryland | 1,988 | 1,200 | -39.6 | 6 | 1.0 | 0.2 |
| 2 North Carolina | 12,000 | 10,000 | -16.7 | 15 | 8.3 | 0.5 |
| 2 Tennessee | 7,500 | 7,200 | -4.0 | 7 | 5.9 | 0.2 |
| 2 Virginia | 4,000 | 4,000 | 0.0 | 13 | 3.3 | 0.4 |
| 2 West Virginia | 3,600 | 3,500 | -2.8 | 23 | 2.9 | 0.8 |
| 3 Alabama | 1,334 | 1,200 | -10.0 | 25 | 1.0 | 0.8 |
| 3 Florida | 9,200 | 6,500 | -29.3 | 220 | 5.4 | 7.3 |
| 3 Georgia | 2,400 | 2,000 | -16.7 | 85 | 1.7 | 2.8 |
| 3 Mississippi | 2,100 | 2,000 | -4.8 | 25 | 1.7 | 0.8 |
| 3 South Carolina | 2,500 | 2,500 | 0.0 | 11 | 2.1 | 0.4 |
| 4 Illinois | 2,490 | 2,300 | -7.6 | 16 | 1.9 | 0.5 |
| 4 Indiana | 1,000 | 1,000 | 0.0 | 15 | 0.8 | 0.5 |
| 4 Michigan | 2,400 | 2,000 | -16.7 | 95 | 1.7 | 3.1 |
| 4 Ohio | 7,500 | 6,000 | -20.0 | 43 | 5.0 | 1.4 |
| 4 Wisconsin | 10,000 | 9,000 | -10.0 | 105 | 7.4 | 3.5 |
| 5 Iowa | 4,000 | 3,750 | -6.3 | 65 | 3.1 | 2.1 |
| 5 Kansas | 3,000 | 3,000 | 0.0 | 28 | 2.5 | 0.9 |
| 5 Minnesota | 1,200 | 1,000 | -16.7 | 190 | 0.8 | 6.3 |
| 5 Missouri | 1,000 | 900 | -10.0 | 87 | 0.7 | 2.9 |
| 5 Nebraska | 623 | 550 | -11.7 | 96 | 0.5 | 3.2 |
| 5 North Dakota | 308 | 300 | -2.6 | 240 | 0.2 | 7.9 |
| 5 South Dakota | 360 | 350 | -2.8 | 240 | 0.3 | 7.9 |
| 6 Arizona | 1,000 | 1,000 | 0.0 | 70 | 0.8 | 2.3 |
| 6 Arkansas | 2,780 | 2,000 | -28.1 | 45 | 1.7 | 1.5 |
| 6 Louisiana | 700 | 600 | -14.3 | 45 | 0.5 | 1.5 |
| 6 New Mexico | 250 | 250 | 0.0 | 18 | 0.2 | 0.6 |
| 6 Oklahoma | 3,000 | 2,500 | -16.7 | 9 | 2.1 | 0.3 |
| 6 Texas | 2,000 | 2,000 | 0.0 | 125 | 1.7 | 4.1 |
| 7 Colorado | 1,000 | 925 | -7.5 | 52 | 0.8 | 1.7 |
| 7 Idaho | 250 | 250 | 0.0 | 135 | 0.2 | 4.5 |
| 7 Montana | 450 | 400 | -11.1 | 25 | 0.3 | 0.8 |
| 7 Nevada | 280 | 250 | -10.7 | 15 | 0.2 | 0.5 |
| 7 Utah | 1,000 | 1,000 | 0.0 | 47 | 0.8 | 1.6 |
| 7 Wyoming | 175 | 150 | -14.3 | 41 | 0.1 | 1.4 |
| 8 California | 5,000 | 4,250 | -15.0 | 470 | 3.5 | 15.5 |
| 8 Oregon | 2,000 | 2,000 | 0.0 | 52 | 1.7 | 1.7 |
| 8 Washington | 1,023 | 2,000 | 95.5 | 80 | 1.7 | 2.6 |
| Other | [1] | [1] | - | 18 | - | 0.6 |
| Total | 139,061 | 121,025 | -13.0 | 3,030 | 100.0 | 100.0 |
| Region totals: | | | | | | |
| 1 | 29,200 | 23,750 | -18.7 | 147 | 19.6 | 4.3 |
| 2 | 37,538 | 33,350 | -11.2 | 88 | 27.6 | 2.2 |
| 3 | 17,534 | 14,200 | -19.0 | 389 | 11.7 | 12.1 |
| 4 | 23,390 | 20,300 | -13.2 | 305 | 16.8 | 9.0 |
| 5 | 10,491 | 9,850 | -6.1 | 861 | 8.1 | 31.2 |
| 6 | 9,730 | 8,350 | -14.2 | 331 | 6.9 | 10.3 |
| 7 | 3,155 | 2,975 | -5.7 | 377 | 2.5 | 10.4 |
| 8 | 8,023 | 8,250 | 2.8 | 661 | 6.8 | 19.9 |
| Other | [1] | [1] | - | 22 | - | 0.6 |
| Total | 139,061 | 121,025 | -13.0 | 3,181 | 100.0 | 100.0 |

[1] Not available.

Source: Bee Culture magazine; and NASS, USDA statistics.

Counsel for parties opposed to the imposition of import relief argues that packers should be included in the domestic industry because (a) the Commission included packers in the U.S. industry in its determination in the 1976 section 201 investigation of honey; (b) packers are an integral part of the U.S. honey industry, whereby packing and beekeeping are integrated parts of a continuous chain of production from hive to market, and is reflected in the composition of the National Honey Board (packers hold one-third of the positions);[61] and (c) information is not available to separate financial data for packers' domestic versus import operations.[62]

Data relating to purchases of honey by source, for 40 packers accounting for 67.4 percent of the U.S. disposition of honey in 1992, are presented in table 9. A summary of data by categories of domestic share is presented in the following tabulation (quantities in 1,000 pounds):

| Domestic share | No. firms | Purchases (*thousand pounds*)-- Total | China | Other | Domestic | Purchases as a share of (*percent*): Total Disp. | Reported purchases-- China | Other | Domestic |
|---|---|---|---|---|---|---|---|---|---|
| <50%..... | 13 | 79,820 | 30,489 | 28,958 | 20,373 | 25.9 | 38.2 | 36.3 | 25.5 |
| ≥50% <100%.. | 14 | 116,375 | 13,957 | 8,344 | 94,074 | 37.7 | 12.0 | 7.2 | 80.8 |
| 100%..... | 13 | 11,803 | 0 | 0 | 11,803 | 3.8 | 0.0 | 0.0 | 100.0 |
| Total..... | 40 | 207,998 | 44,446 | 37,302 | 126,250 | 67.4 | 21.4 | 17.9 | 60.7 |

As indicated above, 13 commercial packers, which accounted for 25.9 percent of total disposition of honey during 1992, used less than 50 percent U.S.-produced honey in their packing operations. The average U.S. share of total purchases for this category of packers was 25.5 percent, with U.S. shares ranging from a low of 8.7 percent to a high of 44.1 percent.

Table 9
Honey: List of packers, ranked by the ascending order of the domestic share of firms' purchases, 1992

* * * * * * *

***Packers' reasons for purchasing honey from various sources***

The Commission's packer's questionnaire requested comments regarding the reasons for purchasing honey products from different sources. The following comments were reported to the Commission by packers of both U.S.-produced and Chinese-produced honey:

| Firm | Comments |
|---|---|
| ***..... | "Quality, availability, price & promptness of shipment." |
| ***..... | "Domestic honey - Flavor. Chinese honey - Price." |

[61] Testimony of M. Ingalls, Pure Foods, Inc.; TR, p. 170.
[62] Posthearing brief on behalf of the Honey Users Council of America, Dec. 7, 1993, pp. 11-13.

| Firm | Comments |
|---|---|
| ***..... | "We blend honey from 5 geographical sources (U.S., Canada, Australia, Argentina and China) to achieve a consistent year-round product." |
| ***..... | "Over approximately 80% of the production is ***. The balance of purchases made are made based upon quality-color, moisture, flavor, adulteration free and price. On the average, approximately ***% of our purchases represent domestic production." |
| ***..... | "Best deal available at the time." |
| ***..... | "Meet the needs of our customers with a pure, natural product." |
| ***..... | "We purchase based on quality, price, availability." |
| ***..... | "We are in the business of selling pure natural honey to bakeries." |
| ***..... | "U.S. white honey for flavor, all other sources because the price was lower than government price supported for like quality." |
| ***..... | "Price." |
| ***..... | "Reasons don't differ by source." |
| ***..... | "Our customers ask for premium honey." |
| ***..... | "Domestic produced. Quality." |
| ***..... | "Price and availability to contract far in advance." |

Additional information regarding purchasing factors was provided by 40 packers in response to the Commission's questionnaires. Twenty-two firms imported honey from China or purchased such imports. The 22 packers of honey from China accounted for *** percent of reported purchases of honey, *** percent of total imports of honey from China, and *** percent of total disposition of honey in the United States in 1992. A summary of data by purchasing factors for the firms that pack honey from China is presented in the following tabulation (see table 9 for firm detail):

| Purchasing factors | No. firms | Purchases (*thousand pounds*)-- Total | China | Other | Domestic | Purchases as a share of (*percent*): Total Disp. | Reported purchases-- China | Other | Domestic |
|---|---|---|---|---|---|---|---|---|---|
| Quality..... | 13 | 95,183 | 20,684 | 9,163 | 65,336 | 30.9 | 21.7 | 9.7 | 68.6 |
| Price..... | 5 | 63,858 | 12,109 | 21,058 | 30,691 | 20.7 | 19.0 | 33.0 | 48.1 |
| Availability..... | 3 | *** | *** | *** | *** | *** | *** | *** | *** |
| Traditional suppliers..... | 1 | *** | *** | *** | *** | *** | *** | *** | *** |
| Total..... | 22 | *** | *** | *** | *** | *** | *** | *** | *** |

As indicated above, 13 commercial packers of honey from China, accounting for 30.9 percent of total disposition of honey during 1992, listed quality as the most important factor in purchasing decisions; purchases of honey from China averaged 21.7 percent of total purchases for this category of packers. Five packers, accounting for 20.7 percent of total disposition, listed price as the most important factor in purchasing decisions; purchases of honey from China averaged 19.0 percent of total purchases for this category of packers.

***The question of the quality of imports of honey from China***

Twenty-one of the 22 packers of honey from China provided information regarding the quality of the honey from China in comparison with U.S.-produced honey. The 21 firms accounted for 89.0 percent of reported purchases of honey, and 60.0 percent of total disposition of honey in the United States in 1992. A summary of data by quality rating for the firms that pack honey from China is presented in the following tabulation (see table 9 for firm detail):

| Rating of China honey | No. firms | Purchases (*thousand pounds*)-- Total | China | Other | Domestic | Purchases as a share of (*percent*): Total China | Reported purchases-- China | Other | Domestic |
|---|---|---|---|---|---|---|---|---|---|
| Superior..... | 4 | 20,497 | 14,011 | 2,045 | 4,441 | 23.4 | 68.4 | 10.0 | 21.7 |
| Comparable.. | 7 | 26,705 | 11,582 | 8,249 | 6,874 | 19.3 | 43.4 | 30.9 | 25.7 |
| Inferior..... | 10 | 137,941 | 17,095 | 24,537 | 96,309 | 28.5 | 12.4 | 17.8 | 69.8 |
| Total..... | 21 | 185,143 | 42,688 | 34,832 | 107,623 | 71.2 | 23.1 | 18.8 | 58.1 |

As indicated above, 11 packers of honey from China, accounting for 42.7 percent of total imports of bulk honey from China in 1992, rated honey imported from China as superior or comparable to U.S.-produced honey; purchases of honey from China averaged 54.2 percent of total purchases for the two categories of packers. Ten packers, accounting for 28.5 percent of total imports of bulk honey from China, rated honey imported from China as inferior to U.S.-produced honey; purchases of honey from China averaged 12.4 percent of total purchases for this category of packers. For the 10 packers that rated imports of honey from China as inferior, purchases by those firms of imports of honey from China increased by 18.7 percent during January-September 1993 when compared to the same period in 1992, and the share of honey from China to total purchases increased from 12.1 percent during January-September 1992 to 14.4 percent during the same period in 1993.

Data for *** packers that have not responded in adequate detail to the Commission's questionnaires are not presented in the above tabulation. However, based on the volume data that the firms did provide, staff conservatively estimates that the *** packers account for approximately *** pounds of honey imports from China. Both firms reported that honey from China is of comparable quality to U.S.-produced honey, and as such the share of imports from China considered superior or comparable would increase to *** percent, with *** percent unreported.

**U.S. Importers**

Based on data provided by the National Honey Board, there are approximately 200 importers of honey in the United States. With respect to imports of honey from China, seven firms accounted for approximately 95 percent of such imports in 1992. *** importers of honey from China were packers that imported for their own consumption, and these firms represented approximately *** percent of imports during 1992.

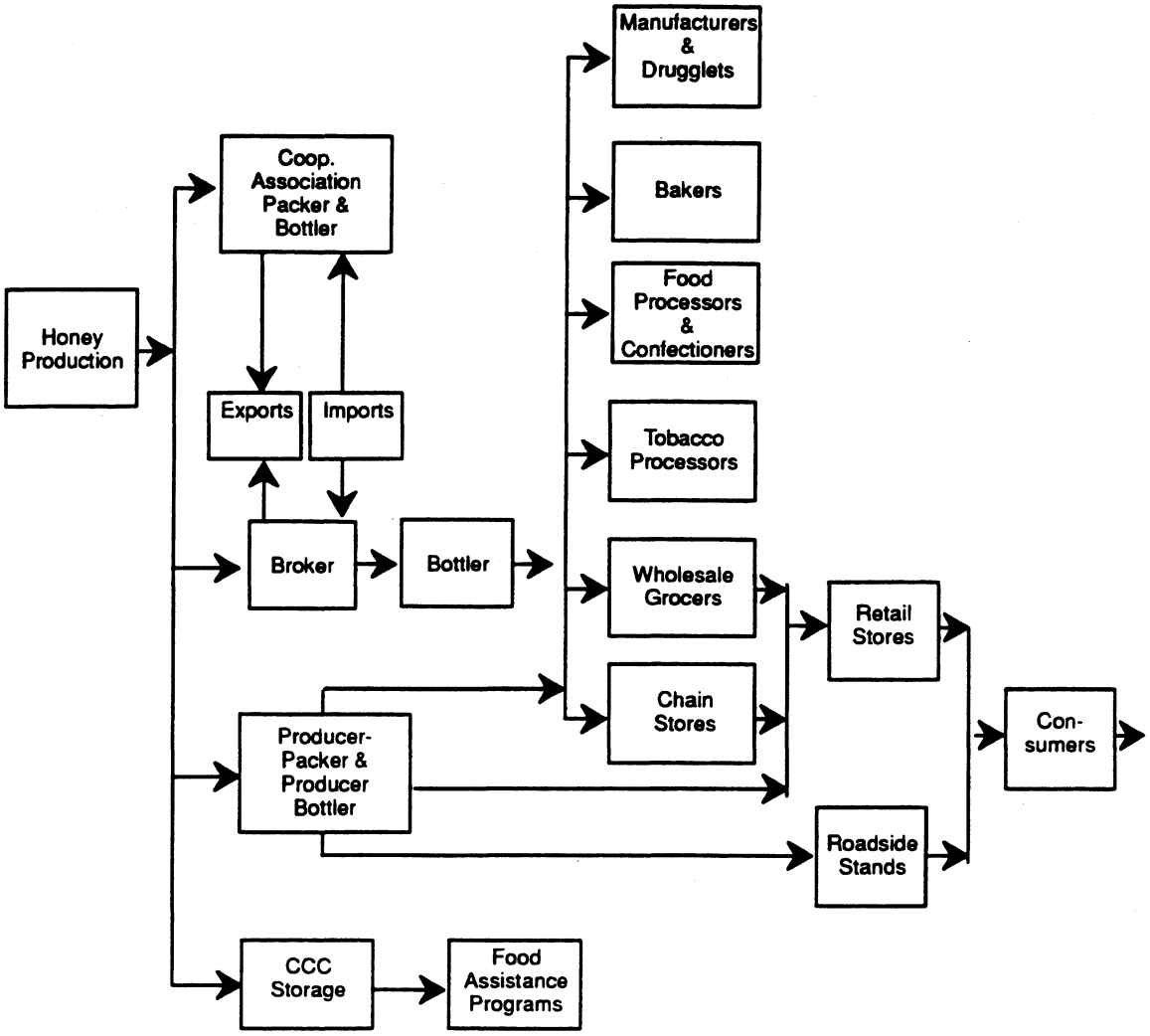
## Channels of Distribution

The channels of distribution for U.S.-produced and imported honey sold in the United States are shown in figure 9. Three types of firms process, pack, and market honey. Producer-packers are beekeepers that pack and process their own honey (although they may purchase small amounts from other beekeepers) and sell it directly to retail stores and industrial users or through roadside stands. Beekeepers may also be members of cooperatives that process, pack, and market honey. Sioux Honey Association, which markets honey under the Sue Bee label, is the largest such cooperative in the United States. These cooperatives may also purchase imported honey. Finally, independent packers process, pack, and market a large proportion of U.S.-produced honey and almost all imported honey, including that imported from China. Often these packers will blend U.S.-produced and imported honey for sales to end users. Packers may market their retail products under their own brand name or under private label brands.

Packers sell the processed, packed honey to retailers, food service operations, and industrial users. Industrial users include bakers, confectioners, and other food processors that purchase honey in barrels, tankers, or totes. At the retail level, honey is sold in glass jars, plastic containers (including those shaped as figures such as bears), foil containers, and tins. In general, lighter-colored honey is sold at the retail level for table use, whereas darker-colored honey is used more often by industrial users.

Data with respect to shipments of honey to the different segments of the U.S. market have been gathered by the Honey Board and through Commission questionnaires. Data compiled from the two sources on market segments are presented in tables 10 and 11.

Figure 9
Principal distribution channels for honey marketed in the United States




Source: Willett, L.S. "The U.S. Honey Industry: An Economic Analysis," Cornell Agr. Econ. Staff Paper, No. 88-1, Jan. 1988.

Table 10
Honey: Comparison of shipments by U.S. packers, by sources, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.--[1] 1992 | Jan.-Sept.--[1] 1993 |
|---|---|---|---|---|---|
| | Quantity (*1,000 of pounds*) | | | | |
| Retail: | | | | | |
| Questionnaires | 79,960 | 83,375 | 92,682 | 66,229 | 63,563 |
| Honey Board | 59,028 | 53,883 | 55,489 | 46,256 | 49,098 |
| Food service: | | | | | |
| Questionnaires | 28,734 | 28,929 | 30,694 | 23,909 | 24,585 |
| Honey Board | 17,362 | 20,830 | 25,545 | 17,033 | 19,116 |
| Industrial users:[2] | | | | | |
| Questionnaires | 87,085 | 94,420 | 104,848 | 79,231 | 88,220 |
| Honey Board | 69,754 | 77,819 | 93,193 | 40,774 | 42,460 |
| Total: | | | | | |
| Questionnaires | 195,779 | 208,724 | 228,224 | 169,369 | 178,168 |
| Honey Board | 146,144 | 152,532 | 174,227 | 104,061 | 110,674 |
| Domestic consumption | 299,800 | 292,000 | 298,500 | 215,832 | 213,446 |
| | Share of total (*percent*) | | | | |
| Retail: | | | | | |
| Questionnaires | 40.8 | 40.9 | 40.6 | 39.1 | 36.7 |
| Honey Board | 40.4 | 35.3 | 31.8 | 44.5 | 44.4 |
| Food service: | | | | | |
| Questionnaires | 14.7 | 13.9 | 13.4 | 14.1 | 13.8 |
| Honey Board | 11.9 | 13.7 | 14.7 | 16.4 | 17.3 |
| Industrial users:[2] | | | | | |
| Questionnaires | 44.5 | 45.2 | 45.9 | 46.8 | 49.5 |
| Honey Board | 47.7 | 51.0 | 53.5 | 39.2 | 38.4 |
| Share of domestic consumption: | | | | | |
| Questionnaires | 65.3 | 71.5 | 76.5 | 78.5 | 83.5 |
| Honey Board | 48.7 | 52.2 | 58.4 | 48.2 | 51.9 |

[1] Data from the Honey Board's Packer Survey during these periods are not comparable to calendar year data, as the research firms conducting the surveys and survey participants changed in 1992.

[2] Twelve of 22 firms that purchase imports of honey from China, accounting for 50.9 percent of total imports from China during 1992, reported that 74.7 percent of such imports were processed for industrial users in blends ranging from 7 to 100 percent Chinese content.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission, and from the National Honey Board's Packer Survey of various years.

Table 11
Honey: Shipments by U.S. packers, by markets, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 8,242 | 8,588 | 9,437 | 7,170 | 5,698 |
| Industrial users | 86,663 | 93,837 | 104,362 | 78,856 | 87,741 |
| Food service | 22,171 | 26,518 | 28,327 | 21,641 | 23,938 |
| Brokers and dealers | 2,283 | 2,279 | 2,693 | 1,917 | 1,809 |
| Grocers and retailers | 69,044 | 74,089 | 80,124 | 56,828 | 57,549 |
| Other U.S. markets | 6,712 | 2,551 | 2,576 | 2,380 | 884 |
| Total | 195,114 | 207,863 | 227,519 | 168,793 | 177,620 |
| | Value (*1,000 dollars*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 7,658 | 8,460 | 9,311 | 6,880 | 5,650 |
| Industrial users | 46,954 | 55,535 | 62,051 | 46,880 | 50,514 |
| Food service | 15,966 | 20,391 | 22,522 | 17,182 | 18,732 |
| Brokers and dealers | 1,124 | 1,431 | 1,471 | 1,096 | 1,046 |
| Grocers and retailers | 69,936 | 77,345 | 83,954 | 59,174 | 60,174 |
| Other U.S. markets | 5,297 | 2,302 | 2,476 | 2,180 | 1,110 |
| Total | 146,936 | 165,463 | 181,786 | 133,393 | 137,226 |
| | Unit value (*per pound*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | $0.93 | $0.99 | $0.99 | $0.96 | $0.99 |
| Industrial users | .54 | .59 | .59 | .59 | .58 |
| Food service | .72 | .77 | .80 | .79 | .78 |
| Brokers and dealers | .49 | .63 | .55 | .57 | .58 |
| Grocers and retailers | 1.01 | 1.04 | 1.05 | 1.04 | 1.05 |
| Other U.S. markets | .79 | .90 | .96 | .92 | 1.26 |
| Average | .75 | .80 | .80 | .79 | .77 |
| | Share of total shipments quantity (*percent*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 4.2 | 4.1 | 4.1 | 4.2 | 3.2 |
| Industrial users | 43.8 | 44.5 | 45.2 | 46.1 | 48.7 |
| Food service | 11.2 | 12.6 | 12.3 | 12.7 | 13.3 |
| Brokers and dealers | 1.2 | 1.1 | 1.2 | 1.1 | 1.0 |
| Grocers and retailers | 34.9 | 35.1 | 34.7 | 33.2 | 31.9 |
| Forfeited to CCC | 0 | 0 | 0 | 0 | 0 |
| Other U.S. markets | 3.4 | 1.2 | 1.1 | 1.4 | .5 |
| Subtotal | 98.6 | 98.5 | 98.6 | 98.7 | 98.5 |
| Exports: | | | | | |
| Bulk | .4 | .5 | .4 | .5 | .7 |
| Packaged | 1.0 | 1.1 | 1.0 | .9 | .8 |
| Subtotal | 1.4 | 1.5 | 1.4 | 1.3 | 1.5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Note.--Unit values are calculated from the unrounded figures, using data of firms supplying both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

## CONSIDERATION OF ALLEGED MATERIAL INJURY TO AN INDUSTRY IN THE UNITED STATES

In an effort to supplement secondary source information available from the USDA on the U.S. honey industry, the Commission sent questionnaires to approximately 900 firms, as follows:

| Category | Universe-- Number[1] | Share[2] | Sample number |
|---|---|---|---|
| Producer & producer/packer: | | | |
| >100,000 lbs. production | 524 | 57.7 | 524 |
| ≥26,000 ≤ 100,000 lbs. production | 926 | 22.5 | 92[3] |
| <26,000 lbs. production | 3,268 | 9.0 | 108[3] |
| Exempt (<6,000 lbs. production) | 149[4] | 10.8 | 25[3] |
| Subtotal | 4,867 | 100.0 | 749 |
| Packers: | | | |
| Honey Board estimate of largest volume packers | 38 | (5) | 38 |
| Smaller | 405 | (5) | 50[3] |
| Subtotal | 443 | (5) | 88 |
| Importer/brokers | 208 | 100.0 | 42[6] |
| Total | 5,518 | | 879 |

[1] Based on listings of firms provided by the National Honey Board for 1992, which was supplemented by listings from other associations and Customs.

[2] Share of total U.S. production or imports in 1992.

[3] Based on a stratified random sample.

[4] The number of "exempt" producers reflects only those producers which applied for and received exemption from the honey assessment.

[5] Not available.

[6] Based on Honey Board estimate of the largest volume packers and information provided in the Customs Net Import File for imports of honey from China.

Questionnaire responses were received from approximately 300 producers and producer/packers accounting for approximately 30 percent of U.S. honey production in 1992. Their useable data relating to production, shipments, inventories, and employment are presented in appendix E.

Questionnaire responses were received from 40 packers of honey, accounting for approximately 75 percent of domestic disposition of honey in 1992. Their data are presented throughout the report, with additional questionnaire data presented in appendix E.

## U.S. Production, Capacity, and Capacity Utilization

### U.S. Beekeepers' Colonies, Production, and Yield

U.S. production of honey varies widely among regions and from year to year depending on rainfall, soil conditions, temperature, cropping patterns, management, and various other environmental factors. Cold and rainy weather can prevent bees from collecting nectar, which reduces honey production. Rain, drought, or freezing temperatures can also cut honey production by damaging nectar sources.[63]

Table 12 and figure 10 present data on U.S. beekeepers' colonies, production, and yield for 1989 to 1992. The number of colonies operated for honey production in the United States increased by 7.4 percent from 1986 to 1989, but has since decreased by 12.0 percent to approximately 3 million colonies in 1992. More than one-third of all colonies in the United States are located in California, North Dakota, South Dakota, and Florida.

Nonetheless, due to contrary patterns in yield per colony, honey production declined from 1986 to 1989, and increased from 1989 to 1992. USDA has attributed the decline in 1989 production to adverse weather conditions. Despite the recent decline in colony numbers, the increasing annual yields of honey per colony (owing to more favorable weather conditions and technological improvements) have allowed U.S. production to increase.

In recent periods, production of honey increased from 197.8 million pounds in 1990 to 220.6 million pounds in 1992, or by 11.5 percent. Honey production for 1993 has been forecast by USDA to decrease to 198.4 million pounds, or by 10 percent from 1992, principally due to summer flooding in the Midwestern States.[64]

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[63] The U.S. Beekeeping Industry, ERS, USDA, Aug. 1993, p. 6.

[64] The forecasted decrease in production has been challenged by the Sioux Honey Association, the largest U.S. honey packer. The president of Sioux Honey reports that "The midwest floods had no significant effect on honey production since the flooding occurred in areas that are not honey producing areas. The net effect of the heavy and consistent rains in the midwest was an overall increase in honey production." (See posthearing brief of the American Beekeeping Federation and the U.S. Honey Producers Association, exh. 2).

Table 12
Honey: U.S. production, number of colonies, yield per colony, value of production, and average farm price per pound, by regions and states, 1989-92 1/

| Region and State | Production-- | | | | Colonies-- | | | | Yield per colony-- | | | | Value of production-- | | | | Average price per pound-- | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 |
| | (1,000 pounds) | | | | (1,000) | | | | (Pounds) | | | | (1,000 dollars) | | | | | | | |
| 1 Connecticut | 80 | 104 | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | 40 | 52 | 2/ | 2/ | 84 | 135 | 2/ | 2/ | $1.05 | $1.30 | 2/ | 2/ |
| 1 Maine | 408 | 480 | 546 | 330 | 17 | 20 | 13 | 15 | 24 | 24 | 42 | 22 | 314 | 307 | 377 | 251 | .77 | .64 | $0.69 | $0.76 |
| 1 Massachusetts | 184 | 195 | 2/ | 2/ | 8 | 15 | 2/ | 2/ | 23 | 13 | 2/ | 2/ | 256 | 252 | 2/ | 2/ | 1.39 | 1.29 | 2/ | 2/ |
| 1 New Hampshire | 35 | 54 | 2/ | 2/ | 1 | 1 | 2/ | 2/ | 35 | 54 | 2/ | 2/ | 50 | 46 | 2/ | 2/ | 1.43 | .85 | 2/ | 2/ |
| 1 New Jersey | 575 | 315 | 341 | 176 | 25 | 15 | 11 | 8 | 23 | 21 | 31 | 22 | 397 | 284 | 314 | 169 | .69 | .90 | .92 | .96 |
| 1 New York | 5,546 | 4,374 | 4,774 | 4,620 | 94 | 81 | 77 | 70 | 59 | 54 | 62 | 66 | 3,050 | 2,843 | 2,960 | 3,003 | .55 | .65 | .62 | .65 |
| 1 Pennsylvania | 1,599 | 1,148 | 1,800 | 1,230 | 41 | 41 | 40 | 30 | 39 | 28 | 45 | 41 | 991 | 769 | 1,260 | 873 | .62 | .67 | .70 | .71 |
| 1 Rhode Island | 39 | 31 | 2/ | 2/ | 1 | 1 | 2/ | 2/ | 39 | 31 | 2/ | 2/ | 54 | 32 | 2/ | 2/ | 1.39 | 1.03 | 2/ | 2/ |
| 1 Vermont | 366 | 390 | 450 | 378 | 6 | 6 | 6 | 6 | 61 | 65 | 75 | 63 | 271 | 335 | 360 | 325 | .74 | .86 | .80 | .86 |
| Subtotal | 8,832 | 7,091 | 7,911 | 6,734 | 195 | 182 | 147 | 129 | 45 | 39 | 54 | 52 | 5,467 | 5,003 | 5,271 | 4,621 | .62 | .71 | .67 | .69 |
| 2 Delaware | 10 | 11 | 2/ | 2/ | 1 | 1 | 2/ | 2/ | 10 | 11 | 2/ | 2/ | 10 | 14 | 2/ | 2/ | 1.00 | 1.27 | 2/ | 2/ |
| 2 Kentucky | 348 | 352 | 175 | 120 | 12 | 8 | 7 | 4 | 29 | 44 | 25 | 30 | 376 | 324 | 168 | 100 | 1.08 | .92 | .96 | .83 |
| 2 Maryland | 144 | 133 | 175 | 138 | 9 | 7 | 7 | 6 | 16 | 19 | 25 | 23 | 111 | 120 | 196 | 121 | .77 | .90 | .12 | .88 |
| 2 N. Carolina | 950 | 1,000 | 1,044 | 675 | 25 | 20 | 18 | 15 | 38 | 50 | 58 | 45 | 608 | 710 | 689 | 527 | .64 | .71 | .60 | .78 |
| 2 Tennessee | 625 | 627 | 532 | 301 | 25 | 19 | 14 | 7 | 25 | 33 | 38 | 43 | 463 | 621 | 367 | 211 | .74 | .99 | .69 | .70 |
| 2 Virginia | 460 | 544 | 528 | 494 | 23 | 16 | 16 | 13 | 20 | 34 | 33 | 38 | 248 | 517 | 380 | 366 | .54 | .95 | .72 | .74 |
| 2 West Virginia | 1,408 | 900 | 624 | 1,265 | 32 | 30 | 26 | 23 | 44 | 30 | 24 | 55 | 1,084 | 801 | 543 | 1,025 | .77 | .89 | .87 | .81 |
| Subtotal | 3,945 | 3,567 | 3,078 | 2,993 | 127 | 101 | 88 | 68 | 31 | 35 | 35 | 44 | 2,900 | 3,107 | 2,343 | 2,350 | .74 | .87 | .76 | .79 |
| 3 Alabama | 820 | 1,102 | 552 | 1,025 | 41 | 29 | 23 | 25 | 20 | 38 | 24 | 41 | 443 | 606 | 348 | 625 | .54 | .55 | .63 | .61 |
| 3 Florida | 15,000 | 20,900 | 18,675 | 22,880 | 250 | 220 | 225 | 220 | 60 | 95 | 83 | 104 | 7,200 | 10,032 | 9,898 | 12,126 | .48 | .48 | .53 | .53 |
| 3 Georgia | 3,132 | 5,550 | 4,284 | 4,675 | 116 | 111 | 102 | 85 | 27 | 50 | 42 | 55 | 1,754 | 3,275 | 2,699 | 3,086 | .56 | .59 | .63 | .66 |
| 3 Mississippi | 792 | 1,488 | 1,008 | 1,625 | 24 | 24 | 28 | 25 | 33 | 62 | 36 | 65 | 348 | 744 | 524 | 829 | .44 | .50 | .52 | .51 |
| 3 S. Carolina | 285 | 492 | 671 | 759 | 15 | 12 | 11 | 11 | 19 | 41 | 61 | 69 | 191 | 339 | 517 | 584 | .67 | .69 | .77 | .77 |
| Subtotal | 20,029 | 29,532 | 25,190 | 30,964 | 446 | 396 | 389 | 366 | 45 | 75 | 65 | 85 | 9,936 | 14,996 | 13,986 | 17,250 | .50 | .51 | .56 | .56 |
| 4 Illinois | 1,102 | 920 | 1,092 | 848 | 29 | 23 | 21 | 16 | 38 | 40 | 52 | 53 | 860 | 672 | 863 | 755 | .78 | .73 | .79 | .89 |
| 4 Indiana | 980 | 1,034 | 1,050 | 465 | 28 | 22 | 21 | 15 | 35 | 47 | 50 | 31 | 706 | 755 | 714 | 326 | .72 | .73 | .68 | .70 |
| 4 Michigan | 7,140 | 8,000 | 7,665 | 6,460 | 102 | 100 | 105 | 95 | 70 | 80 | 73 | 68 | 3,998 | 4,480 | 4,369 | 3,811 | .56 | .56 | .57 | .59 |
| 4 Ohio | 1,060 | 2,142 | 2,928 | 1,419 | 53 | 42 | 48 | 43 | 20 | 51 | 61 | 33 | 710 | 1,692 | 1,845 | 851 | .67 | .79 | .63 | .60 |
| 4 Wisconsin | 7,992 | 8,400 | 7,370 | 6,930 | 108 | 112 | 110 | 105 | 74 | 75 | 67 | 66 | 4,555 | 4,788 | 4,127 | 4,089 | .57 | .57 | .56 | .59 |
| Subtotal | 18,274 | 20,496 | 20,105 | 16,122 | 320 | 299 | 305 | 274 | 57 | 69 | 66 | 59 | 10,829 | 12,387 | 11,918 | 9,832 | .59 | .60 | .59 | .61 |
| 5 Iowa | 6,030 | 3,780 | 4,130 | 4,030 | 67 | 70 | 70 | 65 | 90 | 54 | 59 | 62 | 2,714 | 2,003 | 2,354 | 2,257 | .45 | .53 | .57 | .56 |
| 5 Kansas | 1,702 | 2,412 | 1,820 | 1,624 | 37 | 36 | 35 | 28 | 46 | 67 | 52 | 58 | 817 | 1,447 | 1,092 | 958 | .48 | .60 | .60 | .59 |
| 5 Minnesota | 15,180 | 12,580 | 16,380 | 17,100 | 165 | 170 | 180 | 190 | 92 | 74 | 91 | 90 | 6,831 | 6,164 | 8,845 | 9,405 | .45 | .49 | .54 | .55 |
| 5 Missouri | 2,046 | 1,890 | 1,820 | 1,925 | 33 | 30 | 86 | 87 | 62 | 63 | 21 | 22 | 1,146 | 1,077 | 1,128 | 1,232 | .56 | .57 | .62 | .64 |
| 5 Nebraska | 7,378 | 6,608 | 7,236 | 7,200 | 119 | 118 | 108 | 96 | 62 | 56 | 67 | 75 | 3,394 | 3,238 | 3,835 | 3,816 | .46 | .49 | .53 | .53 |
| 5 North Dakota | 16,240 | 17,220 | 22,145 | 21,840 | 290 | 210 | 215 | 240 | 56 | 82 | 103 | 91 | 7,633 | 8,954 | 11,958 | 11,575 | .47 | .52 | .54 | .53 |
| 5 South Dakota | 11,270 | 19,845 | 22,725 | 20,400 | 230 | 245 | 225 | 240 | 49 | 81 | 101 | 85 | 5,184 | 9,923 | 12,272 | 11,016 | .46 | .50 | .54 | .54 |
| Subtotal | 59,846 | 64,335 | 76,256 | 74,119 | 941 | 879 | 919 | 946 | 64 | 73 | 83 | 78 | 27,719 | 32,806 | 41,484 | 40,259 | .46 | .51 | .54 | .54 |
| 6 Arizona | 3,510 | 3,216 | 3,750 | 3,780 | 78 | 67 | 75 | 70 | 45 | 48 | 50 | 54 | 1,931 | 1,576 | 1,988 | 1,966 | .55 | .49 | .53 | .52 |
| 6 Arkansas | 2,074 | 3,528 | 3,713 | 2,925 | 34 | 42 | 47 | 45 | 61 | 84 | 79 | 65 | 975 | 1,729 | 2,005 | 1,580 | .47 | .49 | .54 | .54 |
| 6 Louisiana | 2,975 | 3,382 | 2,800 | 4,815 | 35 | 38 | 40 | 45 | 85 | 89 | 70 | 107 | 1,398 | 1,792 | 1,484 | 2,408 | .47 | .53 | .53 | .50 |
| 6 New Mexico | 1,150 | 2,059 | 1,540 | 1,224 | 23 | 29 | 20 | 18 | 50 | 71 | 77 | 68 | 621 | 1,091 | 862 | 685 | .54 | .53 | .56 | .56 |
| 6 Oklahoma | 585 | 450 | 630 | 468 | 9 | 9 | 9 | 9 | 65 | 50 | 70 | 52 | 509 | 351 | 536 | 318 | .87 | .78 | .85 | .67 |
| 6 Texas | 7,840 | 9,380 | 10,920 | 10,625 | 140 | 140 | 140 | 125 | 56 | 67 | 78 | 85 | 3,842 | 5,534 | 5,897 | 5,738 | .49 | .59 | .54 | .54 |
| Subtotal | 18,134 | 22,015 | 23,353 | 23,837 | 319 | 325 | 331 | 312 | 57 | 68 | 71 | 76 | 9,276 | 12,073 | 12,772 | 12,695 | .51 | .55 | .55 | .53 |

See footnotes at end of table.

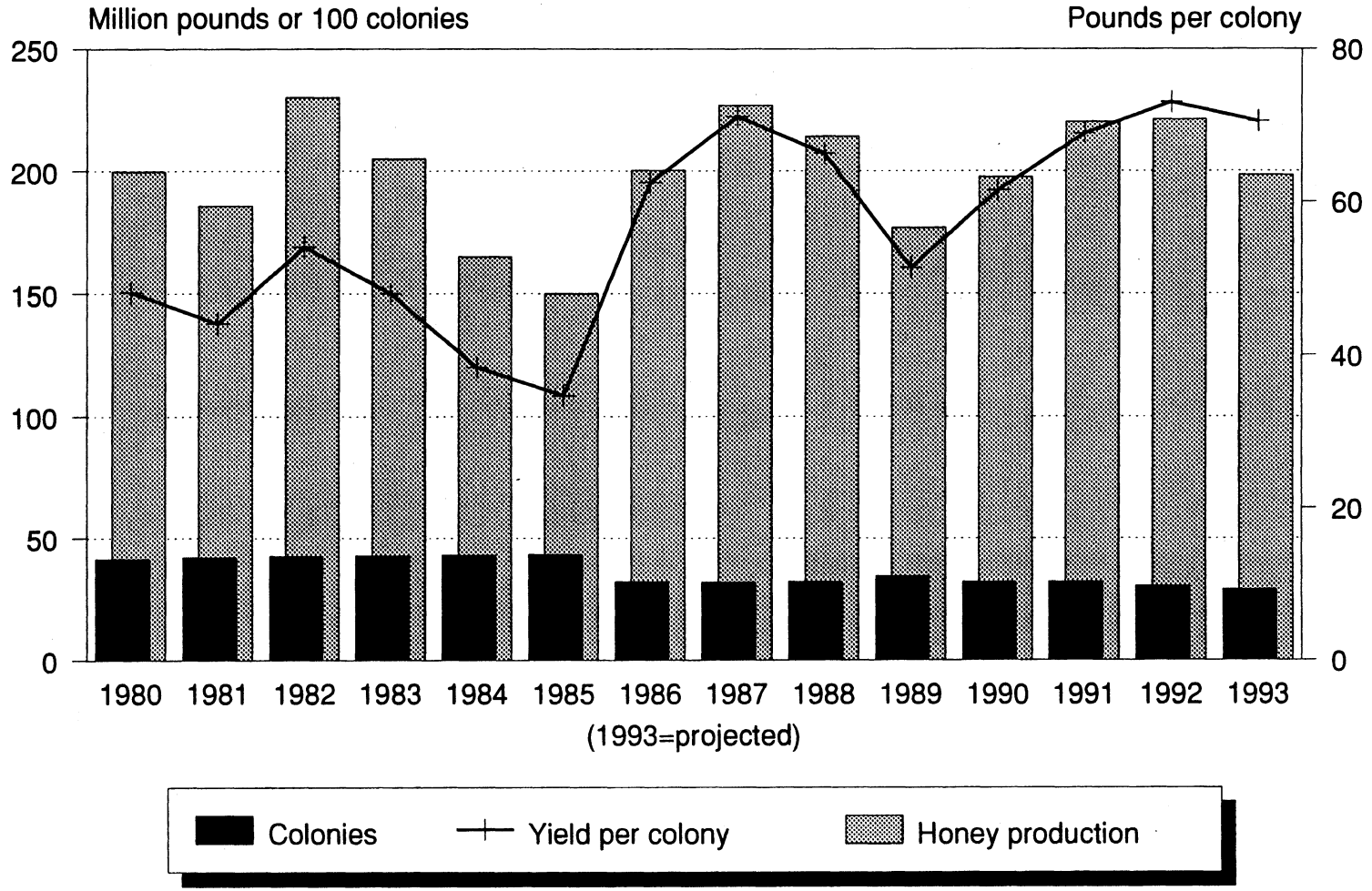
Table 12--Continued
Honey: U.S. production, number of colonies, yield per colony, value of production, and average farm price per pound, by regions, 1989-92 1/

| Region and State | Production-- | | | | Colonies-- | | | | Yield per colony-- | | | | Value of production-- | | | | Average price per pound-- | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 | 1989 | 1990 | 1991 | 1992 |
| | (1,000 pounds) | | | | (1,000) | | | | (Pounds) | | | | (1,000 dollars) | | | | | | | |
| 7 Colorado | 3,300 | 3,520 | 3,950 | 3,848 | 50 | 55 | 50 | 52 | 66 | 64 | 79 | 74 | 1,782 | 2,323 | 2,489 | 2,424 | $0.54 | $0.66 | $0.63 | $0.63 |
| 7 Idaho | 7,560 | 5,600 | 6,440 | 6,885 | 140 | 140 | 140 | 135 | 54 | 40 | 46 | 51 | 3,478 | 2,688 | 3,478 | 3,649 | .46 | .48 | .54 | .53 |
| 7 Montana | 6,300 | 7,938 | 7,912 | 9,570 | 100 | 98 | 28 | 25 | 63 | 81 | 283 | 383 | 2,961 | 4,287 | 4,510 | 5,455 | .47 | .54 | .57 | .57 |
| 7 Nevada | 810 | 986 | 810 | 975 | 15 | 17 | 15 | 15 | 54 | 58 | 54 | 65 | 405 | 710 | 632 | 829 | .50 | .72 | .78 | .85 |
| 7 Utah | 2,068 | 1,739 | 1,530 | 2,632 | 47 | 47 | 45 | 47 | 44 | 37 | 34 | 56 | 1,117 | 874 | 842 | 1,553 | .54 | .50 | .55 | .59 |
| 7 Wyoming | 1,927 | 2,280 | 2,132 | 2,870 | 41 | 40 | 41 | 41 | 47 | 57 | 52 | 70 | 944 | 1,186 | 1,173 | 1,579 | .49 | .52 | .55 | .55 |
| Subtotal | 21,965 | 22,063 | 22,774 | 26,780 | 393 | 397 | 319 | 315 | 56 | 56 | 71 | 85 | 10,687 | 12,068 | 13,124 | 15,489 | .49 | .55 | .58 | .58 |
| 8 California | 19,040 | 20,160 | 32,760 | 31,490 | 560 | 480 | 520 | 470 | 34 | 42 | 63 | 67 | 9,330 | 10,886 | 17,690 | 17,005 | .49 | .54 | .54 | .54 |
| 8 Oregon | 2,457 | 2,562 | 2,576 | 2,548 | 63 | 61 | 56 | 52 | 39 | 42 | 46 | 49 | 1,278 | 1,383 | 1,443 | 1,580 | .52 | .54 | .56 | .62 |
| 8 Washington | 3,220 | 4,400 | 3,570 | 3,520 | 70 | 80 | 85 | 80 | 46 | 55 | 42 | 44 | 1,449 | 2,200 | 2,035 | 2,042 | .45 | .50 | .57 | .58 |
| Subtotal | 24,717 | 27,122 | 38,906 | 37,558 | 693 | 621 | 661 | 602 | 36 | 44 | 59 | 62 | 12,057 | 14,469 | 21,168 | 20,627 | .49 | .53 | .54 | .55 |
| Other | 1,215 | 1,570 | 1,562 | 1,476 | 9 | 10 | 22 | 18 | 135 | 157 | 71 | 82 | 547 | 738 | 1,044 | 928 | .45 | .47 | .67 | .63 |
| Total | 176,957 | 197,791 | 219,135 | 220,583 | 3,443 | 3,210 | 3,181 | 3,030 | 51 | 62 | 69 | 73 | 89,418 | 107,647 | 123,110 | 124,051 | .51 | .54 | .56 | .56 |
| Region totals: | | | | | | | | | | | | | | | | | | | | |
| 1..... | 8,832 | 7,091 | 7,911 | 6,734 | 195 | 182 | 147 | 129 | 45 | 39 | 54 | 52 | 5,467 | 5,003 | 5,271 | 4,621 | .62 | .71 | .67 | .69 |
| 2..... | 3,945 | 3,567 | 3,078 | 2,993 | 127 | 101 | 88 | 68 | 31 | 35 | 35 | 44 | 2,900 | 3,107 | 2,343 | 2,350 | .74 | .87 | .76 | .79 |
| 3..... | 20,029 | 29,532 | 25,190 | 30,964 | 446 | 396 | 389 | 366 | 45 | 75 | 65 | 85 | 9,936 | 14,996 | 13,986 | 17,250 | .50 | .51 | .56 | .56 |
| 4..... | 18,274 | 20,496 | 20,105 | 16,122 | 320 | 299 | 305 | 274 | 57 | 69 | 66 | 59 | 10,829 | 12,387 | 11,918 | 9,832 | .59 | .60 | .59 | .61 |
| 5..... | 59,846 | 64,335 | 76,256 | 74,119 | 941 | 879 | 919 | 946 | 64 | 73 | 83 | 78 | 27,719 | 32,806 | 41,484 | 40,259 | .46 | .51 | .54 | .54 |
| 6..... | 18,134 | 22,015 | 23,353 | 23,837 | 319 | 325 | 331 | 312 | 57 | 68 | 71 | 76 | 9,276 | 12,073 | 12,772 | 12,695 | .51 | .55 | .55 | .53 |
| 7..... | 21,965 | 22,063 | 22,774 | 26,780 | 393 | 397 | 319 | 315 | 56 | 56 | 71 | 85 | 10,687 | 12,068 | 13,124 | 15,489 | .49 | .55 | .58 | .58 |
| 8..... | 24,717 | 27,122 | 38,906 | 37,558 | 693 | 621 | 661 | 602 | 36 | 44 | 59 | 62 | 12,057 | 14,469 | 21,168 | 20,627 | .49 | .53 | .54 | .55 |
| Other..... | 1,215 | 1,570 | 1,562 | 1,476 | 9 | 10 | 22 | 18 | 135 | 157 | 71 | 82 | 547 | 738 | 1,044 | 928 | .45 | .47 | .67 | .63 |
| Total..... | 176,957 | 197,791 | 219,135 | 220,583 | 3,443 | 3,210 | 3,181 | 3,030 | 51 | 62 | 69 | 73 | 89,418 | 107,647 | 123,110 | 124,051 | .51 | .54 | .56 | .56 |

1/ Data based on beekeepers with 5 or more colonies.
2/ Not reported separately to avoid disclosing data for individual operations.

Source: NASS, USDA.

Figure 10: U.S. production, number of colonies, and yield of honey per colony, 1980-93




Source: USDA and table 12.

## U.S. Packers' Capacity, Production, and Capacity Utilization

Data from the Commission's packer's questionnaire regarding capacity, production and capacity utilization are presented in table 13.

Table 13
Honey: U.S.packers' capacity, production, and capacity utilization, by products, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Average-of-period capacity (*1,000 pounds*) | | | | |
| Honey | 304,987 | 319,206 | 335,744 | 262,082 | 243,715 |
| | Packing/bottling (*1,000 pounds*) | | | | |
| Natural honey | 178,049 | 193,023 | 212,701 | 156,109 | 159,720 |
| Mixtures of natural honey and artificial honey | *** | *** | *** | *** | *** |
| Preparations of natural honey | *** | *** | *** | *** | *** |
| Total | *** | *** | *** | *** | *** |
| | Capacity utilization (*percent*) | | | | |
| Honey | 59.2 | 61.3 | 64.1 | 60.3 | 66.4 |

Note.--Capacity utilization is calculated from unrounded figures, using data of firms providing both capacity and production information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

## U.S. Exports

Data on U.S. exports of honey are presented in table 14. Exports decreased irregularly from 1989 to 1991 and then increased to 10.4 million pounds or 5.6 percent of U.S. production in 1992. Principal export markets are Yemen, Saudi Arabia, and Japan.

In its 1993 application for Market Promotion Program funds, the National Honey Board outlined trading practices in other countries that adversely affect U.S. honey exports, and included the following:[65]

> Standards of testing.--"The world standard for honey quality on the export market is the CODEX ALIMENTARIUS. But, according to U.S. honey exporters, this standard is often not followed by honey buyers around the world, who tighten specifications on hydroxymethylfurfural (HMF) temperate regions such as the United States and Central America--outside of Northern Europe. Over the past four years at least $500,000 in damages have resulted from rejected containers of honey in Middle Eastern ports where rigid HMF standards are also arbitrarily enforced to block the entry of honeys from certain origins. In addition, some countries require certificates (fido-sanitary certificates, bee inspector's certificates, certificates of health and origin) stating that the honey being imported is free from chemicals and stating specific conditions as to where the honey is located."
>
> Non-automatic import licensing.--"Several honey import nations refuse to accept U.S. honey self certification of certain quality standards. All exports to ECC countries must meet the European Codex Standards for honey, specifically honey must meet certain diastase enzyme levels and HMF contents. France and Germany also require pollen count testing. In addition, the French require honey quality or association stamps issued by the French industry on any imported product. This has caused much confusion with the U.S. honey exporters, and has caused several to totally drop out of the French market."
>
> Lost markets.--"USA honey is currently prohibited totally from The Republic of Korea. South Korea currently publishes a 20% duty on incoming honey, but will not allow the importation of honey into the country under the rules of the National Livestock Cooperative Federation. This restriction is reportedly imposed by the government to protect the small domestic industry."
>
> Other restricted markets.--"Peru, Tunisia, India and Italy totally prohibit honey imports. Tunisia and India are both honey consuming nations of note, and according to U.S. Agricultural Trade Offices in the regions, there would be significant possibilities for sales of USA monofloral honeys to the upper class gift trade."

[65] 1993 application for MPP funds from the National Honey Board, pp. 11-13.

Table 14
Honey: U.S. exports, by types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | | |
| Packaged for retail: | | | | | | |
| Yemen | 96 | 473 | 727 | 1,554 | 1,171 | 511 |
| Saudi Arabia | 1,202 | 1,423 | 1,156 | 860 | 572 | 769 |
| Japan | 104 | 689 | 17 | 202 | 42 | 324 |
| China | 0 | 0 | 0 | 0 | 0 | 0 |
| Canada | 93 | 0 | 0 | 0 | 0 | 0 |
| All other | 1,125 | 2,158 | 1,630 | 2,330 | 1,563 | 1,237 |
| Total | 2,619 | 4,743 | 3,530 | 4,947 | 3,349 | 2,841 |
| Bulk: | | | | | | |
| Yemen | 332 | 198 | 268 | 260 | 259 | 299 |
| Saudi Arabia | 1,350 | 958 | 1,233 | 639 | 434 | 108 |
| Japan | 870 | 764 | 483 | 823 | 786 | 134 |
| China | 0 | 0 | 15 | 995 | 995 | 104 |
| Canada | 557 | 852 | 915 | 977 | 773 | 566 |
| All other | 4,221 | 4,915 | 3,116 | 1,785 | 1,295 | 2,325 |
| Total | 7,330 | 7,688 | 6,030 | 5,478 | 4,542 | 3,536 |
| Total exports: | | | | | | |
| Yemen | 427 | 672 | 996 | 1,813 | 1,430 | 810 |
| Saudi Arabia | 2,552 | 2,381 | 2,389 | 1,499 | 1,006 | 877 |
| Japan | 974 | 1,453 | 500 | 1,025 | 828 | 458 |
| China | 0 | 0 | 15 | 995 | 995 | 104 |
| Canada | 650 | 852 | 915 | 977 | 773 | 566 |
| All other | 5,346 | 7,073 | 4,745 | 4,116 | 2,858 | 3,562 |
| Total | 9,949 | 12,431 | 9,560 | 10,425 | 7,891 | 6,377 |
| | Value (*1,000 dollars; value at port*) | | | | | |
| Packaged for retail: | | | | | | |
| Yemen | 43 | 220 | 502 | 961 | 721 | 467 |
| Saudi Arabia | 805 | 717 | 862 | 765 | 514 | 546 |
| Japan | 102 | 276 | 15 | 165 | 42 | 244 |
| China | 0 | 0 | 0 | 0 | 0 | 0 |
| Canada | 55 | 0 | 0 | 0 | 0 | 0 |
| All other | 761 | 1,477 | 1,325 | 1,750 | 1,105 | 913 |
| Total | 1,767 | 2,689 | 2,704 | 3,640 | 2,383 | 2,170 |
| Bulk: | | | | | | |
| Yemen | 169 | 66 | 220 | 189 | 189 | 155 |
| Saudi Arabia | 1,042 | 662 | 812 | 525 | 391 | 104 |
| Japan | 415 | 387 | 344 | 378 | 359 | 54 |
| China | 0 | 0 | 11 | 405 | 405 | 38 |
| Canada | 339 | 636 | 620 | 691 | 556 | 382 |
| All other | 2,601 | 2,668 | 2,100 | 1,326 | 986 | 1,491 |
| Total | 4,567 | 4,420 | 4,106 | 3,515 | 2,886 | 2,225 |
| Total exports: | | | | | | |
| Yemen | 212 | 286 | 721 | 1,150 | 911 | 622 |
| Saudi Arabia | 1,847 | 1,379 | 1,674 | 1,290 | 905 | 650 |
| Japan | 518 | 663 | 359 | 543 | 401 | 299 |
| China | 0 | 0 | 11 | 405 | 405 | 38 |
| Canada | 394 | 636 | 620 | 691 | 556 | 382 |
| All other | 3,362 | 4,145 | 3,424 | 3,076 | 2,091 | 2,404 |
| Total | 6,334 | 7,109 | 6,810 | 7,155 | 5,269 | 4,395 |

Continued on next page.

Table 14--Continued
Honey: U.S. exports, by types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Unit value (per pound) | | | | | |
| Packaged for retail: | | | | | | |
| Yemen | $0.451 | $0.464 | $0.690 | $0.618 | $0.616 | $0.914 |
| Saudi Arabia | .670 | .504 | .746 | .889 | .899 | .709 |
| Japan | .985 | .400 | .884 | .814 | 1.003 | .754 |
| China | - | - | - | - | - | - |
| Canada | .595 | - | - | - | - | - |
| All other | .677 | .684 | .813 | .751 | .707 | .738 |
| Average | .675 | .567 | .766 | .736 | .712 | .764 |
| Bulk: | | | | | | |
| Yemen | .510 | .333 | .818 | .730 | .730 | .520 |
| Saudi Arabia | .772 | .691 | .658 | .821 | .900 | .968 |
| Japan | .477 | .506 | .714 | .460 | .457 | .407 |
| China | - | - | .750 | .407 | .407 | .360 |
| Canada | .608 | .746 | .677 | .708 | .719 | .675 |
| All other | .616 | .543 | .674 | .743 | .761 | .641 |
| Average | .623 | .575 | .681 | .642 | .635 | .629 |
| Total exports: | | | | | | |
| Yemen | .497 | .425 | .724 | .634 | .637 | .768 |
| Saudi Arabia | .724 | .579 | .701 | .860 | .899 | .741 |
| Japan | .531 | .456 | .719 | .530 | .485 | .652 |
| China | - | - | .750 | .407 | .407 | .360 |
| Canada | .606 | .746 | .677 | .708 | .719 | .675 |
| All other | .629 | .586 | .722 | .747 | .732 | .675 |
| Average | .637 | .572 | .712 | .686 | .668 | .689 |
| | Share of total quantity (*percent*) | | | | | |
| Packaged for retail: | | | | | | |
| Yemen | 22.4 | 70.5 | 73.1 | 85.7 | 81.9 | 63.1 |
| Saudi Arabia | 47.1 | 59.7 | 48.4 | 57.4 | 56.9 | 87.7 |
| Japan | 10.6 | 47.4 | 3.4 | 19.7 | 5.1 | 70.8 |
| China | - | - | - | - | - | - |
| Canada | 14.3 | - | - | - | - | - |
| All other | 21.0 | 30.5 | 34.3 | 56.6 | 54.7 | 34.7 |
| Average | 26.3 | 38.2 | 36.9 | 47.5 | 42.4 | 44.6 |
| Bulk: | | | | | | |
| Yemen | 77.6 | 29.5 | 26.9 | 14.3 | 18.1 | 36.9 |
| Saudi Arabia | 52.9 | 40.3 | 51.6 | 42.6 | 43.1 | 12.3 |
| Japan | 89.4 | 52.6 | 96.6 | 80.3 | 94.9 | 29.2 |
| China | - | - | 100.0 | 100.0 | 100.0 | 100.0 |
| Canada | 85.7 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| All other | 79.0 | 69.5 | 65.7 | 43.4 | 45.3 | 65.3 |
| Average | 73.7 | 61.8 | 63.1 | 52.5 | 57.6 | 55.4 |
| Total exports: | | | | | | |
| Yemen | 4.3 | 5.4 | 10.4 | 17.4 | 18.1 | 12.7 |
| Saudi Arabia | 25.6 | 19.2 | 25.0 | 14.4 | 12.8 | 13.7 |
| Japan | 9.8 | 11.7 | 5.2 | 9.8 | 10.5 | 7.2 |
| China | - | - | 0.2 | 9.5 | 12.6 | 1.6 |
| Canada | 6.5 | 6.9 | 9.6 | 9.4 | 9.8 | 8.9 |
| All other | 53.7 | 56.9 | 49.6 | 39.5 | 36.2 | 55.9 |
| Average | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Compiled from official statistics of the U.S. Department of Commerce.

## U.S. Inventories

Data on ending inventories of U.S.-produced honey (including Government and commercial stocks) compiled by the USDA show declining trends in inventories from 1986 to 1990, and then increases from 1991 to 1993. These data are presented in the following tabulation (in millions of pounds, except as noted):

| Year | Total Inventories | Production | Inventories as a share of production |
|---|---|---|---|
| | | | *Percent* |
| 1986 | 233.8 | 200.4 | 116.7 |
| 1987 | 175.3 | 226.8 | 77.3 |
| 1988 | 155.7 | 214.1 | 72.7 |
| 1989 | 115.2 | 177.0 | 65.1 |
| 1990 | 77.8 | 197.8 | 39.3 |
| 1991 | 87.6 | 219.2 | 40.0 |
| 1992 | 113.9 | 220.6 | 51.6 |
| 1993 | 131.0 | 198.4 | 66.0 |

Data on U.S. inventories held by packers, as provided in response to the Commission's questionnaires, are presented in table 15.

Table 15
Honey: End-of-period inventories of U.S. packers, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | |
| Stocks | 28,512 | 32,701 | 37,179 | 28,692 | 34,060 |
| Packaged | 11,347 | 11,080 | 13,014 | 11,103 | 10,861 |
| Total | 39,858 | 43,782 | 50,193 | 39,795 | 44,920 |
| | Ratio to production (*percent*) | | | | |
| Stocks | 16.5 | 17.3 | 18.0 | 17.0 | 19.9 |
| Packaged | 7.2 | 6.7 | 7.3 | 7.9 | 7.6 |
| Total | 6.6 | 5.9 | 6.3 | 6.6 | 6.4 |

Note.--Ratios are calculated from the unrounded figures, using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

## U.S. Employment, Wages, and Productivity

### U.S. Beekeepers

Data on employment by U.S. producers, as provided in response to the Commission's questionnaires, are presented in appendix E. Estimates made by the American Beekeeping Federation of the total number of jobs provided by beekeeping operations in 1992 are shown in the following tabulation:

| Type of employee | Number |
|---|---|
| Unpaid beekeepers . . . . . | 4,000[1] |
| Full time employees . . . . | 2,424[2] |
| Part time employees . . . . | 6,060[3] |
| Total . . . . . | 12,484 |

[1] Beekeepers who use the honey program.
[2] Calculated at 1 per 800 colonies.
[3] Calculated at 2.5 per 10,000 colonies.

### U.S. Packers

Data on employment by U.S. packers as provided in response to the Commission's questionnaires are presented in table 16.

## Financial Experience of U.S. Producers and Packers

Financial data from 191 honey producers[66] and 22 honey packers (including 1 cooperative) were compiled for this report. The producers accounted for at least 20 percent of U.S. honey production in crop year 1992.[67] The packers accounted for 41 percent of U.S. disposition of honey in crop year 1992.[68]

### U.S. Beekeepers

The beekeeping industry derives its revenues from several sources. In addition to honey and honey agricultural program payments, the beekeeping firms also generate income from sales of beeswax and queen bees, pollination fees, and other miscellaneous income. These other sources of income vary from region to region. Some beekeepers pack all or part of the honey they produce, and some also pack honey purchased from other beekeepers. Sales of packed honey accounted for about 4 percent of the responding producers' total beekeeping revenues in 1992. Unpacked honey accounted for 67 percent of their total revenues in 1992, and agricultural program payments accounted for about 8 percent.[69] Other principal sources of income in 1992 were (as a share of their total revenues): pollination fees--13 percent, sales of package bees (including queens)--4 percent, and sales of beeswax--2 percent.

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[66] Data for producers and producer/packers are aggregated.
[67] Producers reported data on either a fiscal-year or crop-year basis. Producer data include crop or fiscal years ending in 1993 as well as 1992.
[68] Financial data for packers are on a fiscal-year basis.
[69] Some producers included agricultural payments in their total revenues; therefore, the agricultural payments reported by the beekeepers may be understated. According to the USDA (The U.S. Beekeeping Industry, Economic Research Service, Aug. 1993, p. i), total honey program payments have declined sharply since 1988, from $100 million to $16 million in 1992. In 1988, beekeepers derived 53 percent of their income from honey program payments. In 1992, the cited figure was equivalent to 13 percent of the value of U.S. honey production.

Table 16
Average number of U.S. packers' production and related workers producing honey, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993[3]

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | Jan.-Sept.-- 1993 |
|---|---|---|---|---|---|
| | Number of employees | | | | |
| All workers | 881 | 874 | 853 | 835 | 842 |
| | Number of production and related workers (PRWs) | | | | |
| Full time | 454 | 463 | 439 | 429 | 434 |
| Seasonal | 123 | 97 | 93 | 87 | 90 |
| Total | 577 | 560 | 532 | 516 | 524 |
| | Hours worked by PRWs | | | | |
| Full time | 828,654 | 822,862 | 873,877 | 635,499 | 636,026 |
| Seasonal | 54,837 | 59,339 | 57,915 | 38,817 | 42,046 |
| Total | 883,491 | 882,201 | 931,792 | 674,316 | 678,072 |
| | Wages paid to PRWs (*1,000 dollars*) | | | | |
| Full time | 8,288 | 8,256 | 8,698 | 6,263 | 6,427 |
| Seasonal | 387 | 403 | 415 | 285 | 313 |
| Total | 8,675 | 8,659 | 9,113 | 6,548 | 6,740 |
| | Total compensation paid to PRWs (*1,000 dollars*) | | | | |
| Full time | (4) | (4) | (4) | (4) | (4) |
| Seasonal | (4) | (4) | (4) | (4) | (4) |
| Total | 9,494 | 9,648 | 10,236 | 7,601 | 7,786 |
| | Hourly wages paid to PRWs | | | | |
| Full time | $10.00 | $10.03 | $9.95 | $9.86 | $10.11 |
| Seasonal | 7.07 | 6.79 | 7.17 | 7.34 | 7.44 |
| Average | 9.82 | 9.81 | 9.78 | 9.71 | 9.94 |
| | Productivity (*pounds per hour*) | | | | |
| Full time | 202.9 | 214.2 | 218.2 | 218.7 | 223.3 |
| Seasonal | 1,080.6 | 1,008.1 | 1,122.8 | 1,111.6 | 965.6 |
| Total | 190.1 | 199.5 | 204.4 | 205.9 | 209.3 |
| | Unit labor costs (*per pound*) | | | | |
| Full time | (4) | (4) | (4) | (4) | (4) |
| Seasonal | (4) | (4) | (4) | (4) | (4) |
| Total | $0.06 | $0.06 | $0.06 | $0.05 | $0.06 |

[1] Includes hours worked plus hours of paid leave time.
[2] On the basis of total compensation paid.
[3] Firms providing employment data accounted for approximately 70 percent of total U.S. domestic disposition of honey (based on quantity) in 1992.
[4] Not available.

Note.--Ratios are calculated from the unrounded figures using data of firms supplying both numerator and denominator information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Income-and-loss data for the beekeepers are shown in table 17; both part- and full-time producers are included. Aggregate revenues were $35.1 million in 1990, $38.1 million in 1991, and $39.9 million in 1992. Net income before taxes fell from $4.3 million in 1990 to $3.9 million in 1991, and slipped further to $3.7 million in 1992. Net income before taxes, as a ratio to total beekeeping income, was 12.3 percent in 1990, 10.3 percent in 1991, and 9.3 percent in 1992. Of the reporting firms, 42 incurred net losses in 1990, 50 had losses in 1991, and 44 in 1992.

Between 1990 and 1992, revenues increased by $4.8 million but expenses rose by $5.4 million. Hired labor, queens and bees purchased, bee supplies, depreciation, repairs and maintenance, salaries, rent, and all other expenses increased during this time. All other beekeeping expense is a composite of a number of expense items, such as gas and oil, trucks, property taxes, payroll taxes, insurance, utilities, office expense, professional services, and so forth.

Labor costs vary according to the type of entity and the use of family workers. Some producers, such as sole proprietorships, do not include as an expense the cost of their labor for their beekeeping and office work, whereas other producers use a combination of paid workers and self employment. Firms that do not fully expense the cost of their labor may generally report higher net incomes than other producers. In other firms, some of the owners and/or partners do not draw salaries, thus their firm's reported net income is larger. However, in many of these cases the net income would be the owner's income and/or partner's share.

Individual beekeeping expenses vary from one honey producer to another. This is true even for producers with the same number of bee colonies. Local climatic and economic conditions play a part in the variation in expenses. Because of various production disruptions to beekeeping operations in one or more years, income-and-loss data for individual producers were not consistent from period to period. Producers cited unfavorable weather (excessive heat or cold, rain, drought), disease (mites), pesticide losses, packer bankruptcy, insufficient labor, and losses from bears as extraordinary factors in their operations.

Many honey producers are concerned about the lower prices being offered (or lack of any offers) by packers for their 1993 crop, much of which is still unsold. The financial impact on the producers from the sale of their 1993 crop, as well as the elimination of USDA subsidies, cannot be derived from data provided in response to the Commission's questionnaires.[70]

Those in support of a finding of market disruption in this investigation contend that it is clear from the record that--

> "Injury has been particularly evident during 1993 as evidenced by . . . producers' reports of lowered credit ratings, increases in debt obligations, cancellation of expansion projects, and increased difficulty in repaying agricultural loans. Both economic analyses and reports from producers indicate that, on average, the industry is likely experiencing a loss in 1993. . . As noted in our prehearing brief, there are certain limitations to the profitability data requested by the Commission in this case. In particular, because the Commission requested that producers provide full-year 1990 through 1992 data, questionnaire responses will not reflect the adverse effects which the steep decline in 1993 prices have had on profitability in the current year. In addition, as we have noted previously the profitability will be overstated for those producers who provided IRS Schedule F's in lieu of filling out the profitability section of their questionnaires, or who reported no costs for owner-labor in the ITC questionnaire."[71]

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[70] See app. F for producer comments on financial prospects for crop year 1993.

[71] Joint Posthearing Brief and Answers to Commissioners' Questions of The American Beekeeping Federation, Inc. and the American Honey Producers Association, Inc., pp. 15-16. Of the 191 producers that provided financial data, income-and-loss data for 16 producers were constructed by the staff from IRS Schedule F forms. There were no reported costs for owners' and partners' salaries for 142 producers in their questionnaire submissions.

Table 17
Income-and-loss experience of U.S. producers and producer/packers on their operations producing honey, fiscal or crop years 1990-92

| Item | 1990 | 1991 | 1992 |
|---|---|---|---|
| Number of honey-producing colonies[1] (*1,000*) | 466 | 476 | 509 |
| | Quantity (*1,000 pounds*)[1] | | |
| Honey: | | | |
| Produced and sold | 36,197 | 42,201 | 42,767 |
| Produced, packed, and sold | 856 | 1,092 | 1,060 |
| Purchased, packed, and sold | 898 | 747 | 987 |
| Beeswax | 597 | 665 | 696 |
| | Value (*1,000 dollars*) | | |
| Revenues: | | | |
| Honey: | | | |
| Produced and sold | 22,510 | 26,604 | 26,658 |
| Produced, packed, and sold | 916 | 1,116 | 1,043 |
| Purchased, packed, and sold | 686 | 360 | 527 |
| Beeswax | 787 | 805 | 993 |
| Pollination fees | 4,684 | 4,764 | 5,139 |
| Package bees sold, including queens | 1,354 | 1,591 | 1,669 |
| Agricultural program payments | 3,144 | 1,843 | 2,983 |
| Other beekeeping income | 987 | 1,042 | 871 |
| Total | 35,068 | 38,125 | 39,883 |
| Beekeeping and operating expenses: | | | |
| Hired labor | 5,844 | 6,963 | 7,471 |
| Queens and bees purchased | 1,119 | 1,425 | 1,536 |
| Bee supplies | 2,465 | 2,433 | 2,861 |
| Depreciation | 2,453 | 2,666 | 2,937 |
| Repairs and maintenance | 1,656 | 1,840 | 1,887 |
| Owners' and partners' salaries | 1,751 | 1,813 | 1,942 |
| Other salaries | 468 | 513 | 539 |
| Interest expense | 1,338 | 1,563 | 1,313 |
| Unpacked honey purchases | 596 | 509 | 742 |
| Honey packing costs | 157 | 205 | 136 |
| Rent | 1,584 | 1,861 | 1,719 |
| All other expenses | 11,340 | 12,399 | 13,085 |
| Total | 30,771 | 34,191 | 36,169 |
| Net income before income taxes | 4,297 | 3,934 | 3,714 |
| | Ratio to total revenue (*percent*) | | |
| Total beekeeping expense | 87.7 | 89.7 | 90.7 |
| Net income before income taxes | 12.3 | 10.3 | 9.3 |
| | Number of firms reporting | | |
| Data | 190 | 190 | 191 |
| Net losses | 42 | 50 | 44 |

[1] Not all producers were able to provide quantity data.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

*Analysis of unit values and costs*

Income-and-loss data on a unit-value-per-pound and a value-per-colony basis are shown in table 18. The sales value per pound was $0.55 in 1990 and 1991, and then increased to $0.56 in 1992. These unit values are affected by product mix. Beeswax unit values increased over the 3-year period from $1.24 per pound in 1990 to $1.35 per pound in 1992, after dropping to $1.15 per pound in 1991. Total beekeeping expense[72] per pound slipped from $0.53 in 1990 to $0.52 in 1991, but then rose to $0.55 in 1992.

The yield of honey produced per colony by the producers that reported financial data rose from 85.8 pounds in 1990 to 100.5 pounds in 1991. It then dropped to 94.1 pounds in 1992. The value of honey per colony also increased irregularly, from $46.87 in 1990 to $49.74 in 1992, after reaching $53.72 in 1991. Overall beekeeping income and expenses both increased from 1990 to 1991, but both decreased in 1992. Net income from beekeeping operations increased from $8.29 per colony in 1990 to $8.33 per colony in 1991, but then fell to $7.22 per colony in 1992.

*State/regional analysis of income-and-loss data*

As previously mentioned, the type of beekeeping income varies by region. Based on the aggregated sample data, producers with pollination fees are generally concentrated on the west coast and in some Northern States; Texas beekeepers account for most of the queen bee sales in the United States. These variations in revenue, along with factors such as climate, colony yield, and expense variables, provide a significant variance in income from region to region and these vary from year to year. Financial data were received for producers in 30 states, as shown in table 19.

**U.S. Packers**

Honey packers consist of commercial (non-cooperatives) and cooperative organizations. The commercial honey packers accounted for *** percent and the cooperative *** percent of the value of total reported packed honey sales in fiscal 1992.

* * * * * * *[73]

[72] Beeswax, pollination, and package bees sold were treated as byproducts for the computation of total beekeeping and operating expenses per pound calculations.

[73] ***.

Table 18
Income-and-loss experience (on per-pound and per-colony bases) of U.S. producers and producer/packers on their operations producing honey, fiscal or crop years 1990-92

| Item | 1990 | 1991 | 1992 |
|---|---|---|---|
| | Value (*per pound*) | | |
| Honey: | | | |
| Produced and sold | $0.55 | $0.55 | $0.56 |
| Produced, packed, and sold | .69 | .72 | .68 |
| Beeswax sold | 1.24 | 1.15 | 1.35 |
| Honey: | | | |
| Total beekeeping and operating expenses[1] | .53 | .52 | .55 |
| Net beekeeping income | .11 | .09 | .08 |
| | Per colony[2] | | |
| Honey produced: | | | |
| Quantity (*pounds*) | 85.8 | 100.5 | 94.1 |
| Value | $46.87 | $53.72 | $49.74 |
| Beekeeping operations: | | | |
| Income | $68.81 | $73.79 | $71.17 |
| Expenses | $60.51 | $65.45 | $63.95 |
| Net income | $8.29 | $8.33 | $7.22 |

[1] Beeswax, pollination, and package bees sold were treated as byproducts for the computation of total beekeeping and operating expenses per pound calculations.
[2] Excludes purchases and sales of purchased honey.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 19
Income-and-loss experience of U.S. producers and producer/packers on their beekeeping operations, by states, fiscal years 1990-92

| Reporting state and year | Honey and beeswax sold | Pollination fees | Agricultural program payments | Other beekeeping income | Total beekeeping income | Total beekeeping expenses | Net beekeeping profit or (loss) before income taxes | Ratio of net profit or (loss) before income taxes to total revenue | Honey produced | Total number of reported colonies |
|---|---|---|---|---|---|---|---|---|---|---|
| | *Dollars* | | | | | | | *Percent* | *Pounds* | *Number* |
| Arizona: | * | * | * | * | * | * | * | * | | |
| Arkansas: | * | * | * | * | * | * | * | * | | |
| California: | * | * | * | * | * | * | * | * | | |
| Colorado: | * | * | * | * | * | * | * | * | | |
| Florida: | * | * | * | * | * | * | * | * | | |
| Idaho: | * | * | * | * | * | * | * | * | | |
| Iowa: | * | * | * | * | * | * | * | * | | |
| Kansas: | * | * | * | * | * | * | * | * | | |
| Louisiana: | * | * | * | * | * | * | * | * | | |
| Michigan: | * | * | * | * | * | * | * | * | | |
| Minnesota: | * | * | * | * | * | * | * | * | | |
| Missouri: | * | * | * | * | * | * | * | * | | |
| Montana: | * | * | * | * | * | * | * | * | | |
| Nebraska: | * | * | * | * | * | * | * | * | | |
| North Dakota: | * | * | * | * | * | * | * | * | | |
| Oklahoma: | * | * | * | * | * | * | * | * | | |
| South Dakota: | * | * | * | * | * | * | * | * | | |
| Texas: | * | * | * | * | * | * | * | * | | |
| Utah: | * | * | * | * | * | * | * | * | | |
| All other reporting states: | * | * | * | * | * | * | * | * | | |
| Total: | | | | | | | | | | |
| 1990 . . . . . | 24,899,713 | 4,683,881 | 3,143,593 | 2,340,900 | 35,068,087 | 30,770,787 | 4,297,300 | 12.3 | 36,904,579 | 466,361 |
| 1991 . . . . . | 28,885,000 | 4,764,405 | 1,842,837 | 2,632,306 | 38,124,548 | 34,190,640 | 3,933,908 | 10.3 | 42,843,549 | 476,385 |
| 1992 . . . . . | 29,221,127 | 5,139,148 | 2,982,858 | 2,540,196 | 39,883,329 | 36,168,917 | 3,714,412 | 9.3 | 43,494,295 | 509,006 |

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

*Income-and-loss experience of commercial honey packers*

The income-and-loss experience of the 21 commercial honey packers that reported financial information is shown in table 20. Net sales increased from $84.2 million in 1990 to $99.1 million in 1991; in 1992, they rose to $102.8 million. Operating income was $1.1 million in 1990, $521,000 in 1991, and $1.4 million in 1992. Operating income margins as a ratio to net sales were relatively low. They were 1.3 percent in 1990, 0.5 percent in 1991, and 1.4 percent in 1992. Six of the 21 responding firms incurred operating losses in 1990, 7 had losses in 1991, and 4 did so in 1992.

*Value added for commercial honey packers*

A value-added analysis of two packers, ***, is shown in table 21. As indicated, purchased honey accounts for a high proportion of the total costs.

*Financial data for the Sioux Honey Association*

Cooperatives, such as Sioux, do not prepare conventional income-and-loss statements, thus their financial data are not directly comparable to data for commercial honey packers. The values (gross operating proceeds) represent Sioux's market sales. Net proceeds to members are the amounts paid to the cooperative members for their honey. The cooperative's net proceeds per pound could be comparable to the cost of unpacked honey paid by commercial packers. Sioux's financial data are shown in table 22.

The 1992 annual report of the Sioux Honey Association discussed the honey industry as follows:

* * * * * * *[74]

*Unpacked honey purchases*

The source of most of the unpacked honey for the Sioux Honey Association is from its members. ***. Members are required to deliver 100 percent of their production to the cooperative. In fiscal 1993 *** of Sioux's unpacked honey was purchased from domestic non-members, and there were relatively smaller amounts imported from China and other countries.[75]

Unpacked honey purchases are the main expense of commercial honey packers. They purchase both domestic and imported honey. Some individual commercial honey packers differ in their purchase sources for unpacked honey. Some commercial honey packers, such as ***, have been increasing their purchases of Chinese honey.

**Other Financial Data**

A summary of the capital expenditures, assets, liabilities, and equity of the honey producers is shown in table 23.

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[74] Sioux Honey Association 1992 annual report, "Chairman's & President's Report," p. 4.
[75] Computed from Sioux Honey Association 1992 annual report, p. 9.

Table 20
Income-and-loss experience of U.S. commercial packers on their honey packing operations, fiscal years 1990-92[1]

| Item | 1990 | 1991 | 1992 |
|---|---|---|---|
| | Quantity (*1,000 pounds*)[2] | | |
| Trade sales | 83,399 | 80,161 | 77,287 |
| Company transfers | 79 | 41 | 87 |
| Total | 83,478 | 80,202 | 77,374 |
| | Value (*1,000 dollars*) | | |
| Net sales: | | | |
| Trade sales | 84,172 | 99,079 | 102,766 |
| Company transfers | 44 | 22 | 47 |
| Total | 84,216 | 99,101 | 102,813 |
| Cost of goods sold: | | | |
| Unpacked honey: | | | |
| Domestic purchases | 16,148 | 18,002 | 16,654 |
| Imported honey | 17,242 | 24,200 | 25,696 |
| Total | 33,390 | 42,202 | 42,350 |
| Packing costs | 5,105 | 5,534 | 4,968 |
| All other costs[3] | 32,863 | 38,652 | 41,638 |
| Total cost of goods sold | 71,358 | 86,388 | 88,956 |
| Gross profit | 12,858 | 12,713 | 13,857 |
| Selling, general, and administrative expenses | 11,735 | 12,192 | 12,453 |
| Operating income | 1,123 | 521 | 1,404 |
| Interest expense | 1,035 | 1,131 | 937 |
| Other income or (expense), net | 225 | 307 | 590 |
| Net income before income taxes | 313 | (303) | 1,056 |
| Depreciation and amortization | 1,057 | 1,023 | 954 |
| Cash flow[4] | 1,369 | 720 | 2,010 |
| | Ratio to net sales (*percent*) | | |
| Cost of goods sold | 84.7 | 87.2 | 86.5 |
| Gross profit | 15.3 | 12.8 | 13.5 |
| Selling, general, and administrative expenses | 13.9 | 12.3 | 12.1 |
| Operating income | 1.3 | 0.5 | 1.4 |
| Net income before income taxes | 0.4 | (0.3) | 1.0 |
| | Number of firms reporting | | |
| Operating losses | 6 | 7 | 4 |
| Net losses | 7 | 8 | 5 |
| Data | 21 | 21 | 21 |

[1] The number of companies that have fiscal years ending in the following periods are as follows: 3/31 (2), 4/30 (1), 5/31 (2), 6/30 (4), 7/31 (1), 9/30 (1), 10/31 (3), and 12/31 (7).
[2] Some producers did not provide quantities.
[3] Some packers were unable to break down their costs, thus this category includes both domestic and imported purchases of honey, packing costs, and all other costs.
[4] Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 21
Value added by two U.S. commercial packers on their honey packing operations, by firms, fiscal years 1990-92

* * * * * * *

Table 22
Financial data for the Sioux Honey Association Cooperative on its honey packing operations, fiscal years 1991-93

* * * * * * *

Table 23
Certain salient financial data for honey producers and packers, fiscal years 1990-92

| Item | 1990 | 1991 | 1992 |
|---|---|---|---|
| | *(1,000 dollars)* | | |
| Producers:[1] | | | |
| Capital expenditures | 2,753 | 3,135 | 3,241 |
| Assets | 43,713 | 45,844 | 48,015 |
| Liabilities | 15,727 | 17,175 | 17,842 |
| Equity | 28,047 | 28,686 | 30,205 |
| Packers: | | | |
| Commercial:[2] | | | |
| Capital expenditures | 984 | 1,717 | 964 |
| Assets | 25,454 | 26,132 | 25,601 |
| Liabilities | 15,888 | 16,447 | 15,201 |
| Equity | 9,566 | 10,335 | 10,859 |
| Cooperative:[3] | | | |

* * * * * * *

[1] 122 producers and producer/packers provided data.
[2] Sixteen commercial packers provided data.
[3] Data are for Sioux Honey only.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

### Research and Development

A recent Commission report[76] discussed research and development in the honey industry as follows:

> "Research and development in the honey industry can be divided into two distinct types: product research and bee research. Product research is most notably done by the National Honey Board. The National Honey Board is composed of industry representatives appointed by the Secretary of Agriculture to administer the Honey Research Promotion and Consumer Information Order. Approximately one-quarter of the gross budget of the National Honey Board (about $2.5 million in 1991) goes toward research and development of marketing strategies and market uses of honey.
>
> The U.S. Government, through research grants and its own research conducted by the U.S. Department of Agriculture, has actively engaged in study of a number of diseases and parasites that are affecting honeybees in the United States."

### Impact of Imports on Capital and Investment

The Commission requested U.S. producers to describe any actual or potential negative effects of imports of honey from China on their growth, investment, ability to raise capital, the scale of capital investments, or production efforts. Their responses are shown in appendix F.

## CONSIDERATION OF THE QUESTION OF THREAT OF MATERIAL INJURY TO AN INDUSTRY IN THE UNITED STATES

### Ability of Chinese Producers to Generate Exports and Availability of Export Markets Other Than the United States

### World Honey Production

Honey is an internationally marketed commodity, produced and consumed worldwide. Approximately 40 percent of known world production in 1992 entered world trade, with the remainder consumed locally. The United States accounted for approximately 20 percent of the known world honey production in 1992, and was the second largest producer, following China.[77] Table 24 and figure 11 present data on honey production, supply, and distribution for selected countries for 1989-93.

### The Industry in China

With the breakup of the U.S.S.R., China is the world's largest producer and exporter of honey. According to the USDA's FAS, the bulk of China's honey is produced by itinerant apiarists in eastern and central China, who travel from south to north following the spring season.[78] Producers transport their hives, usually numbering at least 50, on trains and trucks, and follow the flowering season of some 40 major and 300 minor flora.

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[76] USITC, Industry and Trade Summary, Natural Sweeteners, publication 2545 (AG-8), Nov. 1992.
[77] The former U.S.S.R. was the world's largest producer in 1991.
[78] World Honey Situation, FAS, USDA, Dec. 1992.

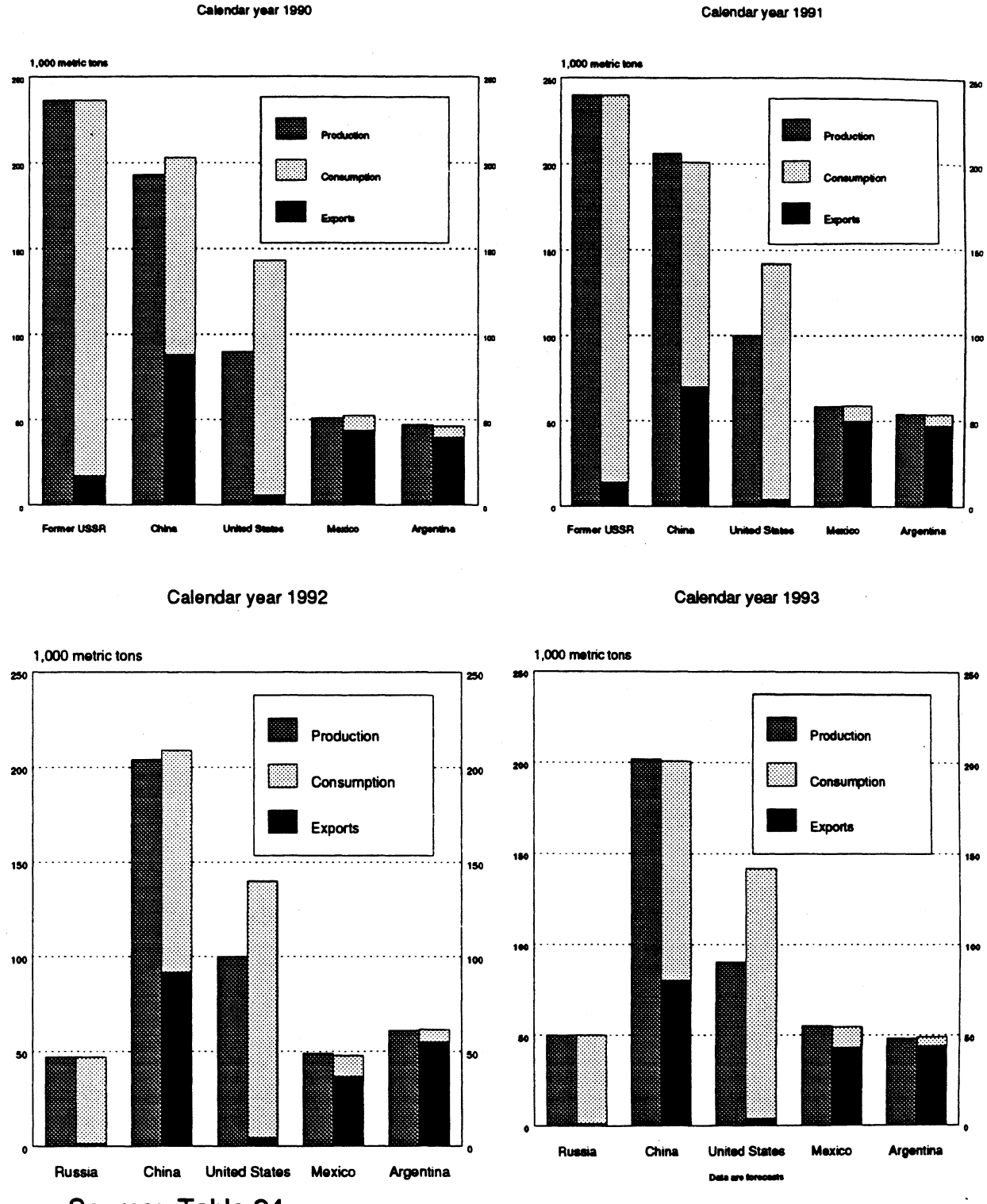
Table 24
Honey: Production, supply, and distribution for selected countries, 1989-93[1]

| Country | Year | Total colonies[2] | Yield/ colony | Honey production | Beginning stocks | Imports | Total supply/ distribution | Exports | Domestic consumption | Ending stocks[3] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *1,000* | *Kgs.* | *Metric tons* | | | | | | |
| Argentina | 1989 | 1,500 | 26.7 | 40,000 | 1,184 | 0 | 41,184 | 33,852 | 6,500 | 832 |
| | 1990 | 1,500 | 31.3 | 47,000 | 832 | 0 | 47,832 | 39,685 | 6,500 | 1,647 |
| | 1991 | 1,600 | 33.8 | 54,000 | 1,647 | 0 | 55,647 | 47,162 | 6,500 | 1,985 |
| | 1992 | 1,600 | 38.0 | 61,000 | 1,985 | 0 | 62,985 | 55,165 | 6,500 | 1,320 |
| | 1993[4] | 1,600 | 30.0 | 48,000 | 1,320 | 0 | 49,320 | 44,000 | 5,000 | 320 |
| Australia | 1989 | 405 | 64.7 | 26,198 | 2,436 | 56 | 28,690 | 13,399 | 15,167 | 124 |
| | 1990 | 384 | 71.8 | 27,561 | 124 | 66 | 27,751 | 12,253 | 15,404 | 94 |
| | 1991 | 370 | 68.3 | 25,287 | 94 | 61 | 25,442 | 10,377 | 15,015 | 50 |
| | 1992 | 370 | 67.6 | 25,000 | 50 | 100 | 25,150 | 10,100 | 15,000 | 50 |
| | 1993 | (5) | (5) | (5) | (5) | (5) | (5) | (5) | (5) | (5) |
| Brazil | 1989 | 2,300 | 13.9 | 32,000 | 0 | 2,129 | 34,129 | 355 | 33,774 | 0 |
| | 1990 | 2,300 | 13.0 | 30,000 | 0 | 2,742 | 32,742 | 35 | 32,707 | 0 |
| | 1991 | 2,350 | 13.7 | 32,300 | 0 | 2,214 | 34,514 | 78 | 34,436 | 0 |
| | 1992 | 2,350 | 11.9 | 28,000 | 0 | 400 | 28,400 | 100 | 28,300 | 0 |
| | 1993 | (5) | (5) | (5) | (5) | (5) | (5) | (5) | (5) | (5) |
| Canada | 1989 | 548 | 50.8 | 27,815 | 15,000 | 643 | 43,458 | 21,118 | 18,340 | 4,000 |
| | 1990 | 532 | 60.4 | 32,115 | 4,000 | 543 | 36,658 | 7,770 | 19,888 | 9,000 |
| | 1991 | 499 | 64.4 | 31,606 | 9,000 | 397 | 41,003 | 10,244 | 23,759 | 7,000 |
| | 1992 | 500 | 59.6 | 29,624 | 7,000 | 623 | 37,247 | 11,094 | 22,153 | 4,000 |
| | 1993[4] | 503 | 61.6 | 31,000 | 4,000 | 800 | 35,800 | 10,000 | 22,800 | 3,000 |
| China | 1989 | 7,350 | 25.7 | 189,000 | 10,000 | 0 | 199,000 | 71,499 | 113,501 | 14,000 |
| | 1990 | 7,645 | 25.2 | 193,000 | 14,000 | 0 | 207,000 | 88,000 | 115,000 | 4,000 |
| | 1991 | 7,541 | 24.8 | 206,000 | 4,000 | 0 | 210,000 | 69,958 | 131,042 | 9,000 |
| | 1992 | 7,300 | 26.7 | 204,000 | 9,000 | 3 | 213,003 | 91,745 | 117,258 | 4,000 |
| | 1993[4] | 7,000 | 29.0 | 202,000 | 4,000 | 5 | 206,005 | 80,000 | 121,005 | 5,000 |
| Germany[6] | 1989 | 1,079 | 26.9 | 29,000 | 3,000 | 84,448 | 116,448 | 16,000 | 89,448 | 11,000 |
| | 1990 | 1,000 | 19.1 | 23,000 | 11,000 | 78,978 | 112,978 | 16,000 | 91,978 | 5,000 |
| | 1991 | 1,215 | 20.1 | 25,000 | 5,000 | 89,192 | 119,192 | 12,000 | 102,192 | 5,000 |
| | 1992 | 1,180 | 21.0 | 24,677 | 5,000 | 89,235 | 118,912 | 13,227 | 102,000 | 3,685 |
| | 1993[4] | 1,179 | 28.9 | 28,000 | 3,685 | 92,815 | 124,500 | 17,500 | 104,000 | 3,000 |
| Japan | 1989 | 258 | 20.7 | 5,343 | 6,000 | 53,815 | 65,158 | 72 | 58,086 | 7,000 |
| | 1990 | 253 | 19.2 | 4,854 | 7,000 | 66,435 | 81,289 | 13 | 66,276 | 15,000 |
| | 1991 | 249 | 16.9 | 4,202 | 15,000 | 39,303 | 58,505 | 16 | 52,489 | 6,000 |
| | 1992 | 236 | 16.1 | 3,807 | 6,000 | 32,224 | 42,031 | 52 | 35,979 | 6,000 |
| | 1993[4] | 226 | 16.8 | 3,800 | 6,000 | 38,000 | 47,800 | 20 | 40,980 | 6,800 |
| Mexico | 1989 | 2,400 | 20.2 | 48,530 | 485 | 108 | 49,123 | 38,210 | 8,500 | 2,413 |
| | 1990 | 2,400 | 21.3 | 51,000 | 2,413 | 10 | 53,423 | 43,720 | 8,600 | 1,103 |
| | 1991 | 2,400 | 24.5 | 58,770 | 1,103 | 15 | 59,888 | 50,088 | 9,000 | 800 |
| | 1992 | 2,400 | 20.4 | 48,852 | 800 | 18 | 49,670 | 36,868 | 11,000 | 1,802 |
| | 1993[4] | 2,400 | 22.9 | 55,000 | 1,802 | 20 | 56,882 | 43,000 | 11,500 | 2,322 |
| Russia[7] | 1989 | 9,350 | 24.1 | 225,000 | 0 | 0 | 225,000 | 17,286 | 207,714 | 0 |
| | 1990 | 10,835 | 21.8 | 236,219 | 0 | 0 | 236,219 | 17,100 | 219,119 | 0 |
| | 1991 | 11,500 | 20.9 | 240,000 | 0 | 0 | 240,000 | 14,000 | 226,000 | 0 |
| | 1992 | 4,500 | 10.4 | 47,000 | 0 | 0 | 47,000 | 1,325 | 45,675 | 0 |
| | 1993 | 4,700 | 10.6 | 50,000 | 0 | 0 | 50,000 | 1,200 | 48,800 | 0 |
| United States | 1989 | 3,300 | 24.3 | 80,266 | 77,260 | 35,050 | 192,576 | 4,513 | 132,473 | 55,590 |
| | 1990 | 3,210 | 27.9 | 89,717 | 55,590 | 34,944 | 180,251 | 5,639 | 137,644 | 36,968 |
| | 1991 | 3,200 | 31.2 | 99,840 | 36,968 | 41,846 | 178,654 | 4,336 | 137,667 | 37,560 |
| | 1992 | 3,030 | 33.1 | 100,245 | 37,560 | 51,995 | 189,800 | 4,729 | 135,284 | 49,787 |
| | 1993 | 2,900 | 32.0 | 90,000 | 49,787 | 57,100 | 196,887 | 4,000 | 138,000 | 54,887 |
| Total[8] | 1989 | 16,435 | 25.6 | 419,954 | 112,929 | 174,064 | 706,947 | 185,264 | 426,848 | 94,835 |
| | 1990 | 16,540 | 26.6 | 440,686 | 94,835 | 180,751 | 719,431 | 200,827 | 445,886 | 72,718 |
| | 1991 | 16,704 | 28.7 | 479,418 | 72,718 | 170,753 | 722,889 | 193,804 | 462,649 | 67,345 |
| | 1992 | 16,246 | 29.1 | 472,205 | 67,345 | 174,098 | 713,648 | 212,880 | 430,174 | 70,594 |
| | 1993 | 15,808 | 29.0 | 457,800 | 70,594 | 188,740 | 717,194 | 198,520 | 443,285 | 75,329 |

[1] Calendar year for all except Australia, which begins in July of the indicated year.
[2] For the United States, only colonies with 5 or more hives are included.
[3] For the United States, includes honey in CCC inventory, in outstanding loans, and commercial stocks.
[4] Forecast by USDA.
[5] Not available.
[6] Includes only West Germany prior to 1991. East Germany is included beginning in 1991.
[7] Includes all the republics of the Former Soviet Union prior to 1992, and only Russia since 1992.
[8] Excluding Australia, Brazil, and Russia.

Source: World Honey Situation, FAS, USDA, Dec. 1992 and draft report Dec. 1993.

## Figure 11: Honey production and disappearance, by principal producing countries, 1990-93




Source: Table 24.

The FAS reports that producers sell to local supply and sale cooperatives which act as middlemen and re-sell honey to retailers, food and beverage processors, producers of Chinese medicines, or in the case of honey destined for the export market, to the China Native Products Import & Export Corporation (also known as TUHSU) and its provincial trading companies. The following tabulation presents data on production of honey by province in 1991, as reported by FAS:

| Province | Colonies *Number* | Production *Pounds* | Yield *Lbs./ colony* |
|---|---|---|---|
| Zhejiang | 1,286,000 | 149,914,364 | 117 |
| Sichuan | 1,052,000 | 39,683,214 | 38 |
| Henan | 440,000 | 30,864,722 | 70 |
| Jiangsu | 270,000 | 26,455,476 | 98 |
| Hubei | 423,000 | 19,841,607 | 47 |
| Jiangxi | 276,000 | 19,841,607 | 72 |
| Shandong | 175,000 | 17,636,984 | 101 |
| Fujian | 222,000 | 17,636,984 | 79 |
| Anhui | 227,000 | 17,636,984 | 78 |
| Guangdong | 292,000 | 13,227,738 | 45 |
| Jilin | 79,000 | 11,023,115 | 140 |
| Shaanxi | 301,000 | 11,023,115 | 37 |
| Shanxi | 137,000 | 11,023,115 | 80 |
| Yunnan | 918,000 | 8,818,492 | 10 |
| Liaoning | 83,000 | 6,613,869 | 80 |
| Hebei | 177,000 | 4,409,246 | 25 |
| Others | 1,183,000 | 48,501,706 | 41 |
| Total/ average | 7,541,000 | 454,152,338 | 60 |

***Crop quality***

As previously mentioned, in 1990 exports of honey from China experienced quality problems, including allegations of Fujian province exporters adding sugar to honey. The FAS reports that these quality problems have been largely resolved in that the Chinese government has stepped up quality control by ordering a compulsory use of standard testing instruments in all organizations involved in honey production, procurement, and trade.

***Production, supply, and distribution***

Data prepared by the FAS for honey production, supply, and distribution in China are presented in table 25. Production of honey increased by 6.7 percent from 1990 to 1991, decreased by 1.0 percent from 1991 to 1992, and is projected to decrease by 1.0 percent from 1992 to 1993.[79,80] Although honey production in China has decreased by 1.9 percent since 1991, a member of China's Ministry of Agriculture reported the following in 1990:[81]

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[79] FAS attributes the decline from 1991 to 1992 to the fact that "higher production costs are reducing total bee colonies. (World Honey Situation, draft report, FAS, Dec. 1993).

[80] The inherent difficulties in data collection and forecasting are evident by reported changes in honey production in China. In its Dec. 1992 report, FAS indicated that production from 1991 to 1992 increased by 7.4 percent (World Honey Situation, FAS, Dec. 1992). In its draft report of Dec. 1993, FAS indicates that production from 1991 to 1992 decreased by 1.0 percent because "higher production costs are reducing total bee colonies" (World Honey Situation, draft report, FAS, Dec. 1993). Likewise, in its 1992 report FAS reported a decrease in production of 1.6 percent from 1990 to 1991 in China due to "an unusually cool, wet spring, changes in China's honey policy, and other economic changes." The 1993 draft report revises the change for that period to an increase of 6.7 percent without explanation.

[81] Paper presented in 1990 by Wang Suzhui, Senior Agronomist, Department of Animal Husbandry and Health, Ministry of Agriculture, PRC.

Table 25
Honey: Production, supply, and distribution in China, 1988-93

| Item | 1988 | 1989 | 1990 | 1991 | 1992 | 1993[1] |
|---|---|---|---|---|---|---|
| Total colonies (*1,000*) | 8,140 | 7,350 | 7,645 | 7,650 | 7,300 | 7,000 |
| Yield/colony (*pounds*) | 42.3 | 56.7 | 55.7 | 60.2 | 61.6 | 63.6 |
| | Quantity (*1,000 pounds*) | | | | | |
| Beginning stocks | 22,046 | 22,046 | 30,865 | 8,818 | 19,842 | 8,818 |
| Production | 343,921 | 416,674 | 425,492 | 454,152 | 449,743 | 445,334 |
| Imports | 0 | 0 | 0 | 0 | 7 | 11 |
| Total supply | 365,967 | 438,720 | 456,357 | 462,971 | 469,591 | 454,163 |
| Exports: | | | | | | |
| Japan | 62,431 | 96,278 | 131,508 | 74,820 | 59,800 | (2) |
| United States | 19,775 | 24,890 | 25,452 | 44,829 | 54,631 | (2) |
| Germany | 7,158 | 3,574 | 3,536 | 6,215 | 19,310 | (2) |
| Other | 13,122 | 32,886 | 33,510 | 28,367 | 68,522 | (2) |
| Total exports | 102,486 | 157,628 | 194,007 | 154,231 | 202,263 | 176,370 |
| Domestic consumption | 241,435 | 250,227 | 253,532 | 288,898 | 258,510 | 266,770 |
| Ending stocks | 22,046 | 30,865 | 8,818 | 19,842 | 8,818 | 11,023 |
| Total distribution | 365,967 | 438,720 | 456,357 | 462,971 | 469,591 | 454,163 |
| | Ratios (*percent*) | | | | | |
| Share of total supply: | | | | | | |
| Beginning stocks | 6.0 | 5.0 | 6.8 | 1.9 | 4.2 | 1.9 |
| Production | 94.0 | 95.0 | 93.2 | 98.1 | 95.8 | 98.1 |
| Imports | (3) | (3) | (3) | (3) | (4) | (4) |
| Total supply | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Share of total exports: | | | | | | |
| Japan | 60.9 | 61.1 | 67.8 | 48.5 | 29.6 | (2) |
| United States | 19.3 | 15.8 | 13.1 | 29.1 | 27.0 | (2) |
| Germany | 7.0 | 2.3 | 1.8 | 4.0 | 9.5 | (2) |
| Other | 12.8 | 20.9 | 17.3 | 18.4 | 33.9 | (2) |
| Total exports | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Share of total distribution: | | | | | | |
| Exports | 28.0 | 35.9 | 42.5 | 33.3 | 43.1 | 38.8 |
| Domestic consumption | 66.0 | 57.0 | 55.6 | 62.4 | 55.0 | 58.7 |
| Ending stocks | 6.0 | 7.0 | 1.9 | 4.3 | 1.9 | 2.4 |
| Total distribution | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

[1] Estimated.
[2] Not available.
[3] Not applicable.
[4] Less than 0.05 percent.

Source: FAS, USDA.

"There are great potentialities in developing Chinese beekeeping, especially in the mountainous area and outlying districts with a backward economy. It's estimated that Chinese beekeeping will have a rapid development during the Eighth Five-Year Plan (1991-1995) of the national economy. Beekeeping will arrive at a higher level, with 10 million colonies, 0.25 million tons of honey, 100 tons of royal jelly, and with 70 thousand tons of honey and 200 tons of royal jelly exported. Our tasks during the Five-Year Plan are mainly to raise the techniques, improve mechanization and strengthen administration in beekeeping, not to increase the number of colonies."

With respect to the data provided by FAS in table 25, 60-70 percent of China's honey production is consumed domestically, while the remainder is exported. 1990 was an unusual year in that China exported about 43 percent of its total production, due principally to increases in import demand by Japan and the United States. However, exports from China in 1991 decreased to 36.1 percent of production, as Japanese purchases declined due to reduced demand for a honey-based beverage in Japan. Exports of honey to the United States accounted for 13.1 percent of total exports in 1990, 29.1 percent in 1991, and 27.0 percent in 1992.

The following tabulation presents data on honey exports from China in 1992, as reported by FAS:

| Destination | Quantity | Value | Unit value | Share of 1992 quantity |
|---|---|---|---|---|
| | *1,000 pounds* | *1,000 dollars* | *Per pound* | *Percent* |
| Japan | 59,800 | $23,341 | $0.39 | 29.6 |
| United States | 54,631 | 20,011 | .37 | 27.0 |
| Poland | 20,117 | 8,433 | .42 | 9.9 |
| Germany | 19,310 | 7,953 | .41 | 9.5 |
| United Kingdom | 13,816 | 5,158 | .37 | 6.8 |
| Hong Kong | 9,017 | 3,789 | .42 | 4.5 |
| Belgium | 6,704 | 2,803 | .42 | 3.3 |
| Spain | 4,760 | 1,929 | .41 | 2.4 |
| Russia | 3,644 | 2,273 | .62 | 1.8 |
| Netherlands | 1,799 | 668 | .37 | .9 |
| Singapore | 1,404 | 604 | .43 | .7 |
| Italy | 1,400 | 638 | .46 | .4 |
| Malaysia | 891 | 428 | .48 | .4 |
| Jordan | 882 | 371 | .42 | .4 |
| Saudi Arabia | 802 | 331 | .41 | .4 |
| Morocco | 653 | 278 | .43 | .3 |
| France | 602 | 291 | .48 | .3 |
| Portugal | 441 | 184 | .42 | .2 |
| Canada | 397 | 135 | .34 | .2 |
| South Korea | 309 | 121 | .39 | .2 |
| Other | 893 | 317 | .36 | .4 |
| Total | 202,272 | 80,056 | .40 | 100.0 |

**Barriers to Trade**

The extent to which the U.S. market may be the focal point for the diversion of exports of honey by reason of restraints on exports of such article to, or on imports of such article into, third country markets, is summarized in the following tabulation of tariffs:

| Country | Duty *Percent ad valorem* | |
|---|---|---|
| China | 55.0 | |
| Taiwan | 45.0 | |
| Romania | 35.0 | |
| Bahamas | 32.5 | |
| Hungary | 30.0 | |
| Japan | 30.0 | |
| Philippines | 30.0 | |
| Venezuela | 30.0 | |
| European Community now European Union | 27.0 | |
| Spain | 27.0 | |
| Bulgaria | 25.0 | |
| Mexico | 20.0 | |
| Korea | 20.0 | |
| Brazil | 20.0 | |
| Turkey | 20.0 | |
| Malaysia | 18.0 | (estimated based on 9.2 cents per lb.) |
| Saudi Arabia | 12.0 | |
| Argentina | 5.0 | or 7.5 (depending upon container size) |
| United Arab Emirates | 5.0 | |
| Kuwait | 4.0 | |
| Canada | 3.0 | (estimated based on 1.5 cents per lb.) |
| United States | 2.0 | (estimated based on 1 cent per lb.) |

With respect to non-tariff trade barriers, industry sources have reported that Canadian importers of honey from China have been advised by Agriculture Canada that some Chinese honey had been discovered to be adulterated with sweeteners, and that future shipments to Canada will be held and tested prior to release in Canada.[82] For further discussion of non-tariff trade barriers see the "U.S. Exports" section of this report.

[82] American Bee Journal, Dec. 1993, p. 822. In a telephone interview ***.

## CONSIDERATION OF THE CAUSAL RELATIONSHIP BETWEEN ALLEGEDLY RAPIDLY INCREASING IMPORTS OF HONEY AND ALLEGED MATERIAL INJURY OR THREAT THEREOF

### The Question of Rapidly Increasing Imports From China

U.S. imports of honey from China from 1989 to 1992 increased by 141.4 percent based on quantity, and 192.6 percent based on value (table 26 and figure 12).[83] During January-September 1993, such imports increased by 20.4 percent based on quantity and 10.2 percent based on value from imports during the corresponding period of 1992. Average unit values increased from 35.8 cents per pound in 1989 to 43.4 cents per pound in 1992, then fell to 40.2 cents per pound in January-September 1993. The quantity of honey imports from China packaged for retail accounted for less than 0.3 percent of total imports from China in 1992, and 0.6 percent of total imports from China during January-September 1993.

### Imports From China Relative to U.S. Production

In 1989 the ratio of imports of honey from China to U.S. production of honey was 14.1 percent based on quantity, and 9.9 percent based on value (table 27). These respective ratios decreased in 1990 to 12.9 percent and 9.6 percent, but then increased in 1991 to 20.4 percent and 15.8 percent. In 1992, the ratio of imports from China to U.S. production rose further--to 27.2 percent on a quantity basis and 21.2 percent on a value basis.

### Market Penetration by Imports from China

In terms of quantity, the share of the U.S. market supplied by imports from China decreased from 8.7 percent in 1989 to 8.5 percent in 1990, but then rose to 15.3 percent in 1991 and 20.1 percent in 1992 (table 28). The share of such imports based on value similarly increased from 6.6 percent in 1989 to 16.6 percent in 1992.

[83] Additional tables and figures of official import statistics, by sources and customs districts, are presented in app. G.

Table 26
Honey: U.S. imports, by types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | | |
| Packaged for retail: | | | | | | |
| China | 132 | 492 | 100 | 140 | 119 | 312 |
| All other countries | 2,867 | 3,656 | 2,766 | 1,989 | 1,380 | 1,142 |
| Total | 3,000 | 4,148 | 2,866 | 2,129 | 1,500 | 1,454 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 12,148 | 13,050 | 26,797 | 36,843 | 26,632 | 25,714 |
| All other countries | 20,883 | 30,410 | 32,988 | 42,158 | 30,709 | 33,354 |
| Total | 33,031 | 43,460 | 59,785 | 79,001 | 57,341 | 59,068 |
| Light amber and darker, bulk: | | | | | | |
| China | 12,609 | 11,910 | 17,932 | 23,095 | 17,329 | 27,063 |
| All other countries | 28,631 | 17,521 | 11,672 | 10,404 | 7,416 | 7,614 |
| Total | 41,240 | 29,431 | 29,603 | 33,499 | 24,746 | 34,677 |
| Subtotal bulk: | | | | | | |
| China | 24,758 | 24,960 | 44,728 | 59,938 | 43,961 | 52,777 |
| Other countries | 49,514 | 47,931 | 44,660 | 52,562 | 38,125 | 40,968 |
| Total | 74,272 | 72,891 | 89,388 | 112,500 | 82,087 | 93,745 |
| Total honey: | | | | | | |
| China | 24,890 | 25,452 | 44,829 | 60,078 | 44,081 | 53,089 |
| All other countries | 52,381 | 51,587 | 47,426 | 54,551 | 39,506 | 42,110 |
| Total | 77,271 | 77,039 | 92,254 | 114,629 | 83,587 | 95,199 |
| | Value (*1,000 dollars; landed-duty paid*) | | | | | |
| Packaged for retail: | | | | | | |
| China | 139 | 275 | 106 | 162 | 135 | 213 |
| All other countries | 2,512 | 3,478 | 3,328 | 2,353 | 1,745 | 1,513 |
| Total | 2,651 | 3,753 | 3,434 | 2,515 | 1,881 | 1,726 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 4,371 | 5,298 | 11,486 | 15,933 | 11,658 | 10,147 |
| All other countries | 8,560 | 12,962 | 16,341 | 21,480 | 15,681 | 16,406 |
| Total | 12,930 | 18,261 | 27,827 | 37,413 | 27,340 | 26,553 |
| Light amber and darker, bulk: | | | | | | |
| China | 4,408 | 4,754 | 7,703 | 10,001 | 7,568 | 10,984 |
| All other countries | 11,048 | 7,277 | 5,420 | 4,966 | 3,549 | 3,686 |
| Total | 15,456 | 12,031 | 13,123 | 14,966 | 11,117 | 14,670 |
| Subtotal bulk: | | | | | | |
| China | 8,779 | 10,052 | 19,189 | 25,934 | 19,227 | 21,131 |
| Other countries | 19,608 | 20,240 | 21,761 | 26,446 | 19,231 | 20,092 |
| Total | 28,387 | 30,292 | 40,950 | 52,380 | 38,457 | 41,223 |
| Total honey: | | | | | | |
| China | 8,918 | 10,327 | 19,295 | 26,095 | 19,362 | 21,344 |
| All other countries | 22,120 | 23,718 | 25,088 | 28,799 | 20,976 | 21,605 |
| Total | 31,038 | 34,045 | 44,383 | 54,894 | 40,338 | 42,949 |

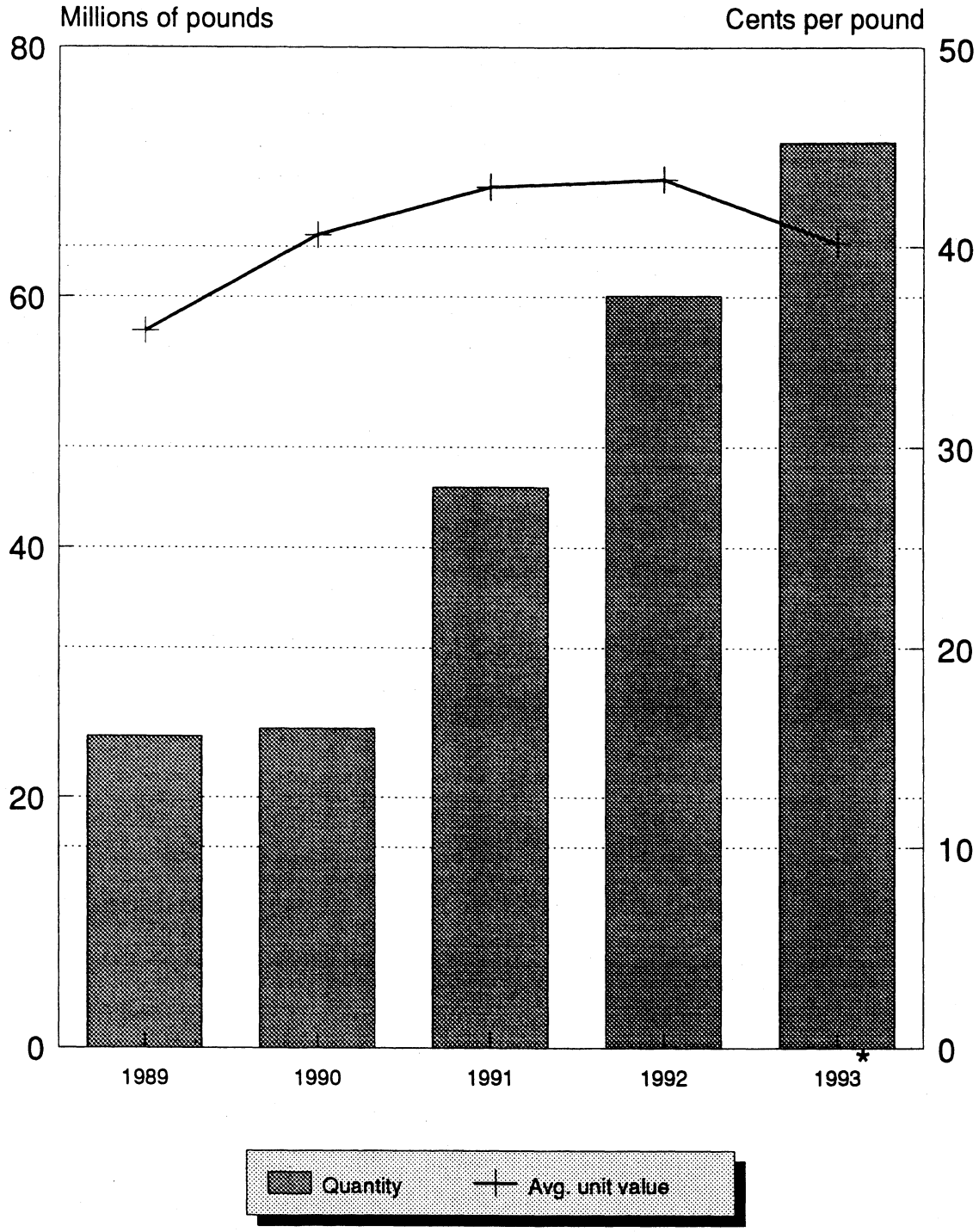
Table continued on next page.

Table 26--Continued
Honey: U.S. imports, by types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Unit value (per pound) | | | | | |
| Packaged for retail: | | | | | | |
| China | $1.054 | $ .558 | $1.057 | $1.152 | $1.136 | $ .682 |
| All other countries | .876 | .951 | 1.203 | 1.183 | 1.264 | 1.325 |
| Average | .884 | .905 | 1.198 | 1.181 | 1.254 | 1.187 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | .360 | .406 | .429 | .432 | .438 | .395 |
| All other countries | .410 | .426 | .495 | .510 | .511 | .492 |
| Average | .391 | .420 | .465 | .474 | .477 | .450 |
| Light amber and darker, bulk: | | | | | | |
| China | .350 | .399 | .430 | .433 | .437 | .406 |
| All other countries | .386 | .415 | .464 | .477 | .479 | .484 |
| Average | .375 | .409 | .443 | .447 | .449 | .423 |
| Subtotal bulk: | | | | | | |
| China | .355 | .403 | .429 | .433 | .437 | .400 |
| Other countries | .396 | .422 | .487 | .503 | .504 | .490 |
| Average | .382 | .416 | .458 | .466 | .468 | .440 |
| Total honey: | | | | | | |
| China | .358 | .406 | .430 | .434 | .439 | .402 |
| All other countries | .422 | .460 | .529 | .528 | .531 | .513 |
| Average | .402 | .442 | .481 | .479 | .483 | .451 |
| | Share of total quantity (*percent*) | | | | | |
| Packed for retail: | | | | | | |
| China | 0.5 | 1.9 | 0.2 | 0.2 | 0.3 | 0.6 |
| All other countries | 5.5 | 7.1 | 5.8 | 3.6 | 3.5 | 2.7 |
| Subtotal | 3.9 | 5.4 | 3.1 | 1.9 | 1.8 | 1.5 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 48.8 | 51.3 | 59.8 | 61.3 | 60.4 | 48.4 |
| All other countries | 39.9 | 58.9 | 69.6 | 77.3 | 77.7 | 79.2 |
| Subtotal | 42.7 | 56.4 | 64.8 | 68.9 | 68.6 | 62.0 |
| Light amber and darker, bulk: | | | | | | |
| China | 50.7 | 46.8 | 40.0 | 38.4 | 39.3 | 51.0 |
| All other countries | 54.7 | 34.0 | 24.6 | 19.1 | 18.8 | 18.1 |
| Subtotal | 53.4 | 38.2 | 32.1 | 29.2 | 29.6 | 36.4 |
| Subtotal bulk: | | | | | | |
| China | 99.5 | 98.1 | 99.8 | 99.8 | 99.7 | 99.4 |
| Other countries | 94.5 | 92.9 | 94.2 | 96.4 | 96.5 | 97.3 |
| Subtotal | 96.1 | 94.6 | 96.9 | 98.1 | 98.2 | 98.5 |
| Total honey: | | | | | | |
| China | 32.2 | 33.0 | 48.6 | 52.4 | 52.7 | 55.8 |
| All other countries | 67.8 | 67.0 | 51.4 | 47.6 | 47.3 | 44.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Compiled from official statistics of the U.S. Department of Commerce.

## Figure 12. Honey: U.S. imports from China, 1989-93




* Annualized based on 1992 experience.

Source: Table 26.

Table 27
Honey: U.S. production and imports from China, 1989-93

| Item | 1989 | 1990 | 1991 | 1992 | 1993[1] |
|---|---|---|---|---|---|
| | Quantity (*million pounds*) | | | | |
| U.S. production | 177.0 | 197.8 | 219.2 | 220.6 | 198.4 |
| Imports from China | 24.9 | 25.5 | 44.8 | 60.1 | 72.4 |
| | Value (*million dollars*) | | | | |
| U.S. production[2] | 89.4 | 107.7 | 121.9 | 123.1 | [4] |
| Imports from China[3] | 8.9 | 10.3 | 19.3 | 26.1 | 28.8 |
| | Unit value (*cents per pound*) | | | | |
| U.S. production[2] | 49.8 | 53.7 | 55.6 | 55.8 | [4] |
| Imports from China[3] | 35.8 | 40.6 | 43.0 | 43.4 | 40.2 |
| | Ratio of imports from China to U.S. production (*percent*) | | | | |
| Based on quantity | 14.1 | 12.9 | 20.4 | 27.2 | 36.5 |
| Based on value | 9.9 | 9.6 | 15.8 | 21.2 | [4] |

[1] Estimated.
[2] Farm value.
[3] Landed, duty-paid.
[4] Not available.

Source: NASS, USDA; and official statistics of the U.S. Department of Commerce.

Table 28
Honey: U.S. consumption and shares of consumption, 1989-93

| Item | 1989 | 1990 | 1991 | 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*million pounds*) | | | | |
| U.S.-produced | 207.5 | 222.7 | 199.8 | 183.8 | 172.9[1] |
| Imports from: | | | | | |
| China | 24.9 | 25.5 | 44.8 | 60.1 | 72.4[2] |
| All other countries | 52.4 | 51.6 | 47.4 | 54.6 | 58.1[2] |
| Subtotal imports | 77.3 | 77.1 | 92.3 | 114.6 | 130.6[2] |
| Total U.S. consumption | 284.8 | 299.8 | 292.0 | 298.5 | 303.5 |
| | Value (*million dollars*) | | | | |
| U.S.-produced[3] | 103.3 | 119.6 | 111.1 | 102.6 | (4) |
| Imports from: | | | | | |
| China | 8.9 | 10.3 | 19.3 | 26.1 | 28.8[2] |
| All other countries | 22.1 | 23.7 | 25.1 | 28.8 | 29.7[2] |
| Subtotal imports | 31.0 | 34.0 | 44.4 | 54.9 | 58.5[2] |
| Total U.S. consumption | 134.3 | 153.6 | 155.5 | 157.5 | (4) |
| | Share of consumption based on quantity (*percent*) | | | | |
| U.S.-produced | 72.9 | 74.3 | 68.4 | 61.6 | 57.9 |
| Imports from: | | | | | |
| China | 8.7 | 8.5 | 15.3 | 20.1 | 23.9 |
| All other countries | 18.4 | 17.2 | 16.2 | 18.3 | 19.1 |
| Subtotal imports | 27.1 | 25.7 | 31.6 | 38.4 | 43.0 |
| Total U.S. consumption | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | Share of consumption based on value (*percent*) | | | | |
| U.S.-produced | 76.9 | 77.9 | 71.5 | 65.1 | (4) |
| Imports from: | | | | | |
| China | 6.6 | 6.7 | 12.4 | 16.6 | (4) |
| All other countries | 16.5 | 15.4 | 16.1 | 18.3 | (4) |
| Subtotal imports | 23.1 | 22.1 | 28.5 | 34.9 | (4) |
| Total U.S. consumption | 100.0 | 100.0 | 100.0 | 100.0 | - |

[1] Derived from data provided by USDA (table 6).
[2] Annualized based on 1992 experience.
[3] Value derived from the unit value of U.S. production (table 7).
[4] Not available.

Source: NASS, USDA; and official statistics of the U.S. Department of Commerce.

## Efforts to Compete

Through its questionnaires the Commission requested that U.S. producers and packers describe any actions that would be taken during a period of import relief that might be granted to compete more effectively with imports of honey from China once relief is terminated. The following information was provided in questionnaire responses:

| PRODUCER | Comments |
|---|---|
| ***..... | "In an attempt to compete with the China honey, we've put in all the latest equipment available, increased our bee colony count per employee, etc. With 40% of our cost of production going for labor, we have found we cannot compete against 10 cents per hour labor paid in China." |
| ***..... | "There is little more we can do. We have cut back everything so that we lose as little as possible." |
| ***..... | "Increase payment of old debt. Restructure management to created efficiencies. Replace old worn out equipment. Hopefully, prices will rise to acceptable level to make a profit instead of showing losses." |
| ***..... | "We would support and participate in industry efforts to increase the consumption of honey and in efforts to help the consumer understand the superior quality and characteristics of domestic honey. Increased revenue subsequent to relief would allow us to explore the development of new technology, upgrade equipment and machinery and also to devote more resources to increasing our sales." |
| ***..... | "(w)e will continue our struggle to try to reduce our business debt. We are interested in honey production and pollination only. We may try to slightly increase our colony count." |
| ***..... | "Down-size operation to a point that required less labor. Mechanize production equipment to require less labor." |
| ***..... | "We will continue to try to reduce our cost of production. However, beekeeping is labor intensive and honeybees can only be handled by hand. Much cost of production is mandated by government policy and inflation." |
| ***..... | "Increase in income could result in upgrades of equipment, reconstruction of honey plant and purchase of trucks. We need also to hire more help, increase number of hives, and acquire more pollination contracts." |
| ***..... | "Upgrade equipment -- extracting and trucks, etc. New bee hives." |
| ***..... | "If prices rebound to a level where I can invest in new equipment and take more steps toward combating mites and increase feeding for increased numbers of bees in colonies these are the actions I would take." |
| ***..... | "We have taken all the action we can." |

| PACKER | Comments |
|---|---|
| ***..... | "Upgrade equipment." |
| ***..... | "It will help relieve the financial burden on my firm because of low honey prices." |
| ***..... | "Relief as described would mean loss of sales in the food ingredient sector of our business! It represents about ***% of our total sales. It is very price sensitive in relation to sugar and corn sweeteners. It would mean that expansion would not occur because of lost business to sugar and corn sweeteners. We would have to seek alternative import sources." |
| ***..... | "I would look into new marketing areas that are not possible now because of low margin profits." |
| ***..... | "Increase use of domestic honey." |
| ***..... | "Raise prices, increase advertising, establish new markets presently dominated by lower price Chinese honey." |
| ***..... | "New marketing strategies to gain back volume we once had. Plant volume is key to holding costs down." |
| ***..... | "We are a packer who must be competitive, so we will look for low priced honey from any source. We do not want any action against any country." |
| ***..... | "New marketing strategies. Sales should expand, allowing possible upgrades in plant operation." |
| ***..... | "The bulk of our business volume comes from industrial sales. In order to compete effectively, these industrial users must contract with their suppliers up to a year in advance. Increased duties would substantially increase the cost of honey, thus forcing us into the position of either forcing renegotiation of exiting contracts, or else likely going out of business." |
| ***..... | "Reduce sales efforts, lay-off sales people. Re-evaluate current export projects." |
| ***..... | "Increased sales opportunities predicated on better competitive pricing. Resulting cash flow would allow ability to upgrade equipment and increase inventory levels." |
| ***..... | "Educate end users to use US product rather than imports, therefore making the demand higher for US products." |
| ***..... | "(i)mport more honey from Australia, Mexico, Chile, and Argentina." |

## Prices

### Marketing Considerations

Honey prices vary by color, floral source, container size, stage of processing, location, and season. As mentioned earlier, lighter colored honey is usually sold for table use and is priced higher than darker colored honey, which is chiefly sold for industrial uses.[84] However, floral source will affect the color, and specialty honeys such as blackberry, orange blossom, and tupelo receive a premium price. In addition, honey prices will vary depending on whether the shipments are bulk wholesale shipments of unprocessed honey or retail sales of processed honey. Prices also differ depending on the region of the country and the season.

Chinese honey is imported and sold to packers in closed-top drums, whereas U.S.-produced honey is sold in open-top drums. Several packers reported that they prefer open-top drums, which allow for easier inspection and testing of the honey. At all stages of distribution, labeling of country of origin is required by law. However, when imported honey is sold by packers it is usually blended with U.S.-produced honey and/or honey imported from other countries. Labeling laws for retail packages require packers to specify countries of origin for foreign honey accounting for at least 75 percent of the foreign honey used in a particular container.

Quality, price, and availability are the major factors considered by packers in deciding from whom to purchase honey. Availability is highly important to packers because of long-term contracts with their retail and industrial customers. Almost all import sales are on a contract basis, whereas U.S. producers of honey often sell on a spot basis. Importer contract lengths are generally about 6 months but may be for a year or longer. Several packers indicated in their questionnaire responses that purchasing imports ensures more stable prices and availability in order to meet their contracts with end users.[85] In addition, importers usually sell honey in much larger quantities than U.S. producers, with minimum purchases of one full container, approximately 35,000 pounds of honey.

Packers of honey sell mainly to industrial users, retailers, and the food service industry. In their questionnaire responses, many packers reported that sales to industrial users have increased in the past 3 years while sales of honey to retailers have been flat or have declined. The National Honey Board, which was established in 1986, has promoted honey nationwide and increased demand for honey, particularly as an ingredient in processed foods. Prior to this, there was not much national advertising and few national marketing campaigns for honey.

### Quality Considerations

Nearly 60 percent of packers responding to the Commission's questionnaire reported that quality was the most important factor in deciding from whom to purchase honey. In addition, more than half of the packers responding to the Commission's questionnaire reported that the quality of honey imported from China was inferior to U.S.-produced honey.

Flavor was cited most often by packers as the area in which quality of U.S.-produced honey and Chinese honey differed. Differences in flavor may stem from the different floral sources used in United States than in China. Also, packers reported that some Chinese honey has a sour taste due to

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[84] Lighter colored honey may also be used in some industrial applications. For example, white honey is used in honey-flavored meats. Posthearing brief of The American Beekeeping Federation, Inc. and the American Honey Producers Association, p. 30.

[85] Bill Gamber, of Dutch Gold, the largest independent packer in the United States, said in an interview appearing in Bee Culture magazine that "(i)t's difficult to contract long range U.S. honey and to cover the long range planning we have to do, we sometimes must go foreign." He also added "price plays some role in buying foreign honey, but availability is more the key." Bee Culture, Feb. 1993, p. 95.

fermentation. Packers also reported that higher moisture levels in Chinese honey were another source of quality differences. Several packers reported that they sell imported honey from China only for industrial purposes, which can use darker, higher moisture honey than that sold for table use.

Adulteration (that is, the addition of high-fructose corn syrup) and contamination were also reportedly common problems with imported honey from China. For example, about one-quarter of the imported Chinese honey received by Sioux Honey Association was rejected because of adulteration or contamination.[86] Other packers reported similar problems with imported honey from China.

A few packers thought that the quality of the Chinese product was superior to honey produced in the United States because there is less variation in the quality and more testing carried out in China. These packers reported that Chinese honey was more consistent in color and flavor, and of better quality than U.S.-produced honey for industrial applications.

**Prices of Substitute Products**

While other sweeteners, such as high fructose corn syrup and sugar, are much less expensive than honey, products containing honey as an ingredient can command a higher price. A survey by the National Honey Board indicated that 90 percent of consumers surveyed were willing to pay up to 20 percent more for products which contained honey, as opposed to other sweeteners. Honey can also be blended with corn syrup, thus reducing the price considerably. Prices of honey and prices of two alternative sweeteners, high fructose corn syrup and refined beet sugar, are shown in figure 13.

**Questionnaire Price Data**

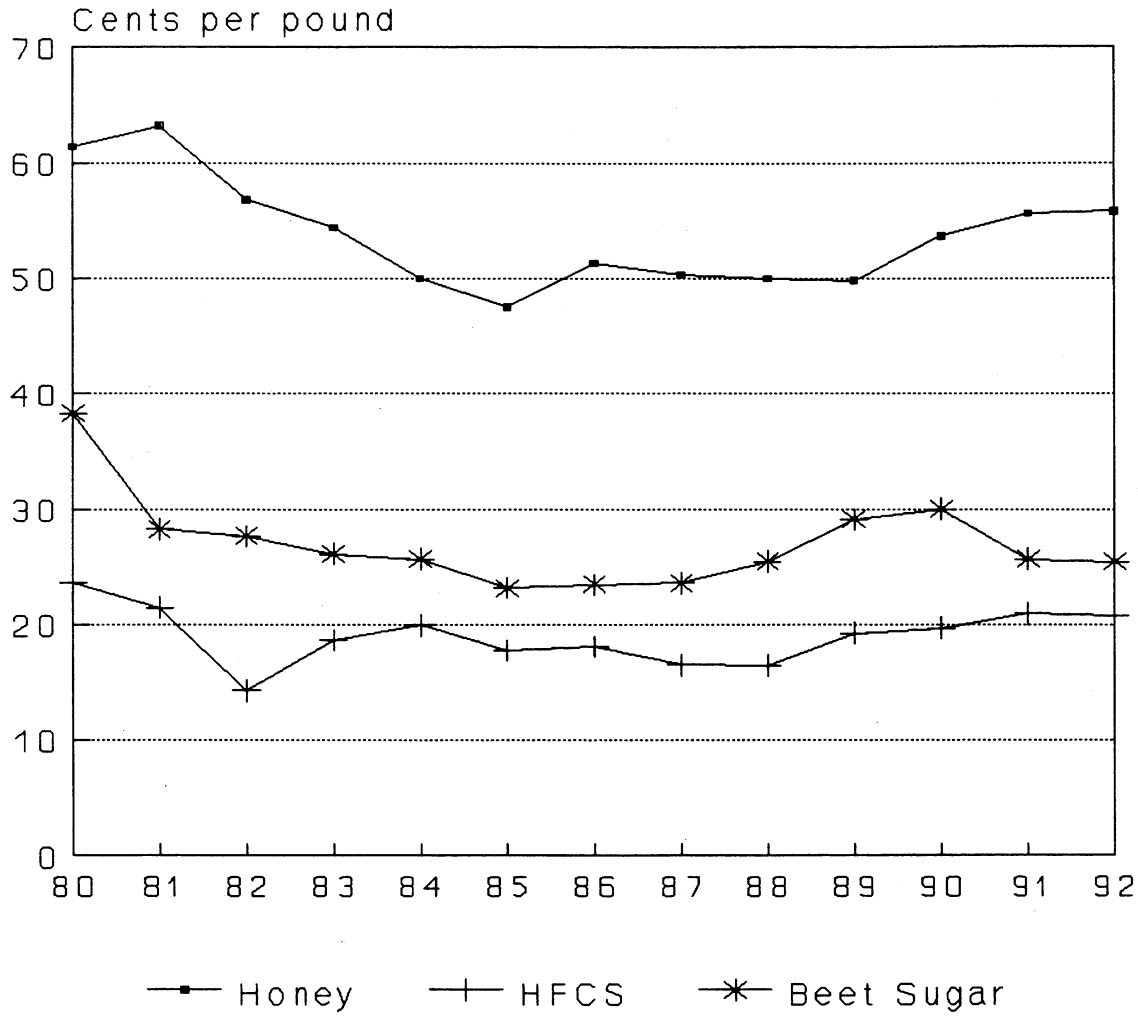
The Commission requested packers to report the total quantity and total f.o.b. value of purchases in each quarter during January 1990-September 1993 of each of the following four types of honey:

Product 1: white (0-34mm)
Product 2: extra light amber (35-50mm)
Product 3: light amber (51-86mm)
Product 4: amber (greater than 86mm)

Packers were requested to report information for purchases of U.S.-produced and imported honey from China shipped in 55 gallon drums.[87] Twenty-six packers reported pricing data. Weighted-average f.o.b. prices and quantities are shown in tables 29-32 and figures 14 and 15.

[86] Testimony of Gary Evans of Sioux Honey Association, TR, p. 48.
[87] Similar pricing information for U.S.-producer and importer sales to packers was also requested, but the information received by the Commission was less comprehensive than that reported by packers.

Figure 13
Sweetener prices: Average honey prices, wholesale list prices for high fructose corn syrup (HFCS), and wholesale refined beet sugar prices, 1980-92




Source: Compiled from official statistics of USDA.

Table 29
Honey: Weighted-average f.o.b. purchase prices of product 1 (white) reported by U.S. packers, and margins of underselling, by quarters, Jan. 1990-Sept. 1993

| Period | United States | | China | | |
|---|---|---|---|---|---|
| | Price | Quantity | Price | Quantity | Margin |
| | *Per pound* | *1,000 pounds* | *Per pound* | *1,000 pounds* | *Percent* |
| 1990: | | | | | |
| Jan.-Mar | $0.45 | 15,269 | $0.42 | 1,558 | 5.0 |
| Apr.-June | .46 | 9,840 | .45 | 1,460 | 1.9 |
| July-Sept | .48 | 15,800 | .47 | 965 | 2.9 |
| Oct.-Dec | .49 | 22,445 | .49 | 2,681 | 1.8 |
| 1991: | | | | | |
| Jan.-Mar | .51 | 13,348 | .48 | 6,382 | 5.8 |
| Apr.-June | .52 | 8,755 | .50 | 2,828 | 3.8 |
| July-Sept | .55 | 22,239 | .49 | 1,014 | 11.7 |
| Oct.-Dec | .55 | 20,878 | .50 | 1,378 | 9.5 |
| 1992: | | | | | |
| Jan.-Mar | .54 | 13,371 | .50 | 3,706 | 7.2 |
| Apr.-June | .54 | 10,368 | .50 | 2,708 | 6.3 |
| July-Sept | .53 | 21,246 | .49 | 1,959 | 7.5 |
| Oct.-Dec | .53 | 20,649 | .46 | 3,313 | 13.7 |
| 1993: | | | | | |
| Jan.-Mar | .53 | 13,615 | .47 | 2,730 | 11.6 |
| Apr.-June | .53 | 12,039 | .46 | 2,873 | 12.9 |
| July-Sept | .53 | 23,833 | .45 | 3,970 | 14.2 |

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 30
Honey: Weighted-average f.o.b. purchase prices of product 2 (extra light amber) reported by U.S. packers, and margins of underselling, by quarters, Jan. 1990-Sept. 1993

| Period | United States | | China | | |
|---|---|---|---|---|---|
| | Price | Quantity | Price | Quantity | Margin |
| | *Per pound* | *1,000 pounds* | *Per pound* | *1,000 pounds* | *Percent* |
| 1990: | | | | | |
| Jan.-Mar | $0.42 | 2,727 | $0.39 | 1,358 | 6.6 |
| Apr.-June | .42 | 3,197 | .40 | 2,194 | 5.4 |
| July-Sept | .45 | 3,889 | .41 | 1,412 | 8.7 |
| Oct.-Dec | .46 | 4,661 | .44 | 2,753 | 5.5 |
| 1991: | | | | | |
| Jan.-Mar | .49 | 3,598 | .46 | 1,960 | 5.4 |
| Apr.-June | .50 | 2,720 | .47 | 1,637 | 5.3 |
| July-Sept | .52 | 4,802 | .45 | 1,478 | 12.9 |
| Oct.-Dec | .52 | 3,490 | .45 | 3,691 | 14.2 |
| 1992: | | | | | |
| Jan.-Mar | .52 | 2,881 | .47 | 4,887 | 8.8 |
| Apr.-June | .51 | 2,209 | .49 | 4,514 | 4.3 |
| July-Sept | .50 | 3,586 | .48 | 3,616 | 5.0 |
| Oct.-Dec | .50 | 3,521 | .46 | 3,662 | 8.1 |
| 1993: | | | | | |
| Jan.-Mar | .50 | 2,149 | .46 | 4,556 | 8.1 |
| Apr.-June | .50 | 2,218 | .45 | 4,125 | 10.5 |
| July-Sept | .50 | 3,050 | .44 | 5,253 | 12.2 |

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 31
Honey: Weighted-average f.o.b. purchase prices of product 3 (light amber) reported by U.S. packers, and margins of underselling (overselling), by quarters, Jan. 1990-Sept. 1993

| Period | United States | | China | | |
|---|---|---|---|---|---|
| | Price | Quantity | Price | Quantity | Margin |
| | *Per pound* | *1,000 pounds* | *Per pound* | *1,000 pounds* | *Percent* |
| 1990: | | | | | |
| Jan.-Mar | $0.40 | 3,814 | $0.40 | 1,506 | 0.4 |
| Apr.-June | .41 | 3,203 | .42 | 774 | (.9) |
| July-Sept | .44 | 4,251 | .44 | 985 | .2 |
| Oct.-Dec | .45 | 3,936 | .42 | 1,778 | 6.4 |
| 1991: | | | | | |
| Jan.-Mar | .48 | 4,395 | .48 | 2,331 | 1.5 |
| Apr.-June | .49 | 4,010 | .48 | 916 | 2.5 |
| July-Sept | .51 | 5,097 | .46 | 2,111 | 9.2 |
| Oct.-Dec | .50 | 4,216 | .49 | 1,732 | 1.9 |
| 1992: | | | | | |
| Jan.-Mar | .51 | 3,852 | .49 | 2,900 | 4.0 |
| Apr.-June | .50 | 2,351 | .48 | 2,685 | 5.3 |
| July-Sept | .49 | 5,924 | .49 | 1,815 | .7 |
| Oct.-Dec | .50 | 5,761 | .49 | 1,872 | 2.3 |
| 1993: | | | | | |
| Jan.-Mar | .49 | 4,599 | .41 | 2,740 | 17.1 |
| Apr.-June | .49 | 3,305 | .45 | 2,185 | 7.9 |
| July-Sept | .48 | 3,923 | .43 | 4,898 | 10.2 |

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

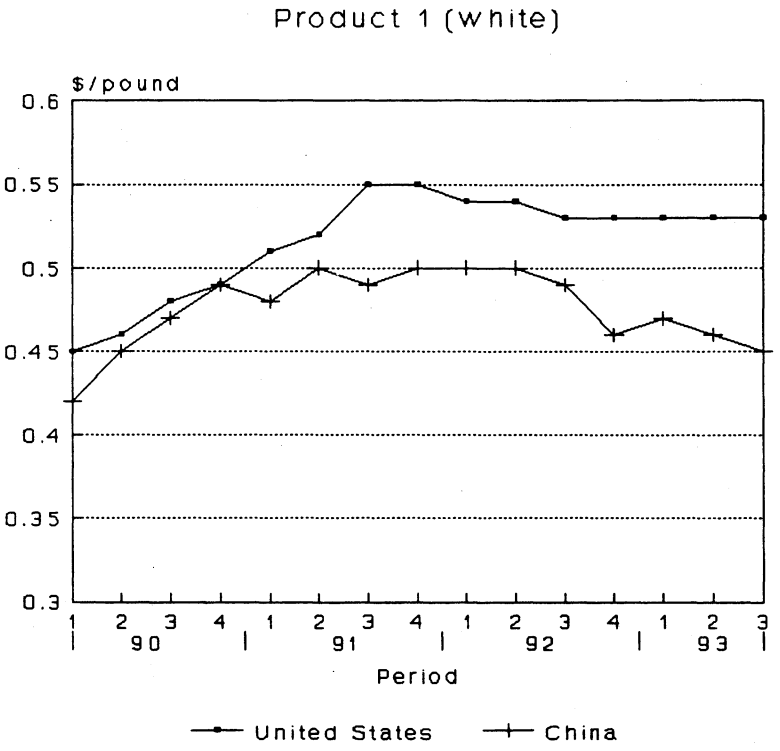
Table 32
Honey: Weighted-average f.o.b. purchase prices of product 4 (amber) reported by U.S. packers, and margins of underselling (overselling), by quarters, Jan. 1990-Sept. 1993

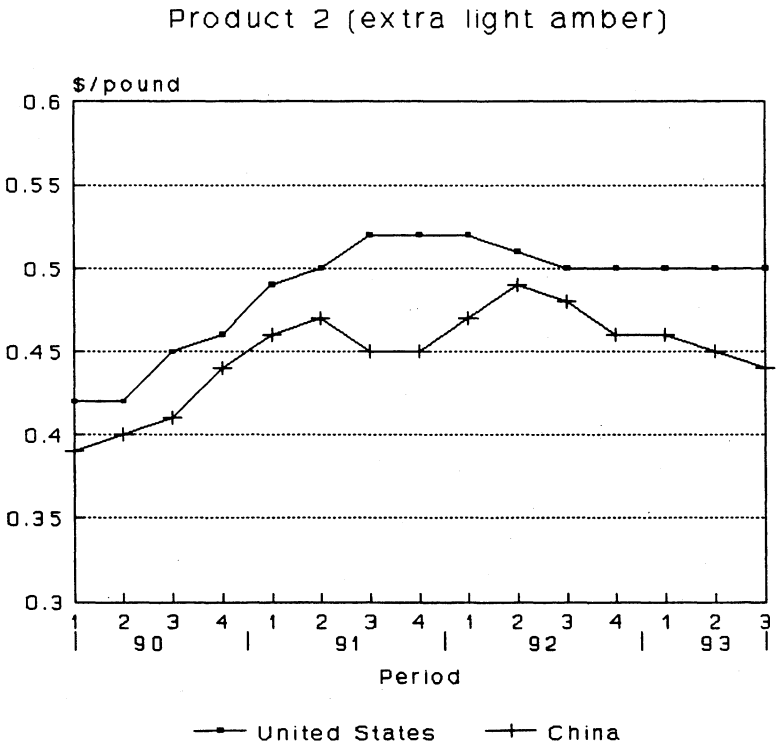
| Period | United States | | China | | |
|---|---|---|---|---|---|
| | Price | Quantity | Price | Quantity | Margin |
| | *Per pound* | *1,000 pounds* | *Per pound* | *1,000 pounds* | *Percent* |
| 1990: | | | | | |
| Jan.-Mar | $0.39 | 1,390 | $0.43 | 82 | (9.5) |
| Apr.-June | .42 | 1,143 | .42 | 176 | (.7) |
| July-Sept | .43 | 395 | .41 | 70 | 4.1 |
| Oct.-Dec | .45 | 2,308 | .41 | 141 | 8.3 |
| 1991: | | | | | |
| Jan.-Mar | .49 | 1,287 | .46 | 70 | 5.4 |
| Apr.-June | .48 | 740 | .48 | 36 | (1.3) |
| July-Sept | .50 | 513 | (1) | (1) | (2) |
| Oct.-Dec | .50 | 1,454 | .49 | 111 | 2.7 |
| 1992: | | | | | |
| Jan.-Mar | .52 | 692 | .42 | 109 | 19.8 |
| Apr.-June | .47 | 495 | .48 | 290 | (2.4) |
| July-Sept | .49 | 291 | .48 | 73 | 2.2 |
| Oct.-Dec | .49 | 1,469 | .48 | 176 | 1.6 |
| 1993: | | | | | |
| Jan.-Mar | .49 | 666 | .48 | 616 | 1.0 |
| Apr.-June | .47 | 854 | .40 | 101 | 15.4 |
| July-Sept | .47 | 96 | .46 | 1,255 | 2.1 |

[1] No sales reported.
[2] Margin not calculated.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

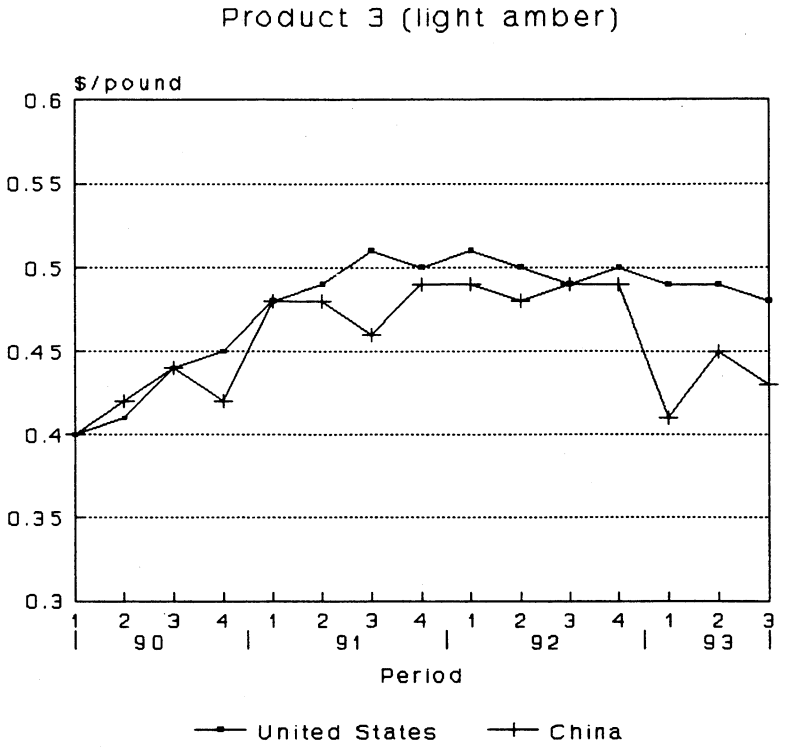
Figure 14
Honey: Weighted-average f.o.b. purchase prices of product 1 (white) and product 2 (extra light amber) reported by U.S. packers, by quarters, Jan. 1990-Sept. 1993

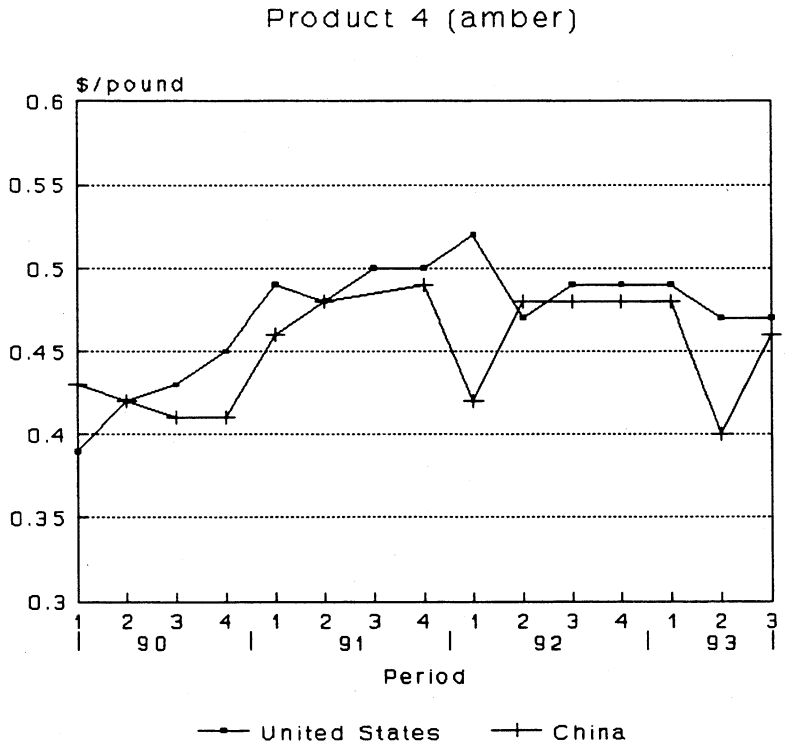



Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 15
Honey: Weighted-average f.o.b. purchase prices of product 3 (light amber) and product 4 (amber) reported by U.S. packers, by quarters, Jan. 1990-Sept. 1993




Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

## Price Trends and Comparisons

Data collected by the Commission show that prices of bulk, unprocessed U.S.-produced honey increased by 22 to 31 percent during 1990-91, with greater percentage price increases for darker colored honey than for white and extra light amber honey. Prices then declined by 4 to 10 percent during 1992-93, with greater percentage price decreases for darker colored honey.

Prices of honey imported from China followed a somewhat similar trend except that prices of the Chinese product declined more sharply during the last part of 1992 and 1993. Prices paid by packers for U.S.-produced honey were higher than prices paid for honey imported from China in almost every quarter. The largest price differences occurred during the latter part of 1991 and during 1993. Differences in quality between U.S.-produced honey and that imported from China and larger volume per sale by importers may account for some of the difference in price.

In addition, price differentials were greater for white and extra light amber honey than for light amber and amber honey. Quality, especially flavor, is of more concern to users of lighter-colored honey who purchase white and extra light amber honey at a premium over darker colors because of its flavor characteristics. Therefore, price differences between U.S.-produced and Chinese honey stemming from quality and flavor differences might be expected to be greater for lighter-colored honey.[88]

Pricing data were also available from published reports. U.S.-producer prices for unprocessed honey are shown in figure 16 and retail prices are shown in figure 17. Prices of bulk honey and retail honey both increased by about 15 percent during January 1990-November 1993. Long-term honey prices, shown in figure 13, decreased during 1981-85, were flat during 1986-89, and then increased from 1989 to 1992.

## Prices of Non-subject Imports

Quarterly average unit values of imports from Argentina, Canada, and Mexico, as well as those of Chinese and U.S.-produced honey, are shown in figures 18 and 19. Prices of imports from Canada were higher than other import prices and prices of U.S.-produced honey. Prices of imports from Argentina, although lower than prices of U.S.-produced honey, were higher than prices for honey from China and Mexico. Honey imported from Mexico appears to compete more directly with honey imported from China than does honey from other import sources.

## Exchange Rates

The nominal value of the Chinese yuan (figure 20) depreciated by 18.1 percent in relation to the U.S. dollar during January 1990-September 1993. Producer price index information for China is unavailable, thus real exchange rates cannot be calculated.

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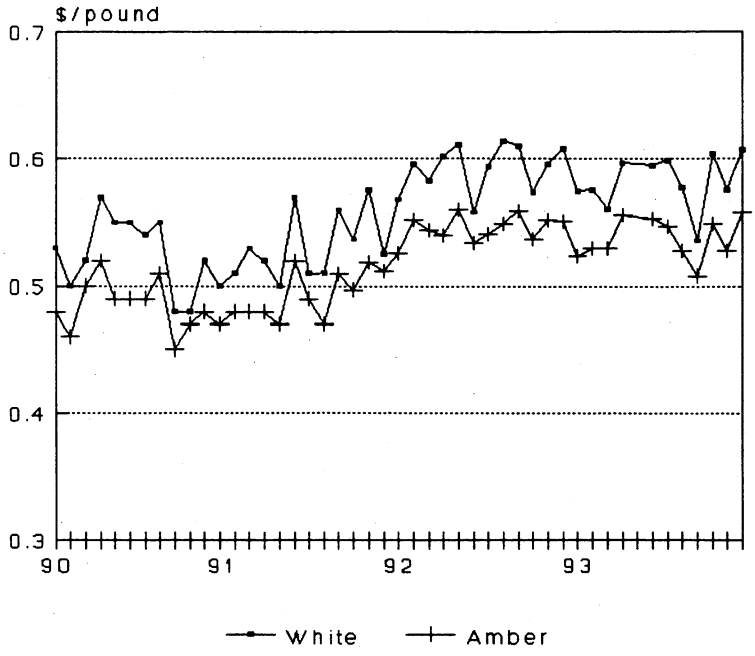
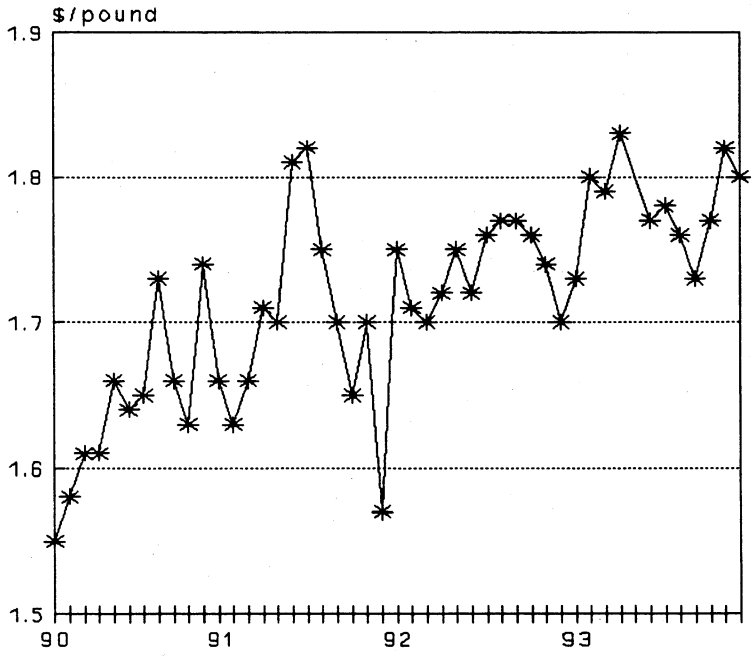
[88] According to the prehearing brief of the Honey Users Council of America, p. 25, honey from China is used primarily for industrial end uses and in private label brands for retail sale. For these users, quality is likely to be less important than it is for packers selling their own brand-name honey.

Figure 16
Honey: Average monthly f.o.b. U.S.-producer prices of extracted, unprocessed honey sold to packers in 55-gallon drums, Jan. 1990-Nov. 1993



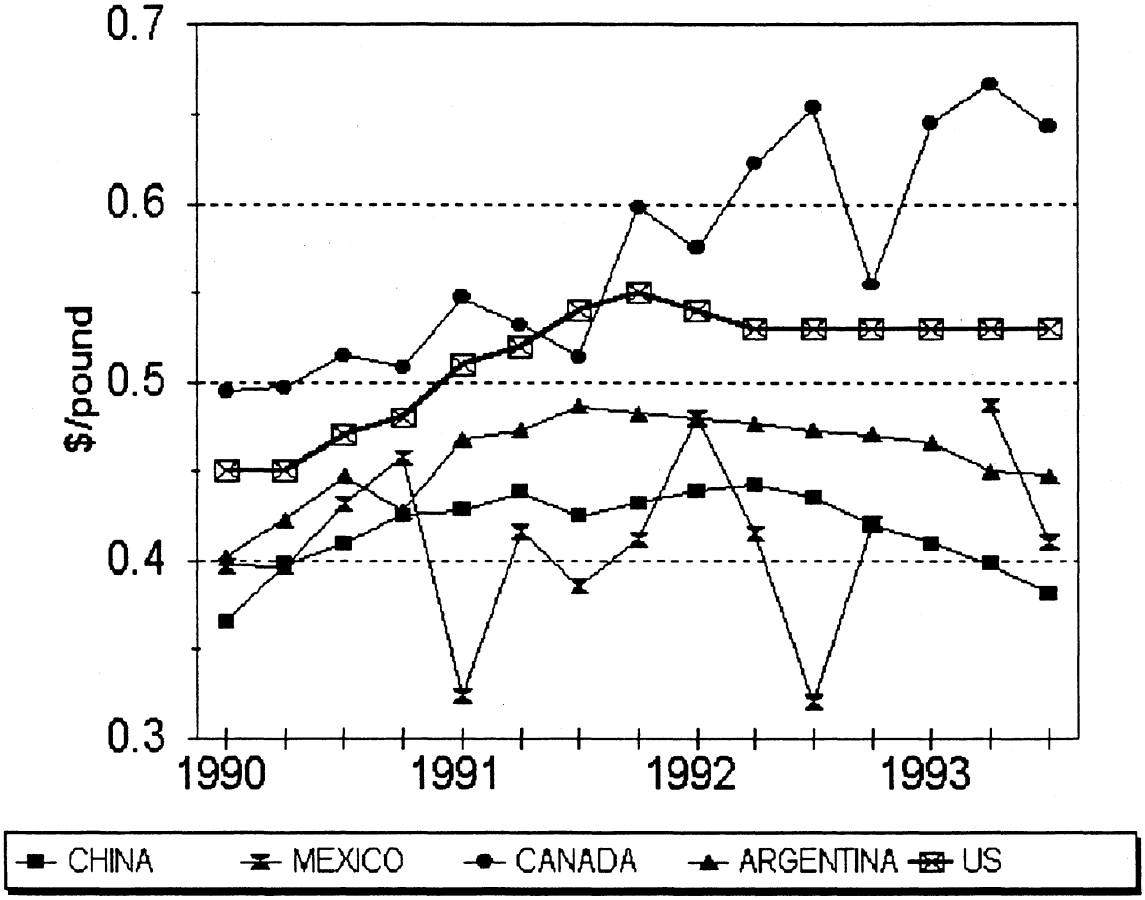

Source: Compiled from data published in Bee Culture monthly reports.

Figure 17
Average monthly retail sales prices for 1-pound containers of honey, Jan. 1990-Nov. 1993



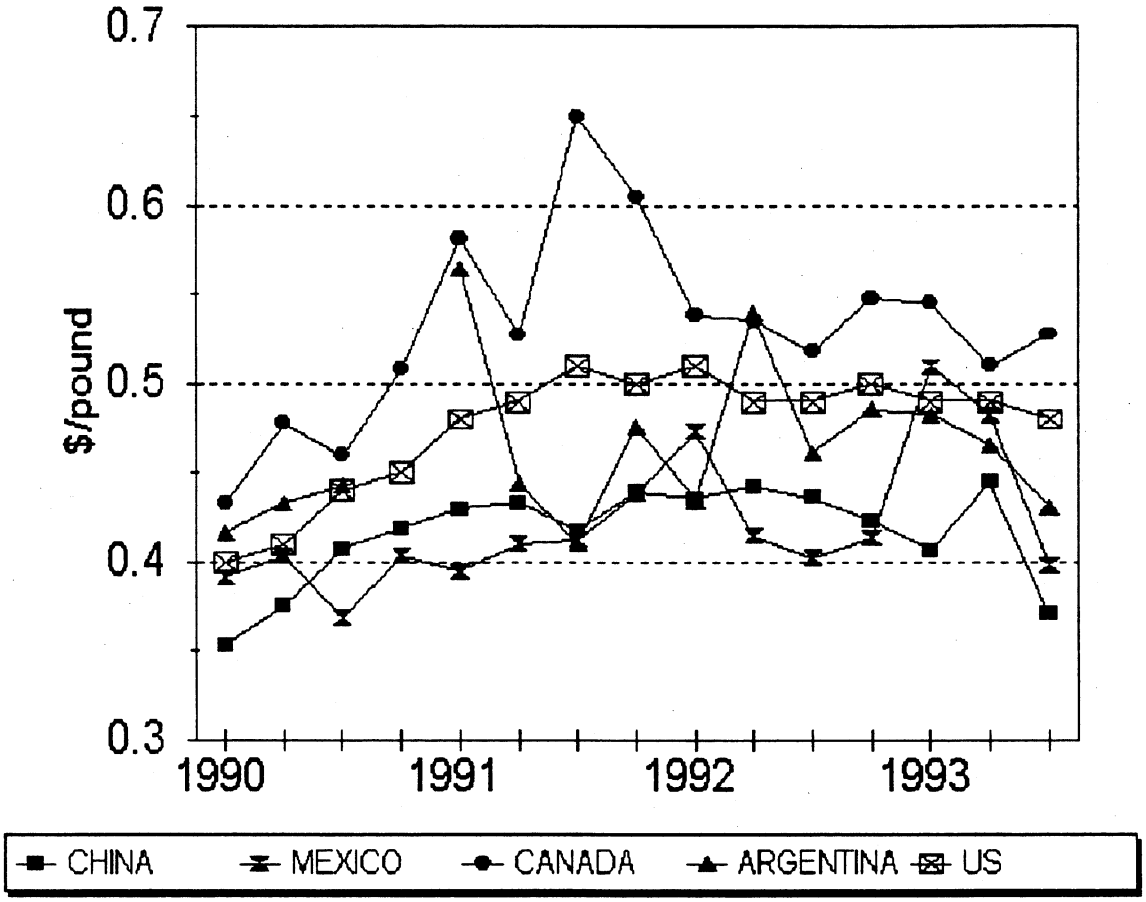

Source: Compiled from data published in Bee Culture monthly reports.

Figure 18
Extra light amber and lighter honey: Average c.i.f., duty-paid unit values for honey from major sources of imports and f.o.b. prices for U.S.-produced honey, by quarters, Jan. 1990-Sept.1993



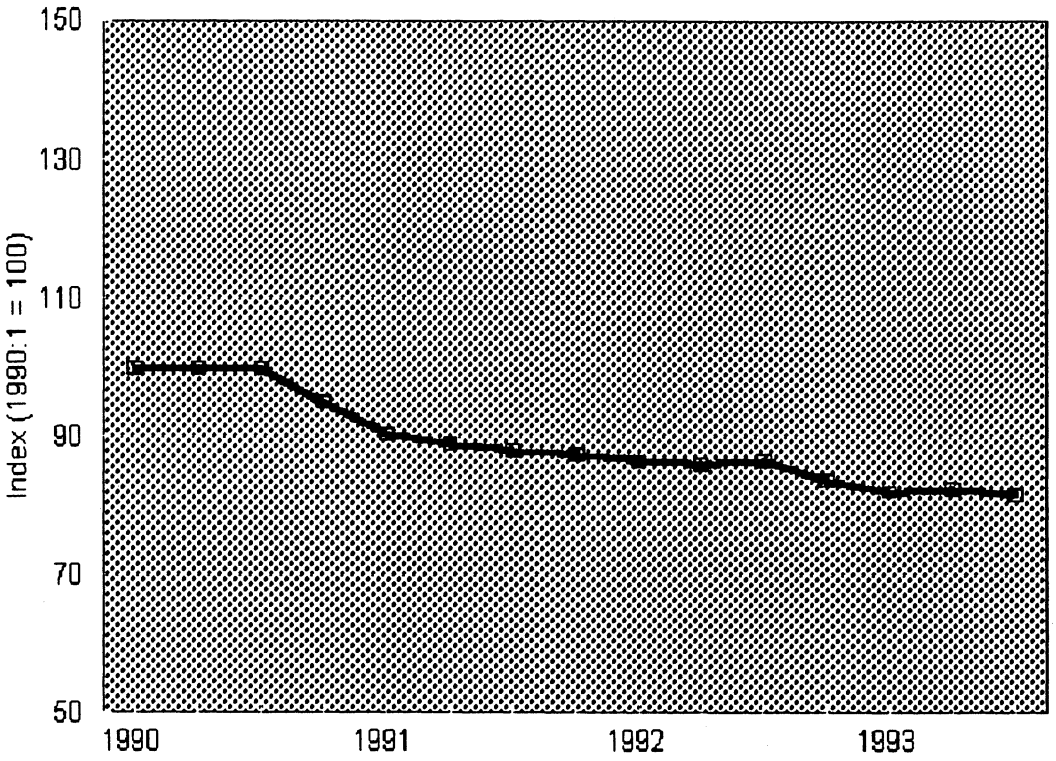

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and official statistics of the U.S. Department of Commerce.

Figure 19
Light amber and darker honey: Average c.i.f., duty-paid unit values for honey from major sources of imports and f.o.b. prices for U.S.-produced honey, by quarters, Jan. 1990-Sept. 1993




Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and official statistics of the U.S. Department of Commerce.

Figure 20
Indexes of the nominal exchange rates between the U.S. dollar and Chinese yuan, by quarters, Jan. 1990-Sept. 1993




Source: International Monetary Fund, International Financial Statistics, Dec. 1993

## Lost Sales and Lost Revenues

A small proportion of producers, producers/packers, and packers responding to the Commission's questionnaire reported specific lost sales and lost revenues allegations as shown in the tabulation below.

| | Number of sales | Quantity *Million pounds* | Value *1,000 dollars* |
|---|---|---|---|
| Lost revenues | | | |
| Producers and producer/packers | 28 | 4.71 | 101 |
| Packers[89] | 14 | 3.54 | 244 |
| Lost Sales | | | |
| Producers and producer/packers | 21 | 3.65 | 1,934 |
| Packers[89] | 30 | 14.27 | 9,003 |

Staff attempted to contact each of the purchasers named in the allegations and the information obtained from these purchasers is discussed below. In many cases, purchasers did not know the country of origin of the honey purchased or did not know the percentage of honey from each country contained in honey blended by packers. In addition, most of the producers and packers could not provide full information and most did not know the prices quoted to purchasers for the Chinese honey in the allegations.

### Lost Sales and Lost Revenues Reported by Producers and Producer/Packers

*** alleged that in 1991 it lost a contract to sell *** pounds of honey at $*** per pound to *** due to lower-priced Chinese imports. *** said that his company purchased only U.S.-produced honey for sale to restaurants. He said that *** changed suppliers, from *** to ***, because *** offered a lower price and was a local distributor, but did not purchase imported honey from either supplier.

*** also named *** in a *** alleged lost sale involving *** pounds of honey *** priced at $*** per pound. The spokesperson at *** said that her company no longer purchases honey as it no longer makes ***, and did not comment further on the allegation.

*** honey producers, ***, allegedly lost revenues and sales involving *** during 1990-93. *** instances of lost revenues were reported, totaling *** million pounds of honey and $***. In addition, *** lost sale totaling *** pounds and $*** was reported. *** said that the quantities and values sounded correct. In addition, he said that he purchased honey from China because it was priced lower than U.S.-produced honey and that prices for U.S.-produced honey fell by $0.03 per pound during 1992-93 because of ***.

*** named *** in *** instances of lost revenues in ***. The sales involved *** pounds of *** and reported lost revenues totaled $***. *** could not comment on the specific allegations but

[89] Allegations reported by *** accounted for *** of the 14 lost revenues allegations and *** of the 30 lost sales allegations reported by packers.

said that "the only reason to purchase Chinese honey for us is price or a shortage of domestic honey. U.S. honey is vastly superior to Chinese."

*** was named by *** in an *** lost revenue allegation and by *** in a *** lost sale allegation. The lost revenue allegation involved *** pounds of honey and $*** in lost revenues, and the lost sale allegation involved *** pounds of honey priced at $***. *** could not specifically address the allegations but said that price was the determining factor in his firm's purchases of honey imported from China.

*** allegedly lost a sale in *** for *** pounds of honey priced at $***. Staff spoke with ***. *** said that *** purchased *** pounds of imported Chinese honey in 1993 because their domestic supplier did not deliver on time. In general, *** purchases imported honey when domestic honey is not available or domestic suppliers are not dependable. *** purchases Chinese honey mainly for sales to industrial users because the flavor of Chinese honey is not generally suitable for retail sales.

*** allegedly reduced its price from $*** to $*** for *** pounds of *** honey because of lower-priced Chinese honey in a sale to ***. *** denied the allegation, saying that her company had never refused a sale nor changed a price because of imported Chinese honey. In addition, *** said that her firm has not purchased any imported honey in at least three years.

*** was named by *** apiaries, ***, in *** lost revenues allegations during 1991-93. The lost revenues involved *** pounds and $***. *** could not respond to the specific allegations. However, he said that during 1990-92, long-term contracts and pricing offered by the suppliers of the Chinese was one of the major reasons for purchasing imported honey from China. *** said that during 1993, the price differential between U.S.-produced honey and Chinese honey increased due to a large decline in the price of Chinese honey. Therefore, *** increased its purchases of honey from China. *** said that *** continues to buy U.S.-produced honey and other imports because Chinese honey cannot be used for the retail market and because of shipment delays and possible adulteration and/or contamination of honey from China.

**Lost Sales and Lost Revenues Reported by Packers**

*** alleged that it lost a sale in *** for *** pounds of *** honey quoted at $*** because of lower priced imports from China. ***, the purchaser named in the allegation, ***. *** said that *** did not purchase any honey prior to ***. During ***, *** only purchased U.S.-produced honey. *** said that in ***, *** purchased Chinese honey. He said that *** purchased imported honey because of the limited availability of light amber and amber honey from U.S. producers.

*** alleged losing another sale to Chinese honey purchased by ***. The alleged *** lost sale involved *** pounds of honey priced at $***. *** said that *** because it began marketing a private label brand of honey. *** purchased this honey from ***, a packer of U.S.-produced honey.

In another instance, *** allegedly lost a sale in *** totaling *** pounds of *** honey priced at $***. *** was named in the allegation. *** said that his company purchased blends of domestic and imported honey. He indicated that he was aware of the countries of origin of the blended honey, and had purchased blends containing Chinese honey, but he was not aware of the percentage of honey from each country. Because *** did not know the percentage of Chinese honey in the blends he purchased, he was unable to comment on the specific allegation.

*** was named in a *** lost sale allegation by ***. The allegation involved *** pounds of *** priced at $***. ***. *** said that, to his knowledge, *** had purchased only U.S.-produced honey and a small amount of honey produced in Canada.

*** named *** in a lost revenues allegation in which it allegedly was forced to reduce its price on *** pounds of *** honey from $*** per pound to $*** per pound due to lower-priced imports from China. ***. *** said that her company had been contacted by suppliers of Chinese

honey but that it did not purchase Chinese honey because it believed that the Chinese product was of lower quality than the domestic product.

*** also allegedly lost a sale in *** of *** pounds of honey priced at $***. *** was named in the allegation. *** said that he purchased mainly from *** and that he had not switched suppliers in 3 years. To his knowledge, the honey purchased from *** was mainly domestic, although it is also blended with honey from Mexico and/or Canada. *** said he was not aware of the presence of Chinese honey in any of the blends he purchases.

*** also alleged that in *** it lost a sale of *** pounds of *** valued at $*** involving ***. *** said that his firm did not purchase Chinese honey or receive any quotes for Chinese honey during 1992.

# APPENDIX A

# *FEDERAL REGISTER* NOTICE AND USTR LETTER

[Investigation No. TA-406-13]

## Honey From China; Import Investigation

AGENCY: United States International Trade Commission.

ACTION: Institution of an investigation under section 406(a) of the Trade Act of 1974 (19 U.S.C. 2436(a)) and scheduling of a public hearing in connection therewith.

SUMMARY: Following receipt on October 6, 1993, of a request from the United States Trade Representative for an investigation under section 406(a) of the Trade Act of 1974, the Commission instituted investigation No. TA-406-13 to determine, in the case of imports of honey [1] from China, whether market disruption exists with respect to an article produced by a domestic industry. Section 406(e)(2)(A) of the act states that market disruption exists within a domestic industry whenever "imports of an article, like or directly competitive with an article produced by such domestic industry, are increasing rapidly, either absolutely or relatively, so as to be a significant cause of material injury, or threat thereof, to such domestic industry." The Commission will make its injury and, if necessary, its remedy determinations in this investigation by January 7, 1994.

EFFECTIVE DATE: October 6, 1993.

FOR FURTHER INFORMATION CONTACT: Diane J. Mazur (202-205-3184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

SUPPLEMENTARY INFORMATION:

### Participation in the Investigation

Persons wishing to participate in the investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after publication of this notice in the Federal Register. The Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to this investigation upon the expiration of the period for filing entries of appearance.

### Hearing

The Commission will hold a hearing in connection with this investigation beginning at 9:30 a.m. on December 2, 1993, at the U.S. International Trade Commission Building. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission on or before November 23, 1993. All persons desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:30 a.m. on November 29, 1993, at the U.S. International Trade Commission Building. Oral testimony and written materials to be submitted at the hearing are governed by §§ 201.6(b)(2) and 201.13(f) of the Commission's rules.

### Written Submissions

Each party is encouraged to submit a prehearing brief to the Commission. The deadline for filing prehearing briefs is November 30, 1993. Parties may also file posthearing briefs. The deadline for filing posthearing briefs is December 7, 1993. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before December 7, 1993. All written submissions must conform with the provisions of § 201.8 of the Commission's rules; any submissions that contain confidential business information must also conform with the requirements of § 201.6 of the rules.

In accordance with § 201.16(c) of the rules, each document filed by a party to the investigation must be served on all other parties to the investigation (as identified by the service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

### Remedy

Parties are reminded that no separate hearing on the issue of remedy will be held. Those parties wishing to present arguments on the issue of remedy may do so orally at the hearing or in their prehearing or posthearing briefs or other written submissions.

Authority: This investigation is being conducted under authority of § 406 of the Trade Act of 1974. This notice is published pursuant to § 206.3 of the Commission's rules.

By order of the Commission.

Issued: October 15, 1993.

Donna R. Koehnke,

*Secretary.*

[FR Doc. 93-25776 Filed 10-19-93; 8:45 am]

BILLING CODE 7020-02-P-M

[1] The honey products included in this investigation are imports of natural honey, artificial honey mixed with natural honey, and preparations of natural honey, provided for in heading 0409 and subheadings 1702.90 and 2106.90 of the Harmonized Tariff Schedule of the United States (HTS).

Oct 6, 1993

THE UNITED STATES TRADE REPRESENTATIVE
Executive Office of the President
Washington, D.C. 20506

OCT 6 1993

1776

The Honorable Don E. Newquist
Chairman
U.S. International Trade Commission
Washington, DC 20436

Dear Chairman Newquist:

Representatives of the U.S. honey producers have expressed to the Administration and the Congress their great concern with the impact on the domestic honey industry of increased imports of honey from the Peoples Republic of China. U.S. import statistics indicate that imports of honey from China have risen from 25.4 million pounds in 1990 to 59.95 million pounds in 1992, an increase of 136 percent.

To assist the Administration in determining a course of action in this matter, I request, pursuant to section 406(a) of the Trade Act of 1974, that the U.S. International Trade Commission conduct an investigation to determine whether market disruption exists with respect to domestically produced honey as a result of imports from China of natural honey, artificial honey containing natural honey, and preparations of natural honey, provided for in subheadings 0409.00, 1702.90, and 2106.90 of the Harmonized Tariff Schedule of the United States.

Sincerely,

Michael Kantor

MK:hlh

RECEIVED
OFC OF THE SECRETARY
U.S. INTL TRADE COMMISSION
'93 OCT -6 P4:26

# APPENDIX B

# LIST OF WITNESSES

## CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

| | |
|---|---|
| Subject: | HONEY FROM CHINA |
| Inv. No.: | TA-406-13 |
| Date and Time: | December 2, 1993 - 9:30 a.m. |

Sessions were held in connection with the investigation in Courtroom B of the United States International Trade Commission, 500 E St., S.W., Washington, D.C.

Opening Remarks:

| | |
|---|---|
| Side in Support: | Robert M. Bor |
| Side in Opposition: | Spencer S. Griffith/Mike Ingalls |

In Support of a Finding of Market Disruption:

Winston & Strawn
Washington, D.C.
On behalf of

The American Beekeeping Federation, Inc.

Don Schmidt, President
Winner, South Dakota

Troy Fore
Jesup, Georgia

American Honey Producers Association

Richard Adee, President
Bruce, South Dakota

Jerry Stroope
Alvin, Texas

In Support of a Finding of Market Disruption:--Continued

Brent Barkman
Barkman Honey Co.
Hillsboro, Kansas

Buddy Ashurst
American Honey & Beekeeping
El Centro, California

Binford Weaver
Weaver Apiaries
Navasota, Texas

Jim Robertson
Robertson Pollination
Dos Palos, California

Daniel W. Klett, Economic consultant
Capital Trade, Inc.
Washington, D.C. '

David Hackenberg

David Sundberg

Gene Brandi

Lloyd Bill Shearman

Edward F. Gerwin, Jr. )
)--OF COUNSEL
Robert M. Bor )

Sioux Honey Association
Sioux City, Iowa

Gary L. Evans, President

Jerry Probst, Vice President of Research

Mid-U.S. Honey Producers Marketing Association
Concordia, KS

Gary J. Reynolds, President

Dick Ruby, Director from North Dakota

In Opposition to a Finding of Market Disruption:

Akin, Gump, Strauss, Hauer & Feld
Washington, D.C.
On behalf of

Honey Users Council of America
(Importers and Packers Executive Committee):

Sunland International, Inc.
The Impex Group, Inc.
T.W. Burleson & Sons, Inc.
Pure Foods, Inc.
Pure Sweet Honey Farm, Inc.
Deer Creek Honey Farms, Inc.
China Products North America, Inc.
C.M. Goettsche Co., Inc.

Nick Sargeantson, Sunland International

Ron Phipps, China Products
North America, Inc.

Christopher Dunham, Deer Creek
Honey Farms, Inc.

Hans Boedeker

Spencer S. Griffith --OF COUNSEL

Western States Honey Packers and
Dealers Association
Colton, CA

Mike Ingalls, President
Sultan, WA

In Opposition to a Finding of Market Disruption:--Continued

Miller, Canfield, Paddock and Stone
Washington, D.C.
On behalf of

Tianjin Native Produce Import & Export Corporation
Jiangsu Native Produce Import & Export (Group) Corporation
Shanghai Native Produce I/E Corporation
China Shaanxi Native Produce I/E Corporation
China (Tuhsu) Super Food I/E Corporation
Anhui Native Produce I/E Corporation
Henan Native Produce I/E Corporation
Zhejian Native Produce & Animal By-Product I/E Corporation
Ningpo Produce & Animal By-Products I/E Corporation
Shanxi Native Produce & Animal By-Products I/E Corporation
Beijing Native Produce I/E Corporation
Nanjing Native Produce & Animal By-Products I/E Corporation
Inner Mongolia Native Produce & Animal By-Products I/E Corporation
Beijing Bee Products

Mr. Wang Baolin, Deputy Director of China Chamber of Commerce of Importers & Exporters of Foodstuffs Native Produce and Animal By-Products (CCCFNA)

Ms. Ji Ming, Deputy Manager of Shanghai Native Product Import/Export Corporation

Mr. Lu Gao Chao

William E. Perry )
Terry X. Gao )--OF COUNSEL
Johnny C. Chiu )

- End -

# APPENDIX C

# USDA STANDARDS FOR GRADES OF EXTRACTED HONEY

**§ 52.1379 Tolerances for defects.**

TABLE II (ALL STYLES)

| | Total [1] | Major | Severe | Critical |
|---|---|---|---|---|
| Grade A: AQL [2] | 15.0 | 6.5 | 2.5 | 0.4 |
| Grade B: AQL [2] | 25.0 | 12.5 | 6.5 | 1.5 |

[1] Total = Minor + Major + Severe + Critical
[2] AQL expressed as defects per hundred units

**§ 52.1380 Sample size.**

The sample size to determine meeting the requirements of these standards shall be as specified in the "Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products" (7 CFR 52.1-52.83) for lot grading and on-line grading, as applicable.

**§ 52.1381 Quality requirements.**

(a) *Lot grading.* A lot of frozen leafy greens is considered as meeting the requirements for quality if:

(1) The prerequisite requirements specified in § 52.1376 are met; and

(2) The Acceptable Quality Levels (AQL) in Table II are not exceeded.

(b) *On-line grading.* A portion of production is considered as meeting the requirements for quality if:

(1) The prerequisite requirements specified in § 52.1376 are met; and

(2) The Acceptable Quality Levels (AQL) in Table II are not exceeded.

(c) *Single sample unit.* Each single sample unit submitted for quality evaluation will be treated individually and is considered as meeting the requirements for quality if:

(1) The prerequisite requirements specified in § 52.1376 are met; and

(2) The Acceptable Quality Levels (AQL) in Table II are not exceeded.

## Subpart—United States Standards for Grades of Extracted Honey

SOURCE: 50 FR 15861, Apr. 23, 1985, unless otherwise noted.

**§ 52.1391 Product description.**

Extracted honey (hereinafter referred to as honey) is honey that has been separated from the comb by centrifugal force, gravity, straining, or by other means.

**§ 52.1392 Types.**

The type of extracted honey is not incorporated in the grades of the finished product since the type of extracted honey, as such, is dependent upon the method of preparation and processing, and therefore is not a factor of quality for the purpose of these grades. Extracted honey may be prepared and processed as one of the following types:

(a) *Liquid honey.* Liquid honey is honey that is free from visible crystals.

(b) *Crystallized honey.* Crystallized honey is honey that is solidly granulated or crystallized, irrespective of whether candied, fondant, creamed, or spread types of crystallized honey.

(c) *Partially crystallized honey.* Partially crystallized honey is honey that is a mixture of liquid honey and crystallized honey.

**§ 52.1393 Styles.**

(a) *Filtered.* Filtered honey is honey of any type defined in these standards that has been filtered to the extent that all or most of the fine particles, pollen grains, air bubbles, or other materials normally found in suspension, have been removed.

(b) *Strained.* Strained honey is honey of any type defined in these standards that has been strained to the extent that most of the particles, including comb, propolis, or other defects normally found in honey, have been removed. Grains of pollen, small air bubbles, and very fine particles would not normally be removed.

**§ 52.1394 Definitions of terms.**

As used in these U.S. standards, unless otherwise required by the context, the following terms shall be construed, respectively, to mean:

(a) *Absence of defects* means the degree of freedom from particles of comb, propolis, or other defects which may be in suspension or deposited as sediment in the honey. Classifications for the factor of quality, absence of defects, are:

(1) *Practically free*—the honey contains practically no defects that affect the appearance or edibility of the product.

(2) *Reasonably free*—the honey may contain defects which do not materially affect the appearance or edibility of the product.

(3) *Fairly free*—the honey may contain defects which do not seriously affect the appearance or edibility of the product.

(b) *Air bubbles* mean small visible pockets of air in suspension that may be numerous in the honey and contribute to the lack of clarity in filtered style.

(c) *Aroma* means the fragrance or odor of the honey.

(d) *Clarity* means, with respect to filtered style only, the apparent transparency or clearness of honey to the eye and to the degree of freedom from air bubbles, pollen grains, or other fine particles of any material suspended in the product. Classifications for the factor of quality, clarity, are:

(1) *Clear*—the honey may contain air bubbles which do not materially affect the appearance of the product and may contain a trace of pollen grains or other finely divided particles of suspended material which do not affect the appearance of the product.

(2) *Reasonably clear*—the honey may contain air bubbles, pollen grains, or other finely divided particles of suspended material which do not materially affect the appearance of the product.

(3) *Fairly clear*—the honey may contain air bubbles, pollen grains, or other finely divided particles of suspended material which do not seriously affect the appearance of the product.

(e) *Comb* means the wax like cellular structure that bees use for retaining their brood or as storage for pollen and honey. Fine particles of comb in suspension are defects and contribute to the lack of clarity in filtered style.

(f) *Crystallization* means honey in which crystals have been formed.

(g) *Flavor and aroma* means the degree of taste excellence and aroma for the predominant floral source. Classifications for the factor of quality, flavor and aroma, are:

(1) *Good flavor and aroma for the predominant floral source*—the product has a good, normal flavor and aroma for the predominant floral source or, when blended, a good flavor for the blend of floral sources and the honey is free from caramelized flavor or objectionable flavor caused by fermentation, smoke, chemicals, or other causes with the exception of the predominant floral source.

(2) *Reasonably good flavor and aroma for the predominant floral source*—the product has a reasonably good, normal flavor and aroma for the predominant floral source or, when blended, a reasonably good flavor for the blend of floral sources and the honey is practically free from caramelized flavor and is free from objectionable flavor caused by fermentation, smoke, chemicals, or other causes with the exception of the predominant floral source.

(3) *Fairly good flavor and aroma for the predominant floral source*—the product has a fairly good, normal flavor and aroma for the predominant floral source or, when blended, a fairly good flavor for the blend of floral sources and the honey is reasonably free from caramelized flavor and is free from objectionable flavor caused by fermentation, smoke, chemicals, or other causes with the exception of the predominant floral source.

(h) *Floral source* means the flower from which the bees gather nectar to make honey.

(i) *Granulation* means the initial formation of crystals in the honey.

(j) *Pfund color grader* means a color grading device used by the honey industry. It is not the officially approved device for determining color designation when applying these United

States grade standards for the color of honey.

(k) *Pollen grains* mean the granular, dustlike microspores that bees gather from flowers. Pollen grains in suspension contribute to the lack of clarity in filtered style.

(l) *Propolis* means a gum that is gathered by bees from various plants. It may vary in color from light yellow to dark brown. It may cause staining of the comb or frame and may be found in extracted honey.

**§ 52.1395 Recommended sample unit sizes.**

(a) Determination of color designation—the amount of product required to adequately fill a color comparator cell of any approved device used for the determination of honey color.

(b) Factors of quality and analysis—100 g (3.5 oz).

**§ 52.1396 Recommended fill of container.**

The recommended fill of container is not incorporated in the grades of the finished product since fill of container, as such, is not a factor of quality for the purpose of these grades. It is recommended that each container be filled with honey as full as practicable, and with respect to containers of one gallon or less, the honey shall occupy not less than 95 percent of the total capacity of the container.

**§ 52.1397 Color.**

The color of extracted honey is not a factor of quality for the purpose of these grades.

**§ 52.1398 Color designations.**

(a) The color designation of extracted honey is determined (after adjusting for cloudiness in the honey) by means of the USDA approved color standards in accordance with the range as given in Table I.

(b) The respective color designations, applicable range of each color, color range on the Pfund scale, and optical density of freshly prepared caramel-glycerin solutions are shown in Table I.

TABLE I—COLOR DESIGNATIONS OF EXTRACTED HONEY

| USDA color standards designations | Color range USDA color standards | Color range pfund scales millimeters | Optical density [1] |
|---|---|---|---|
| Water white | Honey that is water white or lighter in color | 8 or less | 0.0945 |
| Extra white | Honey that is darker than water white, but not darker than extra white in color. | Over 8 to and including 17 | .189 |
| White | Honey that is darker than extra white, but not darker than white in color. | Over 17 to and including 34. | .378 |
| Extra light amber | Honey that is darker than white, but not darker than extra light amber in color | Over 34 to and including 50. | .595 |
| Light amber | Honey that is darker than extra light amber, but not darker than light amber in color | Over 50 to and including 85. | 1.389 |
| Amber | Honey that is darker than light amber, but not darker than amber in color. | Over 85 to and including 114 | 3.008 |
| Dark amber | Honey that is darker than amber in color | Over 114 | |

[1] Optical Density (absorbance) = $\log_{10}$ (100/percent transmittance), at 560 nm for 3.15 cm thickness for caramel-glycerin solutions measured versus an equal cell containing glycerin.

**§ 52.1399 Tolerance for the designations of color of officially drawn samples.**

When designating the color of samples that have been officially drawn and which represent a specific lot of honey, the lot shall be considered as one color if the number of containers with honey comprised of a darker color does not exceed the applicable acceptance number indicated in the sampling plans contained in 7 CFR 52.38 of the "Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products:" *Provided*, However, that the honey in none of the containers falls below the next darker color designation. Applicable sampling plans and acceptance numbers are shown in Table II.

TABLE II.—SINGLE SAMPLING PLANS AND ACCEPTANCE NUMBERS

| Sample Size (number of sample units) | 3 | 6 | 13 | 21 | 29 |
|---|---|---|---|---|---|
| Acceptance No | 0 | 1 | 2 | 3 | 4 |

§ 52.1400 Grades.

(a) *U.S. Grade A* is the quality of extracted honey that meets the applicable requirements of Table IV or V, and has a minimum total score of 90 points.

(b) *U.S. Grade B* is the quality of extracted honey that meets the applicable requirements of Table IV or V, and has a minimum total score of 80 points.

(c) *U.S. Grade C* is the quality of extracted honey that meets the applicable requirements of Table IV or V, and has a minimum total score of 70 points.

(d) *Substandard* is the quality of extracted honey that fails to meet the requirements of U.S. Grade C.

§ 52.1401 Determining the grade.

Determining the grade from the factors of quality and analysis.

(a) For the factor of analysis, the soluble solids content of extracted honey is determined by means of the refractometer at 20 °C (68 °F). The refractive indices, corresponding percent soluble solids, and percent moisture are shown in Table III. The moisture content of honey and percent soluble solids may be determined by any other method which gives equivalent results.

(b) For the factors of quality, the grade of extracted honey is determined by considering, in conjunction with the requirements of the various grades, the respective ratings for the factors of flavor and aroma, absence of defects, and clarity (except the factor of clarity is excluded for the style of strained).

(c) The relative importance of each factor is expressed numerically on the scale of 100. The maximum number of points that may be given each factor is:

| Factors | Points |
|---|---|
| Flavor and aroma | 50 |
| Absence of defects | 40 |
| Clarity | 10 |
| Total score | 100 |

(d) The factor of clarity for the style of strained extracted honey is not based on any detailed requirements and is not scored. The other two factors (flavor and absence of defects) are scored and the total is multiplied by 100 and divided by 90, dropping any fractions to determine the total score.

(e) Crystallized honey and partially crystallized honey shall be liquified by heating to approximately 54.4°C (130°F) and cooled to approximately 20 °C (68 °F) before determining the grade of the product.

§ 52.1402 Determining the rating for each factor.

The essential variations within each factor are so described that the value may be determined for each factor and expressed numerically. The numerical range for the rating of each factor is inclusive (for example, 37 to 40 points means 37, 38, 39, or 40 points) and the score points shall be prorated relative to the degree of excellence for each factor.

§ 52.1403 Requirements for grades.

TABLE III—REFRACTIVE INDICES, CORRESPONDING PERCENT SOLUBLE SOLIDS, AND PERCENT MOISTURE IN EXTRACTED HONEY [1]

| Refractive index @ 20 °C (range) | Percent soluble solids | Percent moisture |
|---|---|---|
| 1.4817 to 1.4818 | 78.1 | 21.9 |
| 1.4819 to 1.4820 | 78.2 | 21.8 |
| 1.4821 to 1.4823 | 78.3 | 21.7 |
| 1.4824 to 1.4825 | 78.4 | 21.6 |
| 1.4826 to 1.4828 | 78.5 | 21.5 |
| 1.4829 to 1.4830 | 78.6 | 21.4 |
| 1.4831 to 1.4833 | 78.7 | 21.3 |
| 1.4834 to 1.4835 | 78.8 | 21.2 |
| 1.4836 to 1.4838 | 78.9 | 21.1 |
| 1.4839 to 1.4840 | 79.0 | 21.0 |
| 1.4841 to 1.4843 | 79.1 | 20.9 |
| 1.4844 to 1.4845 | 79.2 | 20.8 |
| 1.4846 to 1.4848 | 79.3 | 20.7 |
| 1.4849 to 1.4850 | 79.4 | 20.6 |
| 1.4851 to 1.4853 | 79.5 | 20.5 |
| 1.4854 to 1.4855 | 79.6 | 20.4 |
| 1.4856 to 1.4858 | 79.7 | 20.3 |
| 1.4859 to 1.4860 | 79.8 | 20.2 |

TABLE III—REFRACTIVE INDICES, CORRESPONDING PERCENT SOLUBLE SOLIDS, AND PERCENT MOISTURE IN EXTRACTED HONEY [1]—Continued

| Refractive index @ 20 °C (range) | Percent soluble solids | Percent moisture |
|---|---|---|
| 1.4861 to 1.4863 | 79.9 | 20.1 |
| 1.4864 to 1.4865 | 80.0 | 20.0 |
| 1.4866 to 1.4868 | 80.1 | 19.9 |
| 1.4869 to 1.4870 | 80.2 | 19.8 |
| 1.4871 to 1.4873 | 80.3 | 19.7 |
| 1.4874 to 1.4875 | 80.4 | 19.6 |
| 1.4876 to 1.4878 | 80.5 | 19.5 |
| 1.4879 to 1.4880 | 80.6 | 19.4 |
| 1.4881 to 1.4883 | 80.7 | 19.3 |
| 1.4884 to 1.4885 | 80.8 | 19.2 |
| 1.4886 to 1.4888 | 80.9 | 19.1 |
| 1.4889 to 1.4890 | 81.0 | 19.0 |
| 1.4891 to 1.4893 | 81.1 | 18.9 |
| 1.4894 to 1.4896 | 81.2 | 18.8 |
| 1.4897 to 1.4898 | 81.3 | 18.7 |
| 1.4899 to 1.4901 | 81.4 | 18.6 |
| 1.4902 to 1.4903 | 81.5 | 18.5 |
| 1.4904 to 1.4906 | 81.6 | 18.4 |
| 1.4907 to 1.4908 | 81.7 | 18.3 |
| 1.4909 to 1.4911 | 81.8 | 18.2 |
| 1.4912 to 1.4913 | 81.9 | 18.1 |
| 1.4914 to 1.4916 | 82.0 | 18.0 |
| 1.4917 to 1.4918 | 82.1 | 17.9 |
| 1.4919 to 1.4921 | 82.2 | 17.8 |
| 1.4922 to 1.4923 | 82.3 | 17.7 |
| 1.4924 to 1.4926 | 82.4 | 17.6 |
| 1.4927 to 1.4929 | 82.5 | 17.5 |
| 1.4930 to 1.4932 | 82.6 | 17.4 |
| 1.4933 to 1.4934 | 82.7 | 17.3 |
| 1.4935 to 1.4936 | 82.8 | 17.2 |
| 1.4937 to 1.4939 | 82.9 | 17.1 |
| 1.4940 to 1.4941 | 83.0 | 17.0 |
| 1.4942 to 1.4944 | 83.1 | 16.9 |
| 1.4945 to 1.4946 | 83.2 | 16.8 |
| 1.4947 to 1.4949 | 83.3 | 16.7 |
| 1.4950 to 1.4951 | 83.4 | 16.6 |
| 1.4952 to 1.4954 | 83.5 | 16.5 |
| 1.4955 to 1.4957 | 83.6 | 16.4 |
| 1.4958 to 1.4959 | 83.7 | 16.3 |

TABLE III—REFRACTIVE INDICES, CORRESPONDING PERCENT SOLUBLE SOLIDS, AND PERCENT MOISTURE IN EXTRACTED HONEY [1]—Continued

| Refractive index @ 20 °C (range) | Percent soluble solids | Percent moisture |
|---|---|---|
| 1.4960 to 1.4962 | 83.8 | 16.2 |
| 1.4963 to 1.4964 | 83.9 | 16.1 |
| 1.4965 to 1.4967 | 84.0 | 16.0 |
| 1.4968 to 1.4969 | 84.1 | 15.9 |
| 1.4970 to 1.4972 | 84.2 | 15.8 |
| 1.4973 to 1.4975 | 84.3 | 15.7 |
| 1.4976 to 1.4977 | 84.4 | 15.6 |
| 1.4978 to 1.4980 | 84.5 | 15.5 |
| 1.4981 to 1.4982 | 84.6 | 15.4 |
| 1.4983 to 1.4984 | 84.7 | 15.3 |
| 1.4985 to 1.4987 | 84.8 | 15.2 |
| 1.4988 to 1.4990 | 84.9 | 15.1 |
| 1.4991 to 1.4993 | 85.0 | 15.0 |
| 1.4994 to 1.4995 | 85.1 | 14.9 |
| 1.4996 to 1.4998 | 85.2 | 14.8 |
| 1.4999 to 1.5000 | 85.3 | 14.7 |
| 1.5001 to 1.5003 | 85.4 | 14.6 |
| 1.5004 to 1.5005 | 85.5 | 14.5 |
| 1.5006 to 1.5008 | 85.6 | 14.4 |
| 1.5009 to 1.5011 | 85.7 | 14.3 |
| 1.5012 to 1.5013 | 85.8 | 14.2 |
| 1.5014 to 1.5016 | 85.9 | 14.1 |
| 1.5017 to 1.5018 | 86.0 | 14.0 |
| 1.5019 to 1.5021 | 86.1 | 13.9 |
| 1.5022 to 1.5024 | 86.2 | 13.8 |
| 1.5025 to 1.5026 | 86.3 | 13.7 |
| 1.5027 to 1.5029 | 86.4 | 13.6 |
| 1.5030 to 1.5031 | 86.5 | 13.5 |
| 1.5032 to 1.5034 | 86.6 | 13.4 |
| 1.5035 to 1.5037 | 86.7 | 13.3 |
| 1.5038 to 1.5039 | 86.8 | 13.2 |
| 1.5040 to 1.5042 | 86.9 | 13.1 |
| 1.5043 to 1.5044 | 87.0 | 13.0 |

[1] Temperature corrections: If refractometer reading is made at temperatre above 20 °C (68 °F), add 0.00023 to the refractive index for each degree C, or 0.00013 for each degree F. If made below 20 °C (68 °F), subtract correction. The moisture content of honey and equivalent values may be determined by any other method which gives equivalent results.

TABLE IV—FILTERED STYLE

| Factors | Grade A | Grade B | Grade C | Substandard |
|---|---|---|---|---|
| | | ANALYTICAL QUALITY | | |
| Percent soluble solids (Minimum). | 81.4 | 81.4 | 80.0 | Fails grade C. |
| Absence of defects. | Practically free—practically none that affect appearance or edibility | Reasonably free—do not materially affect the appearance or edibility. | Fairly free—do not seriously affect the appearance or edibility. | Fails grade C |
| Score points | 37 to 40 | 34 to 36 [1] | 31 to 33 [1] | 0 to 30. [1] |
| Flavor and aroma | Good—free from caramelization, smoke, fermentation, chemicals, and other causes | Reasonably good—partically free from caramelization; free from smoke, fermentation, chemicals, and other causes | Fairly good—reasonably free from caramelization; free from smoke, fermentation, chemicals, and other causes | Poor—Fails grade C. |
| Score points | 45 to 50 | 40 to 44 [1] | 35 to 39 [1] | 0 to 34 [1] |

TABLE IV—FILTERED STYLE—Continued

| Factors | Grade A | Grade B | Grade C | Substandard |
|---|---|---|---|---|
| Clarity | Clear—may contain air bubbles that do not materially affect the appearance; may contain a trace of pollen grains or other finely divided particles in suspension that do not affect appearance. | Reasonably clear—may contain air bubble, pollen grains, or other finely divided particles in suspension that do not materially affect the appearance. | Fairly clear—may contain air bubbles, pollen grains, or other finely divided particles in suspension that do not seriously affect the appearance. | Fails grade C. |
| Score points | 8 to 10 | 6 to 7 | 4 to 5 [1] | 0 to 3.[2] |

[1] Limiting rule—sample units with score points that fall in this range shall not be graded above the respective grade regardless of the total score.
[2] Partial limiting rule—sample units with score points that fall in this range shall not be graded above U.S. Grade C regardless of the total score.

TABLE V—STRAINED STYLE

| Factors | Grade A | Grade B | Grade C | Substandard |
|---|---|---|---|---|
| | | ANALYTICAL QUALITY | | |
| Percent soluble solids (minimum). | 81.4 | 81.4 | 80.0 | Fails grade C. |
| Absence of defects. | Practically free—practically none that affect appearance or edibility. | Reasonable free—do not materially affect the appearance or edibility. | Fairly free—do not seriously affect the appearance or edibility. | Fails grade C. |
| Score points | 37 to 40 | 34 to 36 [1] | 31 to 33 [1] | 0 to 30 [1] |
| Flavor and aroma | Good—free from caramelization, smoke, fermentation, chemicals, and other causes. | Reasonably good—practically free from caramelization; free from smoke, fermentation, chemicals, and other causes. | Fairly good—reasonably free from caramelization; free from smoke, fermentation, chemicals, and other causes. | Poor—Fails grade C. |
| Score points | 45 to 50 | 40 to 44 [1] | 35 to 39 [1] | 0 to 34.[1] |

[1] Limiting rule—sample units with score points that fall in this range shall not be graded above the respective grade regardless of the total score.

### § 52.1404 Sample size.

The sample size to determine meeting the requirements of these standards shall be as specified in the "Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products" (7 CFR 52.1-52.83) for lot grading and on-line grading, as applicable.

### § 52.1405 Determining the grade of a lot.

A lot of extracted honey is considered as meeting the requirements for quality and analysis if:

(a) The requirements specified in Table IV and V, as applicable, are met; and

(b) The requirements for the procedures set forth in the "Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products" (7 CFR 52.1-52.83) are met.

## Subpart—United States Standards for Grades of Frozen Concentrate for Lemonade

SOURCE: 18 FR 8007, Dec. 9, 1953, unless otherwise noted. Redesignated at 42 FR 32514, June 27, 1977 and at 46 FR 63203, Dec. 31, 1981.

### PRODUCT DESCRIPTION AND GRADES

### § 52.1421 Product description.

Frozen concentrate for lemonade is the product prepared from lemon juice and one or more nutritive sweetening ingredients. It may contain added lemon oil or concentrated lemon oil (or their extracts or emulsions) and may or may not contain water in sufficient quantities to standardize the

# APPENDIX D

# HTS NOMENCLATURE

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 0407.00.00 | | Birds' eggs, in shell, fresh, preserved or cooked | ..... | 3.5¢/doz. | Free (A,E,IL,J) 1.7¢/doz. (CA) | 10¢/doz. |
| | 20 | For hatching | doz | | | |
| | 40 | Other | doz | | | |
| 0408 | | Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, molded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter: | | | | |
| | | Egg yolks: | | | | |
| 0408.11.00 | 00 | Dried | kg..... | 59.5¢/kg | Free (E,IL,J) 29.7¢/kg (CA) | 59.5¢/kg |
| 0408.19.00 | 00 | Other | kg..... | 12.1¢/kg | Free (E,IL,J) 6¢/kg (CA) | 24.3¢/kg |
| | | Other: | | | | |
| 0408.91.00 | 00 | Dried | kg..... | 59.5¢/kg | Free (E,IL,J) 29.7¢/kg (CA) | 59.5¢/kg |
| 0408.99.00 | 00 | Other | kg..... | 12.1¢/kg | Free (E,IL,J) 6¢/kg (CA) | 24.3¢/kg |
| 0409.00.00 | | Natural honey | ..... | 2.2¢/kg | Free (CA,E,IL,J) | 6.6¢/kg |
| | 20 | Packaged for retail sale | kg | | | |
| | | Other: | | | | |
| | 40 | Extra light amber and lighter | kg | | | |
| | 60 | Light amber and darker | kg | | | |
| 0410.00.00 | 00 | Edible products of animal origin, not elsewhere specified or included | kg..... | 2.5% | Free (A,CA,E,IL,J) | 10% |

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 1702 (con.) | | Other sugars, including chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavoring or coloring matter; artificial honey, whether or not mixed with natural honey; caramel (con): | | | | |
| 1702.90 | | Other, including invert sugar: | | | | |
| | | Derived from sugar cane or sugar beets: | | | | |
| | | Containing soluble non-sugar solids (excluding any foreign substances that may have been added or developed in the product) equal to 6 percent or less by weight of the total soluble solids: | | | | |
| 1702.90.31 | 00 | Described in paragraphs (a) and (b) of additional U.S. note 3 to chapter 17 and entered pursuant to its provisions..... | kg..... | Dutiable on total sugars at the rate per kg applicable under heading 1701 to sugar testing 100 degrees 1/ | Free (A,E*,IL,J) 1/ Dutiable on total sugars at the rate per kg applicable under heading 1701 to sugar testing 100 degrees (CA) 1/ | Dutiable on total sugars at the rate per kg applicable under heading 1701 to sugar testing 100 degrees 1/ |
| 1702.90.32 | 00 | Other..... | kg..... | 37.386¢/kg 1/ | Dutiable on total sugars at the rate per kg applicable under heading 1701 to sugar testing 100 degrees (CA) 1/ | 37.386¢/kg 1/ |
| | | Other: | | | | |
| 1702.90.35 | 00 | Invert molasses..... | liters.v kg | 0.77¢/liter | Free (A,E,IL,J) 0.3¢/liter (CA) | 1.8¢/liter |
| 1702.90.40 | 00 | Other..... | liters.v kg | 0.77¢/liter | Free (A,E,IL,J) 0.3¢/liter (CA) | 1.8¢/liter |
| 1702.90.50 | | Other 2/..... | ..... | 6% | Free (A,E,IL,J) 3% (CA) | 20% |
| | 40 | Entered from a foreign trade zone pursuant to U.S. note 2(e) of subchapter IV to chapter 99..... | kg | | | |
| | 80 | Other..... | kg | | | |

1/ See subheading 9904.40.60.
2/ See headings 9904.50.20 and 9904.50.40.

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 2106 (con.) | | Food preparations not elsewhere specified or included (con.): | | | | |
| 2106.90 (con.) | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| 2106.90.60 | | Other..... | ..... | 10% | Free (A,E,IL,J) 5% (CA) | 20% |
| | | Preparations for the manufacture of beverages: | | | | |
| | 72 | Containing sugar derived from sugar cane and/or sugar beets..... | kg | | | |
| | 74 | Other..... | kg | | | |
| | 75 | Non-dairy coffee whiteners..... | kg | | | |
| | 80 | Other cream or milk substitutes..... | kg | | | |
| | 85 | Confectionery (including gum) containing synthetic sweetening agents (e.g., saccharin) instead of sugar..... | kg | | | |
| | 87 | Herbal teas and herbal infusions comprising mixed herbs..... | kg | | | |
| | | Other: | | | | |
| | 90 | Canned..... | kg | | | |
| | | Other: | | | | |
| | 95 | Frozen..... | kg | | | |
| | | Other: | | | | |
| | 97 | Containing sugar derived from sugar cane and/or sugar beets... | kg | | | |
| | 99 | Other.... | kg | | | |

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 0407.00.00 | | Birds' eggs, in shell, fresh, preserved or cooked | ..... | 3.5¢/doz. | Free (A,E,IL,J,MX) 1.4¢/doz. (CA) | 10¢/doz. |
| | 20 | For hatching | doz | | | |
| | 40 | Other | doz | | | |
| 0408 | | Birds' eggs, not in shell, and egg yolks, fresh, dried, cooked by steaming or by boiling in water, molded, frozen or otherwise preserved, whether or not containing added sugar or other sweetening matter: | | | | |
| | | Egg yolks: | | | | |
| 0408.11.00 | 00 | Dried | kg..... | 59.5¢/kg | Free (E,IL,J,MX) 23.8¢/kg (CA) | 59.5¢/kg |
| 0408.19.00 | 00 | Other | kg..... | 12.1¢/kg | Free (E,IL,J,MX) 4.8¢/kg (CA) | 24.3¢/kg |
| | | Other: | | | | |
| 0408.91.00 | 00 | Dried | kg..... | 59.5¢/kg | Free (E,IL,J,MX) 23.8¢/kg (CA) | 59.5¢/kg |
| 0408.99.00 | 00 | Other | kg..... | 12.1¢/kg | Free (E,IL,J,MX) 4.8¢/kg (CA) | 24.3¢/kg |
| 0409.00.00 | | Natural honey | ..... | 2.2¢/kg | Free (CA,E,IL,J, MX) | 6.6¢/kg |
| | 20 | Packaged for retail sale | kg | | | |
| | | Other: | | | | |
| | 42 | White | kg | | | |
| | 44 | Extra light amber | kg | | | |
| | 62 | Light amber | kg | | | |
| | 64 | Other | kg | | | |
| 0410.00.00 | 00 | Edible products of animal origin, not elsewhere specified or included | kg..... | 2.5% | Free (A,CA,E,IL,J, MX) | 10% |

| Heading/ Subheading | Stat. Suf-fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 1702 (con.) | | Other sugars, including chemically pure lactose, maltose, glucose and fructose, in solid form; sugar syrups not containing added flavoring or coloring matter; artificial honey, whether or not mixed with natural honey; caramel (con): | | | | |
| 1702.60.00 | | Other fructose and fructose syrup, containing in the dry state more than 50 percent by weight of fructose 1/ | ..... | 6% | Free (A,E,IL,J) 2.4% (CA) See 9906.17.11-9906.17.15 (MX) | 20% |
| | | Derived solely from starches: | | | | |
| | 10 | Entered from a foreign trade zone pursuant to U.S. note 2(e) of subchapter IV to chapter 99 | kg | | | |
| | 30 | Other | kg | | | |
| | | Other: | | | | |
| | | Syrup: | | | | |
| | 50 | Entered from a foreign trade zone pursuant to U.S. note 2(e) of subchapter IV to chapter 99 | kg | | | |
| | 55 | Other | kg | | | |
| | 60 | Other | kg | | | |
| 1702.90 | | Other, including invert sugar: | | | | |
| | | Derived from sugar cane or sugar beets: | | | | |
| | | Containing soluble non-sugar solids (excluding any foreign substances that may have been added or developed in the product) equal to 6 percent or less by weight of the total soluble solids: | | | | |
| 1702.90.31 | 00 | Described in paragraphs (a) and (b) of additional U.S. note 3 to chapter 17 and entered pursuant to its provisions | kg | 1.4606¢/kg of total sugars 2/ | Free (A,E*,IL,J,MX) 2/ 0.5842¢/kg of total sugars (CA) 2/ | Dutiable on total sugars at the rate per kg applicable under heading 1701 to sugar testing 100 degrees 2/ |
| 1702.90.32 | 00 | Other | kg | 37.386¢/kg 2/ | 0.5842¢/kg of total sugars (CA) 2/ See 9906.17.16-9906.17.17 (MX) | 37.386¢/kg 2/ |
| | | Other: | | | | |
| 1702.90.35 | 00 | Invert molasses | liters.v kg | 0.77¢/liter | Free (A,E,IL,J,MX) 0.3¢/liter (CA) | 1.8¢/liter |
| 1702.90.40 | 00 | Other | liters.v kg | 0.77¢/liter | Free (A,E,IL,J,MX) 0.3¢/liter (CA) | 1.8¢/liter |
| 1702.90.50 | | Other 3/ | ..... | 6% | Free (A,E,IL,J) 2.4% (CA) See 9906.17.18-9906.17.24 (MX) | 20% |
| | 40 | Entered from a foreign trade zone pursuant to U.S. note 2(e) of subchapter IV to chapter 99 | kg | | | |
| | 80 | Other | kg | | | |

1/ See heading 9904.50.20.
2/ See subheading 9904.40.60.
3/ See headings 9904.50.20 and 9904.50.40.

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 2106 (con.) | | Food preparations not elsewhere specified or included (con.): | | | | |
| 2106.90 (con.) | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other: | | | | |
| 2106.90.61 | | Containing over 10 percent by weight of milk solids | ..... | 10% | Free (A,E,IL,J,MX) 4% (CA) 1/ | 20% |
| | | Preparations for the manufacture of beverages: | | | | |
| | 71 | Containing high-intensity sweeteners (e.g., aspartame and/or saccharin | kg | | | |
| | 72 | Containing sugar derived from sugar cane and/or sugar beets | kg | | | |
| | 73 | Other | kg | | | |
| | 75 | Non-dairy coffee whiteners | kg | | | |
| | 80 | Other cream or milk substitutes | kg | | | |
| | 85 | Confectionery (including gum) containing synthetic sweetening agents (e.g., saccharin) instead of sugar | kg | | | |
| | 87 | Herbal teas and herbal infusions comprising mixed herbs | kg | | | |
| | | Other: | | | | |
| | 90 | Canned | kg | | | |
| | 95 | Other: Frozen | kg | | | |
| | 97 | Other: Containing sugar derived from sugar cane and/or sugar beets | kg | | | |
| | 99 | Other | kg | | | |

1/ See subheading 9905.21.10.

| Heading/ Subheading | Stat. Suf- fix | Article Description | Units of Quantity | Rates of Duty 1 General | Rates of Duty 1 Special | Rates of Duty 2 |
|---|---|---|---|---|---|---|
| 2106 (con.) | | Food preparations not elsewhere specified or included (con.): | | | | |
| 2106.90 (con.) | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.): | | | | |
| | | Other (con.):: | | | | |
| 2106.90.69 | | Other..... | ..... | 10% | Free (A,E,IL,J,MX) 4% (CA) 1/ | 20% |
| | | Preparations for the manufacture of beverages: | | | | |
| | 71 | Containing high-intensity sweeteners (e.g., aspartame and/or saccharin..... | kg | | | |
| | 72 | Containing sugar derived from sugar cane and/or sugar beets..... | kg | | | |
| | 73 | Other..... | kg | | | |
| | 75 | Non-dairy coffee whiteners..... | kg | | | |
| | 80 | Other cream or milk substitutes..... | kg | | | |
| | 85 | Confectionery (including gum) containing synthetic sweetening agents (e.g., saccharin) instead of sugar..... | kg | | | |
| | 87 | Herbal teas and herbal infusions comprising mixed herbs..... | kg | | | |
| | | Other: | | | | |
| | 90 | Canned..... | kg | | | |
| | | Other: | | | | |
| | 95 | Frozen..... | kg | | | |
| | | Other: | | | | |
| | 97 | Containing sugar derived from sugar cane and/or sugar beets..... | kg | | | |
| | 99 | Other..... | kg | | | |

1/ See subheading 9905.21.10.

# APPENDIX E

# QUESTIONNAIRE DATA FOR U.S. PRODUCERS AND PRODUCER/PACKERS, USDA DATA FOR U.S. PRODUCERS SALES BY COLORS, ADDITIONAL QUESTIONNAIRE DATA FOR U.S. PACKERS, AND SUMMARY DATA AND FIGURE

Table E-1
Honey: U.S.producers' capacity, production, and capacity utilization, by products, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Average-of-period capacity (*pounds*) | | | | |
| Honey | 1,692,875 | 1,768,817 | 1,785,616 | 1,550,366 | 1,493,189 |
| | Packing/bottling (*pounds*) | | | | |
| Natural honey | 935,625 | 1,125,228 | 1,213,338 | 965,697 | 918,217 |
| Mixtures of natural honey and artificial honey | 0 | 0 | 0 | 0 | 0 |
| Preparations of natural honey | 0 | 0 | 0 | 0 | 0 |
| Total | 935,625 | 1,125,228 | 1,213,338 | 965,697 | 918,217 |
| | Capacity utilization (*percent*) | | | | |
| Honey | 54.4 | 63.2 | 67.3 | 62.0 | 61.2 |

Note.--Capacity utilization is calculated using data of firms providing both capacity and production information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-2
Honey: Number of U.S. producers' bee colonies, production, and honey-colony yield, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| Number of colonies operated for-- | | | | | |
| Honey production | 344,194 | 343,884 | 356,545 | 351,757 | 335,662 |
| Pollination services | 101,151 | 103,575 | 116,874 | 114,598 | 120,586 |
| Other purposes | 21,278 | 22,189 | 23,512 | 23,512 | 24,027 |
| All purposes[1] | 357,814 | 359,080 | 379,754 | 373,793 | 359,928 |
| Production: | | | | | |
| Honey (*pounds*) | 28,398,104 | 34,504,774 | 32,709,918 | 31,260,098 | 32,208,625 |
| Beeswax (*pounds*) | 486,442 | 585,193 | 537,524 | 501,212 | 529,918 |
| Yield per honey production colony: | | | | | |
| Honey (*pounds*) | 82.5 | 100.3 | 91.7 | 88.9 | 96.0 |
| Beeswax (*pounds*) | 1.4 | 1.7 | 1.5 | 1.4 | 1.6 |

[1] Not a total--colonies may be used for multiple purposes.

Note.--Capacity utilization is calculated using data of firms providing both capacity and production information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-3
Honey: Shipments by U.S. producers, by markets, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*pounds*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 391,405 | 419,388 | 428,274 | 314,296 | 306,725 |
| Industrial users | 421,527 | 583,314 | 487,570 | 375,471 | 478,927 |
| Food service | 351,857 | 360,385 | 436,165 | 370,751 | 250,172 |
| Brokers and dealers | 703,495 | 791,339 | 542,480 | 448,360 | 235,435 |
| Packers and bottlers: | | | | | |
| Cooperatives | 15,470,879 | 17,041,091 | 17,817,509 | 15,531,206 | 15,097,767 |
| Private processors | 7,835,527 | 8,818,804 | 12,026,954 | 9,602,050 | 7,954,241 |
| Subtotal | 23,306,406 | 25,859,895 | 29,844,463 | 25,133,256 | 23,052,008 |
| Forfeited to CCC | 386,943 | 997,275 | 483,232 | 483,232 | 879,440 |
| Other U.S. markets | 110,266 | 113,281 | 100,540 | 6,250 | 6,250 |
| Subtotal | 25,671,899 | 29,124,877 | 32,322,724 | 27,131,616 | 25,208,957 |
| Exports: | | | | | |
| Bulk | 983,461 | 98,227 | 121,379 | 121,379 | 0 |
| Packaged | 286,573 | 335,871 | 269,078 | 258,408 | 189,764 |
| Subtotal | 1,270,034 | 434,098 | 390,457 | 379,787 | 189,764 |
| Total | 26,941,933 | 29,558,975 | 32,713,181 | 27,511,403 | 25,398,721 |
| | Value (*dollars*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 352,952 | 351,934 | 404,010 | 296,421 | 315,884 |
| Industrial users | 251,388 | 361,146 | 326,431 | 254,693 | 310,891 |
| Food service | 270,568 | 286,446 | 356,499 | 305,974 | 209,322 |
| Brokers and dealers | 387,449 | 411,519 | 272,440 | 225,850 | 120,615 |
| Packers and bottlers: | | | | | |
| Cooperatives | 7,801,945 | 9,051,688 | 9,374,099 | 8,187,294 | 7,697,440 |
| Private processors | 3,671,219 | 4,473,093 | 6,243,414 | 4,988,955 | 3,995,743 |
| Subtotal | 11,473,164 | 13,524,781 | 15,617,513 | 13,176,249 | 11,693,183 |
| Forfeited to CCC | 225,260 | 549,143 | 254,263 | 254,263 | 457,779 |
| Other U.S. markets | 43,776 | 55,499 | 51,224 | 3,938 | 3,938 |
| Subtotal | 13,004,557 | 15,540,468 | 17,282,380 | 14,517,388 | 13,111,612 |
| Exports: | | | | | |
| Bulk | 498,337 | 48,986 | 63,705 | 63,705 | 0 |
| Packaged | 217,410 | 250,608 | 203,672 | 184,912 | 140,323 |
| Subtotal | 715,747 | 299,594 | 267,377 | 248,617 | 140,323 |
| Total | 13,720,304 | 15,840,062 | 17,549,757 | 14,766,005 | 13,251,935 |

Continued on next page.

Table E-3--Continued
Honey: Shipments by U.S. producers, by markets, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Unit value (*per pound*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | $0.90 | $0.84 | $0.94 | $0.94 | $1.03 |
| Industrial users | .60 | .62 | .67 | .68 | .65 |
| Food service | .77 | .79 | .82 | .83 | .84 |
| Brokers and dealers | .55 | .52 | .50 | .50 | .51 |
| Packers and bottlers: | | | | | |
| Cooperatives | .50 | .53 | .53 | .53 | .51 |
| Private processors | .47 | .51 | .52 | .52 | .50 |
| Average | .49 | .52 | .52 | .52 | .51 |
| Forfeited to CCC | .58 | .55 | .53 | .53 | .52 |
| Other U.S. markets | .40 | .49 | .51 | .63 | .63 |
| Average | .51 | .53 | .53 | .54 | .52 |
| Exports: | | | | | |
| Bulk | .51 | .50 | .52 | .52 | [1] |
| Packaged | .76 | .75 | .76 | .72 | .74 |
| Average | .56 | .69 | .68 | .65 | .74 |
| Average | .51 | .54 | .54 | .54 | .52 |
| | Share of total shipments quantity (*percent*) | | | | |
| U.S. market: | | | | | |
| Roadside or own store | 1.5 | 1.4 | 1.3 | 1.1 | 1.2 |
| Industrial users | 1.6 | 2.0 | 1.5 | 1.4 | 1.9 |
| Food service | 1.3 | 1.2 | 1.3 | 1.3 | 1.0 |
| Brokers and dealers | 2.6 | 2.7 | 1.7 | 1.6 | .9 |
| Packers and bottlers: | | | | | |
| Cooperatives | 57.4 | 57.7 | 54.5 | 56.5 | 59.4 |
| Private processors | 29.1 | 29.8 | 36.8 | 34.9 | 31.3 |
| Subtotal | 86.5 | 87.5 | 91.2 | 91.4 | 90.8 |
| Forfeited to CCC | 1.4 | 3.4 | 1.5 | 1.8 | 3.5 |
| Other U.S. markets | .4 | .4 | .3 | [2] | [2] |
| Subtotal | 95.3 | 98.5 | 98.8 | 98.6 | 99.3 |
| Exports: | | | | | |
| Bulk | 3.7 | .3 | .4 | .4 | - |
| Packaged | 1.1 | 1.1 | .8 | .9 | .7 |
| Subtotal | 4.7 | 1.5 | 1.2 | 1.4 | .7 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

[1] Not applicable.
[2] Positive figure, but less than significant digits displayed.

Note.--Unit values are calculated using data of firms supplying both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-4
Natural honey: Shipments by U.S. producers, by categories, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | Jan.-Sept.-- 1993 |
|---|---|---|---|---|---|
| | Quantity (*pounds*) | | | | |
| White | 12,328,269 | 16,037,162 | 18,241,164 | 15,658,279 | 12,594,921 |
| Extra light | 5,505,644 | 5,939,654 | 5,975,026 | 5,004,744 | 6,032,317 |
| Light amber and darker | 6,738,257 | 5,912,705 | 6,798,468 | 5,471,180 | 5,119,677 |
| Area specialities | 7,408 | 28,626 | 163,326 | 163,326 | 125,870 |
| Total | 24,579,578 | 27,918,147 | 31,177,984 | 26,297,529 | 23,872,785 |
| | Value (*dollars*) | | | | |
| White | 6,389,754 | 8,652,680 | 9,783,664 | 8,381,567 | 6,653,623 |
| Extra light | 2,976,225 | 3,237,734 | 3,283,218 | 2,764,880 | 3,247,477 |
| Light amber and darker | 3,104,173 | 2,937,193 | 3,445,198 | 2,748,659 | 2,606,284 |
| Area specialities | 1,852 | 16,084 | 78,933 | 78,933 | 57,536 |
| Total | 12,472,004 | 14,843,691 | 16,591,013 | 13,974,039 | 12,564,920 |
| | Unit value (*per pound*) | | | | |
| White | $0.52 | $0.54 | $0.54 | $0.54 | $0.53 |
| Extra light | .54 | .55 | .55 | .55 | .54 |
| Light amber and darker | .46 | .50 | .51 | .50 | .48 |
| Area specialities | .25 | .56 | .48 | .48 | .48 |
| Average | .51 | .53 | .53 | .53 | .52 |
| | Share of total shipments quantity (*percent*) | | | | |
| White | 50.2 | 57.4 | 58.5 | 59.5 | 52.8 |
| Extra light | 22.4 | 21.3 | 19.2 | 19.0 | 25.3 |
| Light amber and darker | 27.4 | 21.2 | 21.8 | 20.8 | 21.4 |
| Area specialities | [1] | .1 | .5 | .6 | .5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | Share of total shipments value (*percent*) | | | | |
| White | 51.2 | 58.3 | 59.0 | 60.0 | 53.0 |
| Extra light | 23.9 | 21.8 | 19.8 | 19.8 | 25.8 |
| Light amber and darker | 24.9 | 19.8 | 20.8 | 19.7 | 20.7 |
| Area specialities | [1] | .1 | .5 | .6 | .5 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

[1] Positive figure, but less than significant digits displayed.

Note.--Unit values are calculated using data of firms supplying both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-5
Honey: End-of-period inventories of U.S. producers, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*pounds*) | | | | |
| Stocks | 327,159 | 356,256 | 458,695 | 629,894 | 1,729,987 |
| Packaged | 162,873 | 174,954 | 79,860 | 66,639 | 35,470 |
| Total | 490,032 | 531,210 | 538,555 | 696,533 | 1,765,457 |
| | Ratio to production (*percent*) | | | | |
| Stocks | 11.9 | 8.7 | 11.6 | 12.1 | 21.6 |
| Packaged | 9.7 | 9.4 | 3.5 | 2.4 | 1.1 |
| Total | 14.8 | 9.0 | 4.9 | 2.7 | .6 |

Note.--Ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-6
Average number of U.S. producers' production and related workers producing honey, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993[3]

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | Jan.-Sept.-- 1993 |
|---|---|---|---|---|---|
| | Number of employees | | | | |
| All workers | 845 | 874 | 866 | 787 | 748 |
| | Number of production and related workers (PRWs) | | | | |
| Full time | 287 | 298 | 314 | 293 | 304 |
| Seasonal | 522 | 548 | 527 | 467 | 420 |
| Total | 809 | 846 | 841 | 760 | 724 |
| | Hours worked by PRWs (*hours*) | | | | |
| Full time | 570,295 | 579,220 | 676,260 | 473,896 | 487,213 |
| Seasonal | 173,237 | 203,785 | 208,650 | 155,722 | 165,363 |
| Total | 743,532 | 783,005 | 884,910 | 629,618 | 652,576 |
| | Wages paid to PRWs (*dollars*) | | | | |
| Full time | 4,301,135 | 4,849,636 | 5,334,752 | 3,479,958 | 3,527,092 |
| Seasonal | 913,732 | 1,098,315 | 1,154,412 | 836,378 | 916,280 |
| Total | 5,214,867 | 5,947,951 | 6,489,164 | 4,316,336 | 4,443,372 |
| | Total compensation paid to PRWs (*dollars*) | | | | |
| Full time | (4) | (4) | (4) | (4) | (4) |
| Seasonal | (4) | (4) | (4) | (4) | (4) |
| Total | 5,528,576 | 6,332,351 | 6,822,612 | 4,501,862 | 4,675,455 |
| | Hourly wages paid to PRWs | | | | |
| Full time | $7.54 | $8.34 | $7.88 | $7.36 | $7.25 |
| Seasonal | 5.22 | 5.37 | 5.51 | 5.36 | 5.53 |
| Average | 6.99 | 7.56 | 7.32 | 6.86 | 6.81 |
| | Productivity (*pounds per hour*) | | | | |
| Full time | 38.6 | 47.3 | 38.2 | 47.1 | 46.4 |
| Seasonal | 109.3 | 120.7 | 112.9 | 130.2 | 120.2 |
| Average | 31.6 | 37.2 | 30.9 | 37.6 | 36.6 |
| | Unit labor costs (*per pound*) | | | | |
| Full time | (4) | (4) | (4) | (4) | (4) |
| Seasonal | (4) | (4) | (4) | (4) | (4) |
| Total | $0.23 | $0.22 | $0.25 | $0.19 | $0.19 |

[1] Includes hours worked plus hours of paid leave time.
[2] On the basis of total compensation paid.
[3] Firms providing employment data accounted for approximately 15 percent of total U.S. production of honey (based on quantity) in 1992.
[4] Not available.

Note.--Ratios are calculated using data of firms supplying both numerator and denominator information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-7
Honey: Sales by U.S. beekeepers, by colors and by states, 1990-92

**WATERWHITE**

| Region and state | Quantity--pounds | | | Value--dollars | | | Unit value--per pound | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ |
| 1 Connecticut | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Maine | 121,858 | 2/ | 2/ | $ 75,216 | | | $0.617 | | |
| 1 Massachusetts | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Hampshire | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Jersey | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New York | 467,853 | 496,478 | 102,456 | 258,052 | $ 279,092 | $ 68,399 | 0.552 | $0.562 | $0.668 |
| 1 Pennsylvania | 20,218 | 33,079 | 2/ | 11,234 | 23,143 | 2/ | 0.556 | 0.700 | - |
| 1 Rhode Island | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Vermont | 52,913 | 2/ | 2/ | 41,036 | | | 0.776 | - | - |
| 2 Delaware | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Kentucky | 24,657 | 2/ | 1,906 | 27,580 | 2/ | 1,958 | 1.119 | - | 1.027 |
| 2 Maryland | 2/ | 27,496 | 2/ | 2/ | 28,880 | 2/ | - | 1.050 | - |
| 2 N. Carolina | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Tennessee | 16,326 | 2/ | 2/ | 21,888 | 2/ | 2/ | 1.341 | - | - |
| 2 Virginia | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 W. Virginia | 4,371 | 2/ | 2/ | 4,701 | 2/ | 2/ | 1.075 | - | - |
| 3 Alabama | 2/ | 2/ | 16,936 | 2/ | 2/ | 10,750 | - | - | 0.635 |
| 3 Florida | 1,107,281 | 370,697 | 2,325,275 | 565,335 | 225,940 | 1,319,420 | 0.511 | 0.610 | 0.567 |
| 3 Georgia | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 Mississippi | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 S. Carolina | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Illinois | 2/ | 215,547 | 140,964 | 2/ | 189,205 | 117,446 | - | 0.878 | 0.833 |
| 4 Indiana | 60,263 | 16,914 | 2,696 | 37,084 | 12,022 | 3,232 | 0.615 | 0.711 | 1.199 |
| 4 Michigan | 2,235,579 | 1,636,685 | 979,464 | 1,224,554 | 947,157 | 570,914 | 0.548 | 0.579 | 0.583 |
| 4 Ohio | 979,176 | 1,404,402 | 399,188 | 865,667 | 764,777 | 217,077 | 0.884 | 0.545 | 0.544 |
| 4 Wisconsin | 4,554,806 | 3,653,683 | 1,991,651 | 2,588,222 | 2,034,377 | 1,189,307 | 0.568 | 0.557 | 0.597 |
| 5 Iowa | 3,093,975 | 3,954,925 | 1,790,959 | 1,599,388 | 2,212,079 | 973,562 | 0.517 | 0.559 | 0.544 |
| 5 Kansas | 307,062 | 671,906 | 153,534 | 185,436 | 417,958 | 88,764 | 0.604 | 0.622 | 0.578 |
| 5 Minnesota | 9,846,700 | 11,124,242 | 6,068,855 | 4,901,639 | 6,083,552 | 3,336,496 | 0.498 | 0.547 | 0.550 |
| 5 Missouri | 146,874 | 2/ | 874,621 | 102,841 | 2/ | 491,304 | 0.700 | - | 0.562 |
| 5 Nebraska | 3,856,509 | 3,121,593 | 2,780,305 | 1,911,571 | 1,673,977 | 1,470,024 | 0.496 | 0.536 | 0.529 |
| 5 N. Dakota | 7,521,519 | 12,331,643 | 7,245,524 | 3,946,625 | 6,739,589 | 3,844,278 | 0.525 | 0.547 | 0.531 |
| 5 S. Dakota | 13,296,078 | 15,843,376 | 6,384,996 | 6,713,132 | 8,538,615 | 3,458,397 | 0.505 | 0.539 | 0.542 |
| 6 Arizona | 144,399 | 410,767 | 368,823 | 73,089 | 227,111 | 163,799 | 0.506 | 0.553 | 0.444 |
| 6 Arkansas | 2,927 | 218,974 | 2/ | 1,957 | 120,054 | 2/ | 0.669 | 0.548 | - |
| 6 Louisiana | 2/ | 2/ | 49,405 | 2/ | 2/ | 36,745 | - | - | 0.744 |
| 6 New Mexico | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Oklahoma | 2/ | 40,686 | 2/ | 2/ | 39,486 | 2/ | - | 0.971 | - |
| 6 Texas | 370,674 | 1,369,589 | 472,447 | 184,764 | 780,172 | 248,711 | 0.498 | 0.570 | 0.526 |
| 7 Colorado | 1,065,320 | 2,259,442 | 675,838 | 777,830 | 1,490,695 | 465,720 | 0.730 | 0.660 | 0.689 |
| 7 Idaho | 3,043,171 | 2,497,053 | 1,008,789 | 1,455,049 | 1,400,436 | 556,872 | 0.478 | 0.561 | 0.552 |
| 7 Montana | 6,020,567 | 7,658,672 | 2,809,812 | 3,231,498 | 4,361,920 | 1,613,967 | 0.537 | 0.570 | 0.574 |
| 7 Nevada | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Utah | 528,889 | 2/ | 980,483 | 276,995 | 2/ | 562,856 | 0.524 | - | 0.574 |
| 7 Wyoming | 1,609,751 | 1,740,759 | 1,541,956 | 844,958 | 972,087 | 855,968 | 0.525 | 0.558 | 0.555 |
| 8 California | 5,601,961 | 10,316,412 | 4,962,557 | 2,955,975 | 5,665,691 | 2,745,182 | 0.528 | 0.549 | 0.553 |
| 8 Oregon | 536,924 | 797,651 | 34,995 | 296,035 | 426,255 | 23,354 | 0.551 | 0.534 | 0.667 |
| 8 Washington | 2,052,329 | 1,414,084 | 490,545 | 1,043,024 | 794,690 | 277,190 | 0.508 | 0.562 | 0.565 |
| Other | 710,598 | 2,891,042 | 378,066 | 460,429 | 1,720,709 | 248,211 | 0.648 | 0.595 | 0.657 |
| Total | 69,401,528 | 86,517,797 | 45,033,046 | 36,682,804 | 48,169,669 | 24,959,903 | 0.529 | 0.557 | 0.554 |
| Region totals: | | | | | | | | | |
| 1..... | 662,842 | 529,557 | 102,456 | 385,538 | 302,235 | 68,399 | 0.582 | 0.571 | 0.668 |
| 2..... | 45,354 | 27,496 | 1,906 | 54,169 | 28,880 | 1,958 | 1.194 | 1.050 | 1.027 |
| 3..... | 1,107,281 | 370,697 | 2,342,211 | 565,335 | 225,940 | 1,330,170 | 0.511 | 0.610 | 0.568 |
| 4..... | 7,829,824 | 6,927,231 | 3,513,963 | 4,715,527 | 3,947,538 | 2,097,976 | 0.602 | 0.570 | 0.597 |
| 5..... | 38,068,717 | 47,047,685 | 25,298,794 | 19,360,632 | 25,665,770 | 13,662,825 | 0.509 | 0.546 | 0.540 |
| 6..... | 518,000 | 2,040,016 | 890,675 | 259,810 | 1,166,823 | 449,255 | 0.502 | 0.572 | 0.504 |
| 7..... | 12,267,698 | 14,155,926 | 7,016,878 | 6,586,330 | 8,225,138 | 4,055,383 | 0.537 | 0.581 | 0.578 |
| 8..... | 8,191,214 | 12,528,147 | 5,488,097 | 4,295,034 | 6,886,636 | 3,045,726 | 0.524 | 0.550 | 0.555 |
| Other..... | 710,598 | 2,891,042 | 378,066 | 460,429 | 1,720,709 | 248,211 | 0.648 | 0.595 | 0.657 |
| Total..... | 69,401,528 | 86,517,797 | 45,033,046 | 36,682,804 | 48,169,669 | 24,959,903 | 0.529 | 0.557 | 0.554 |

See footnotes at end of table.

Table E-7--Continued.
Honey: Sales by U.S. beekeepers, by colors and by states, 1990-92

**EXTRA LIGHT**

| Region and state | Quantity--pounds | | | Value--dollars | | | Unit value--per pound | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ |
| 1 Connecticut | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Maine | 110,733 | 154,777 | 22,789 | $ 72,363 | $ 102,484 | $ 14,599 | $0.653 | $0.662 | $0.641 |
| 1 Massachusetts | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Hampshire | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Jersey | 2/ | 59,857 | 2/ | 2/ | 35,511 | 2/ | - | 0.593 | - |
| 1 New York | 748,601 | 1,409,300 | 634,605 | 441,949 | 879,965 | 404,300 | 0.590 | 0.624 | 0.637 |
| 1 Pennsylvania | 352,253 | 218,511 | 92,062 | 204,089 | 121,761 | 52,812 | 0.57 | 0.55 | 0.57 |
| 1 Rhode Island | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Vermont | 54,067 | 2/ | 80,293 | 43,863 | 2/ | 65,730 | 0.811 | - | 0.819 |
| 2 Delaware | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Kentucky | 37,440 | 8,362 | 11,155 | 29,972 | 8,826 | 9,905 | 0.801 | 1.055 | 0.888 |
| 2 Maryland | 2/ | 13,316 | 5,024 | 2/ | 20,027 | 3,922 | - | 1.504 | 0.781 |
| 2 N. Carolina | 40,922 | 97,126 | 32,156 | 25,627 | 58,563 | 19,762 | 0.626 | 0.603 | 0.615 |
| 2 Tennessee | 53,823 | 37,405 | 35,224 | 45,779 | 26,381 | 39,990 | 0.851 | 0.705 | 1.135 |
| 2 Virginia | 16,794 | 164,770 | 26,432 | 16,113 | 99,375 | 27,501 | 0.959 | 0.603 | 1.040 |
| 2 W. Virginia | 1,701 | 24,158 | 50,742 | 1,728 | 23,521 | 45,761 | 1.016 | 0.974 | 0.902 |
| 3 Alabama | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 Florida | 5,382,656 | 4,500,380 | 3,210,682 | 2,517,473 | 2,348,799 | 1,697,497 | 0.468 | 0.522 | 0.529 |
| 3 Georgia | 965,648 | 588,201 | 1,195,337 | 560,708 | 348,044 | 860,242 | 0.581 | 0.592 | 0.720 |
| 3 Mississippi | 2/ | 114,699 | 110,843 | 2/ | 55,970 | 57,854 | - | 0.488 | 0.522 |
| 3 S. Carolina | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Illinois | 182,828 | 184,759 | 42,526 | 102,154 | 120,859 | 51,081 | 0.559 | 0.654 | 1.201 |
| 4 Indiana | 246,251 | 134,480 | 20,001 | 240,322 | 98,919 | 20,648 | 0.976 | 0.736 | 1.032 |
| 4 Michigan | 2,213,576 | 1,070,042 | 532,150 | 1,206,868 | 609,506 | 327,989 | 0.545 | 0.570 | 0.616 |
| 4 Ohio | 245,144 | 679,429 | 208,490 | 132,370 | 399,909 | 137,521 | 0.540 | 0.589 | 0.660 |
| 4 Wisconsin | 1,094,213 | 206,695 | 225,171 | 610,116 | 124,227 | 134,531 | 0.558 | 0.601 | 0.597 |
| 5 Iowa | 348,098 | 543,684 | 420,742 | 205,160 | 311,789 | 239,834 | 0.589 | 0.573 | 0.570 |
| 5 Kansas | 403,503 | 410,929 | 89,283 | 259,524 | 234,013 | 50,159 | 0.643 | 0.569 | 0.562 |
| 5 Minnesota | 1,175,099 | 1,375,974 | 350,668 | 567,520 | 738,442 | 186,307 | 0.483 | 0.537 | 0.531 |
| 5 Missouri | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 Nebraska | 2,054,180 | 1,596,273 | 284,701 | 935,301 | 889,600 | 154,130 | 0.455 | 0.557 | 0.541 |
| 5 N. Dakota | 1,377,813 | 1,780,397 | 795,931 | 688,336 | 953,906 | 421,594 | 0.500 | 0.536 | 0.530 |
| 5 S. Dakota | 1,173,768 | 489,152 | 891,081 | 550,010 | 256,153 | 45,206 | 0.469 | 0.524 | 0.051 |
| 6 Arizona | 885,558 | 1,683,405 | 1,155,636 | 432,419 | 893,751 | 621,336 | 0.488 | 0.531 | 0.538 |
| 6 Arkansas | 1,123,801 | 666,417 | 290,378 | 560,918 | 337,128 | 154,168 | 0.499 | 0.506 | 0.531 |
| 6 Louisiana | 362,428 | 316,375 | 641,588 | 171,540 | 170,843 | 321,971 | 0.473 | 0.540 | 0.502 |
| 6 New Mexico | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Oklahoma | 95,647 | 110,155 | 165,190 | 76,035 | 88,236 | 104,156 | 0.795 | 0.801 | 0.631 |
| 6 Texas | 1,245,150 | 1,946,277 | 894,510 | 1,116,574 | 1,082,170 | 485,903 | 0.897 | 0.556 | 0.543 |
| 7 Colorado | 934,737 | 1,047,702 | 439,568 | 547,082 | 584,634 | 229,070 | 0.585 | 0.558 | 0.521 |
| 7 Idaho | 1,290,025 | 1,913,759 | 1,634,653 | 608,572 | 990,757 | 846,929 | 0.472 | 0.518 | 0.518 |
| 7 Montana | 2/ | 21,103 | 2/ | 2/ | 14,503 | 2/ | - | 0.687 | - |
| 7 Nevada | 2 | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Utah | 444,250 | 307,374 | 135,926 | 259,995 | 181,989 | 89,074 | 0.585 | 0.592 | 0.655 |
| 7 Wyoming | 2/ | 23,449 | 165,200 | 2/ | 13,415 | 89,350 | - | 0.572 | 0.541 |
| 8 California | 6,389,614 | 8,527,662 | 3,407,752 | 3,193,009 | 4,437,878 | 1,826,865 | 0.500 | 0.520 | 0.536 |
| 8 Oregon | 359,734 | 431,874 | 125,209 | 192,339 | 238,748 | 73,281 | 0.535 | 0.553 | 0.585 |
| 8 Washington | 897,396 | 111,166 | 102,145 | 470,158 | 73,586 | 71,241 | 0.524 | 0.662 | 0.697 |
| Total | 34,073,617 | 34,084,442 | 19,277,274 | 17,998,286 | 18,630,759 | 10,847,706 | 0.528 | 0.547 | 0.563 |
| Region totals: | | | | | | | | | |
| 1..... | 1,265,654 | 1,842,445 | 829,749 | 762,264 | 1,139,721 | 537,441 | 0.602 | 0.619 | 0.648 |
| 2..... | 150,680 | 345,137 | 160,733 | 119,219 | 236,693 | 146,841 | 0.791 | 0.686 | 0.914 |
| 3..... | 6,348,304 | 5,203,280 | 4,516,862 | 3,078,181 | 2,752,813 | 2,615,593 | 0.485 | 0.529 | 0.579 |
| 4..... | 3,982,012 | 2,275,405 | 1,028,338 | 2,291,830 | 1,353,420 | 671,770 | 0.576 | 0.595 | 0.653 |
| 5..... | 6,532,461 | 6,196,409 | 2,832,406 | 3,205,851 | 3,383,903 | 1,097,230 | 0.491 | 0.546 | 0.387 |
| 6..... | 3,712,584 | 4,722,629 | 3,147,302 | 2,357,486 | 2,572,128 | 1,687,534 | 0.635 | 0.545 | 0.536 |
| 7..... | 2,669,012 | 3,313,387 | 2,375,347 | 1,415,649 | 1,785,298 | 1,254,423 | 0.530 | 0.539 | 0.528 |
| 8..... | 7,646,744 | 9,070,702 | 3,635,106 | 3,855,506 | 4,750,212 | 1,971,387 | 0.504 | 0.524 | 0.542 |
| Total..... | 34,073,617 | 34,084,442 | 19,277,274 | 17,998,286 | 18,630,759 | 10,847,706 | 0.528 | 0.547 | 0.563 |

See footnotes at end of table.

Table E-7--Continued.
Honey: Sales by U.S. beekeepers, by colors and by states, 1990-92

**LIGHT DARK**

| Region and state | Quantity--pounds | | | Value--dollars | | | Unit value--per pound | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ |
| 1 Connecticut | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Maine | 42,579 | 82,723 | 17,336 | $ 28,329 | $ 56,428 | $ 14,650 | $0.665 | $0.682 | $0.845 |
| 1 Massachusetts | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Hampshire | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Jersey | 148,647 | 149,445 | 62,463 | 151,594 | 154,311 | 59,628 | 1.020 | 1.033 | 0.955 |
| 1 New York | 754,439 | 972,395 | 280,224 | 577,359 | 633,692 | 179,836 | 0.765 | 0.652 | 0.642 |
| 1 Pennsylvania | 981,630 | 609,991 | 440,702 | 684,531 | 459,011 | 329,353 | 0.697 | 0.752 | 0.747 |
| 1 Rhode Island | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Vermont | 103,133 | 88,380 | 133,487 | 96,856 | 69,354 | 118,067 | 0.939 | 0.785 | 0.884 |
| 2 Delaware | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Kentucky | 53,215 | 24,096 | 18,960 | 48,293 | 21,580 | 14,854 | 0.908 | 0.896 | 0.783 |
| 2 Maryland | 89,803 | 30,814 | 25,534 | 81,515 | 37,411 | 22,909 | 0.908 | 1.214 | 0.897 |
| 2 N. Carolina | 180,695 | 228,268 | 157,629 | 120,424 | 144,710 | 108,855 | 0.666 | 0.634 | 0.691 |
| 2 Tennessee | 305,647 | 319,567 | 145,614 | 294,309 | 211,225 | 117,240 | 0.963 | 0.661 | 0.805 |
| 2 Virginia | 69,570 | 173,851 | 210,653 | 54,619 | 143,191 | 147,368 | 0.785 | 0.824 | 0.700 |
| 2 W. Virginia | 120,104 | 226,623 | 246,368 | 106,065 | 206,158 | 204,668 | 0.883 | 0.910 | 0.831 |
| 3 Alabama | 678,381 | 273,614 | 576,002 | 365,842 | 171,524 | 344,847 | 0.539 | 0.627 | 0.599 |
| 3 Florida | 4,860,060 | 7,600,799 | 5,122,470 | 2,363,112 | 3,994,776 | 2,656,367 | 0.486 | 0.526 | 0.519 |
| 3 Georgia | 2,601,104 | 1,290,354 | 1,563,908 | 1,411,553 | 773,076 | 914,970 | 0.543 | 0.599 | 0.585 |
| 3 Mississippi | 734,989 | 901,985 | 553,472 | 372,120 | 474,272 | 282,726 | 0.506 | 0.526 | 0.511 |
| 3 S. Carolina | 95,887 | 130,978 | 31,229 | 58,181 | 104,730 | 22,969 | 0.607 | 0.800 | 0.736 |
| 4 Illinois | 208,495 | 402,180 | 261,886 | 166,008 | 325,268 | 229,265 | 0.796 | 0.809 | 0.875 |
| 4 Indiana | 532,714 | 313,644 | 159,345 | 332,791 | 206,947 | 104,064 | 0.625 | 0.660 | 0.653 |
| 4 Michigan | 637,640 | 1,026,124 | 354,496 | 406,000 | 581,759 | 198,820 | 0.637 | 0.567 | 0.561 |
| 4 Ohio | 336,949 | 553,400 | 203,884 | 234,163 | 500,177 | 130,232 | 0.695 | 0.904 | 0.639 |
| 4 Wisconsin | 206,901 | 371,319 | 195,889 | 127,258 | 227,887 | 109,476 | 0.615 | 0.614 | 0.559 |
| 5 Iowa | 129,218 | 168,038 | 85,486 | 78,515 | 129,748 | 77,107 | 0.608 | 0.772 | 0.902 |
| 5 Kansas | 388,069 | 186,003 | 60,027 | 208,399 | 112,964 | 39,274 | 0.537 | 0.607 | 0.654 |
| 5 Minnesota | 878,795 | 297,398 | 264,079 | 420,079 | 162,310 | 146,309 | 0.478 | 0.546 | 0.554 |
| 5 Missouri | 161,679 | 183,034 | 142,883 | 149,829 | 169,729 | 177,316 | 0.927 | 0.927 | 1.241 |
| 5 Nebraska | 68,456 | 682,071 | 89,332 | 54,555 | 273,725 | 52,636 | 0.797 | 0.401 | 0.589 |
| 5 N. Dakota | 589,863 | 509,883 | 282,938 | 270,594 | 261,332 | 157,069 | 0.459 | 0.513 | 0.555 |
| 5 S. Dakota | 230,021 | 902,492 | 2/ | 111,848 | 446,855 | 2/ | 0.486 | 0.495 | - |
| 6 Arizona | 658,793 | 1,169,593 | 422,083 | 320,249 | 604,869 | 223,432 | 0.486 | 0.517 | 0.529 |
| 6 Arkansas | 685,325 | 1,163,561 | 322,688 | 323,465 | 647,466 | 173,498 | 0.472 | 0.556 | 0.538 |
| 6 Louisiana | 2,048,955 | 2,085,398 | 2,263,816 | 1,096,714 | 1,088,822 | 1,125,801 | 0.535 | 0.522 | 0.497 |
| 6 New Mexico | 542,785 | 257,660 | 470,121 | 276,899 | 154,237 | 255,839 | 0.510 | 0.599 | 0.544 |
| 6 Oklahoma | 29,200 | 90,162 | 22,066 | 25,509 | 77,870 | 20,425 | 0.874 | 0.864 | 0.926 |
| 6 Texas | 4,610,151 | 3,752,447 | 2,774,427 | 2,393,661 | 1,946,914 | 1,478,874 | 0.519 | 0.519 | 0.533 |
| 7 Colorado | 169,215 | 309,610 | 95,461 | 111,520 | 184,542 | 67,122 | 0.659 | 0.596 | 0.703 |
| 7 Idaho | 247,200 | 702,506 | 661,602 | 121,485 | 360,607 | 334,196 | 0.491 | 0.513 | 0.505 |
| 7 Montana | 32,433 | 19,452 | 4,451 | 28,333 | 13,962 | 2,840 | 0.874 | 0.718 | 0.638 |
| 7 Nevada | 35,335 | 67,065 | 16,638 | 20,109 | 51,586 | 13,592 | 0.569 | 0.769 | 0.817 |
| 7 Utah | 355,097 | 598,661 | 264,690 | 200,230 | 314,321 | 168,675 | 0.564 | 0.525 | 0.637 |
| 7 Wyoming | 131,564 | 2/ | 2/ | 55,628 | 2/ | 2/ | 0.423 | - | - |
| 8 California | 6,976,248 | 11,706,226 | 5,798,445 | 3,994,413 | 6,279,341 | 3,050,606 | 0.573 | 0.536 | 0.526 |
| 8 Oregon | 397,395 | 229,797 | 120,226 | 219,239 | 144,277 | 78,974 | 0.552 | 0.628 | 0.657 |
| 8 Washington | 509,242 | 464,842 | 646,705 | 256,791 | 299,738 | 376,891 | 0.504 | 0.645 | 0.583 |
| Other | 1,150,060 | 1,183,739 | 650,741 | 594,684 | 682,502 | 366,676 | 0.517 | 0.577 | 0.563 |
| Total | 34,767,681 | 42,500,188 | 26,220,456 | 19,413,670 | 23,905,204 | 14,698,316 | 0.558 | 0.562 | 0.561 |
| Region totals: | | | | | | | | | |
| 1..... | 2,030,428 | 1,902,934 | 934,212 | 1,538,669 | 1,372,796 | 701,534 | 0.758 | 0.721 | 0.751 |
| 2..... | 819,034 | 1,003,219 | 804,758 | 705,225 | 764,275 | 615,894 | 0.861 | 0.762 | 0.765 |
| 3..... | 8,970,421 | 10,197,730 | 7,847,081 | 4,570,808 | 5,518,378 | 4,221,879 | 0.510 | 0.541 | 0.538 |
| 4..... | 1,922,699 | 2,666,667 | 1,175,500 | 1,266,220 | 1,842,038 | 771,857 | 0.659 | 0.691 | 0.657 |
| 5..... | 2,446,101 | 2,928,919 | 924,745 | 1,293,819 | 1,556,663 | 649,711 | 0.529 | 0.531 | 0.703 |
| 6..... | 8,575,209 | 8,518,821 | 6,275,201 | 4,436,497 | 4,520,178 | 3,277,869 | 0.517 | 0.531 | 0.522 |
| 7..... | 970,844 | 1,697,294 | 1,042,842 | 537,305 | 925,018 | 586,425 | 0.553 | 0.545 | 0.562 |
| 8..... | 7,882,885 | 12,400,865 | 6,565,376 | 4,470,443 | 6,723,356 | 3,506,471 | 0.567 | 0.542 | 0.534 |
| Other..... | 1,150,060 | 1,183,739 | 650,741 | 594,684 | 682,502 | 366,676 | 0.517 | 0.577 | 0.563 |
| Total..... | 34,767,681 | 42,500,188 | 26,220,456 | 19,413,670 | 23,905,204 | 14,698,316 | 0.558 | 0.562 | 0.561 |

See footnotes at end of table.

Table E-7--Continued.
Honey: Sales by U.S. beekeepers, by colors and by states, 1990-92

**ALL OTHER**

| Region and state | Quantity--pounds | | | Value--dollars | | | Unit value--per pound | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ |
| 1 Connecticut | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Maine | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Massachusetts | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Hampshire | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Jersey | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New York | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Pennsylvania | 41,523 | 16,556 | 2/ | $ 37,956 | $ 11,882 | 2/ | $0.914 | $0.718 | - |
| 1 Rhode Island | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Vermont | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Delaware | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Kentucky | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Maryland | 5,184 | 18,981 | 933 | 3,198 | 15,132 | $ 833 | 0.617 | 0.797 | $0.893 |
| 2 N. Carolina | 20,062 | 20,890 | 14,994 | 25,055 | 28,124 | 28,073 | 1.249 | 1.346 | 1.872 |
| 2 Tennessee | 19,886 | 12,691 | 10,837 | 29,958 | 17,960 | 8,890 | 1.506 | 1.415 | 0.820 |
| 2 Virginia | 7,080 | 13,489 | 2/ | 11,083 | 10,156 | 2/ | 1.565 | 0.753 | - |
| 2 W. Virginia | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 Alabama | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 Florida | 196,033 | 187,332 | 225,100 | 109,853 | 106,676 | 114,784 | 0.560 | 0.569 | 0.510 |
| 3 Georgia | 404,908 | 124,710 | 16,072 | 378,776 | 134,148 | 22,938 | 0.935 | 1.076 | 1.427 |
| 3 Mississippi | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 3 S. Carolina | 31,009 | 2,533 | 4,625 | 38,849 | 3,657 | 3,217 | 1.253 | 1.444 | 0.696 |
| 4 Illinois | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Indiana | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Michigan | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Ohio | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 4 Wisconsin | | 6,555 | | | 4,063 | | - | 0.620 | - |
| 5 Iowa | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 Kansas | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 Minnesota | 244,483 | 127,136 | | 78,549 | 32,802 | | 0.321 | 0.258 | - |
| 5 Missouri | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 Nebraska | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 N. Dakota | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 5 S. Dakota | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Arizona | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Arkansas | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Louisiana | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 New Mexico | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Oklahoma | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 6 Texas | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Colorado | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Idaho | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Montana | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Nevada | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Utah | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 7 Wyoming | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 8 California | 26,974 | 607,589 | 417,372 | 24,767 | 309,029 | 198,534 | 0.918 | 0.509 | 0.476 |
| 8 Oregon | 68,754 | 2/ | 2/ | 33,179 | 2/ | 2/ | 0.483 | - | - |
| 8 Washington | 276,074 | 180,994 | 2/ | 77,496 | 62,038 | 2/ | 0.281 | 0.343 | - |
| Other | 363,590 | 351,588 | 286,781 | 177,960 | 240,787 | 183,856 | 0.489 | 0.685 | 0.641 |
| Total | 1,705,560 | 1,671,044 | 976,714 | 1,026,679 | 976,454 | 561,125 | 0.602 | 0.584 | 0.575 |
| Region totals: | | | | | | | | | |
| 1..... | 41,523 | 16,556 | 0 | 37,956 | 11,882 | 0 | 0.914 | 0.718 | - |
| 2..... | 52,212 | 66,051 | 26,764 | 69,294 | 71,372 | 37,796 | 1.327 | 1.081 | 1.412 |
| 3..... | 631,950 | 314,575 | 245,797 | 527,478 | 244,481 | 140,939 | 0.835 | 0.777 | 0.573 |
| 4..... | 0 | 6,555 | 0 | 0 | 4,063 | 0 | - | 0.620 | - |
| 5..... | 244,483 | 127,136 | 0 | 78,549 | 32,802 | 0 | 0.321 | 0.258 | - |
| 6..... | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - |
| 7..... | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - |
| 8..... | 371,802 | 788,583 | 417,372 | 135,442 | 371,067 | 198,534 | 0.364 | 0.471 | 0.476 |
| Other..... | 363,590 | 351,588 | 286,781 | 177,960 | 240,787 | 183,856 | 0.489 | 0.685 | 0.641 |
| Total..... | 1,705,560 | 1,671,044 | 976,714 | 1,026,679 | 976,454 | 561,125 | 0.602 | 0.584 | 0.575 |

See footnotes at end of table.

Table E-7--Continued.
Honey: Sales by U.S. beekeepers, by states and colors, 1990-92

**TOTAL ALL COLORS**

| Region and state | Quantity--pounds | | | Value--dollars | | | Unit value--per pound | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ | 1990 | 1991 | 1992 1/ |
| 1 Connecticut | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Maine | 277,203 | 266,339 | 46,230 | $ 177,578 | $ 182,717 | $ 35,090 | $0.641 | $0.686 | $0.759 |
| 1 Massachuset | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Hampshi | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 New Jersey | 229,275 | 219,694 | 71,710 | 207,275 | 202,918 | 69,090 | 0.904 | 0.924 | 0.963 |
| 1 New York | 1,988,688 | 2,891,183 | 1,022,503 | 1,286,632 | 1,802,424 | 666,320 | 0.647 | 0.623 | 0.652 |
| 1 Pennsylvani | 1,395,624 | 878,137 | 562,165 | 940,810 | 615,797 | 401,144 | 0.674 | 0.701 | 0.714 |
| 1 Rhode Islan | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 1 Vermont | 211,386 | 164,172 | 215,894 | 182,608 | 130,707 | 186,156 | 0.864 | 0.796 | 0.862 |
| 2 Delaware | 2/ | 2/ | 2/ | 2/ | 2/ | 2/ | - | - | - |
| 2 Kentucky | 117,017 | 35,660 | 32,021 | 107,731 | 34,258 | 26,717 | 0.921 | 0.961 | 0.834 |
| 2 Maryland | 96,791 | 90,607 | 47,180 | 87,081 | 101,450 | 41,345 | 0.900 | 1.120 | 0.876 |
| 2 North Carol | 242,455 | 411,700 | 206,482 | 172,659 | 272,113 | 160,269 | 0.712 | 0.661 | 0.776 |
| 2 Tennessee | 395,682 | 385,720 | 251,491 | 391,934 | 264,232 | 175,451 | 0.991 | 0.685 | 0.698 |
| 2 Virginia | 106,496 | 352,110 | 237,085 | 101,409 | 252,722 | 174,869 | 0.952 | 0.718 | 0.738 |
| 2 West Virgin | 127,427 | 307,205 | 379,862 | 113,367 | 266,055 | 306,605 | 0.890 | 0.866 | 0.807 |
| 3 Alabama | 707,716 | 275,111 | 620,201 | 386,027 | 173,080 | 377,911 | 0.545 | 0.629 | 0.609 |
| 3 Florida | 11,546,030 | 12,659,208 | 10,883,527 | 5,555,773 | 6,676,191 | 5,788,068 | 0.481 | 0.527 | 0.532 |
| 3 Georgia | 4,030,220 | 2,109,499 | 2,853,258 | 2,383,870 | 1,326,955 | 1,878,630 | 0.591 | 0.629 | 0.658 |
| 3 Mississippi | 893,771 | 1,016,684 | 664,315 | 495,924 | 530,242 | 340,580 | 0.555 | 0.522 | 0.513 |
| 3 South Carol | 174,424 | 160,715 | 39,353 | 120,372 | 124,113 | 30,335 | 0.690 | 0.772 | 0.771 |
| 4 Illinois | 501,876 | 803,266 | 445,528 | 367,297 | 636,267 | 397,982 | 0.732 | 0.792 | 0.893 |
| 4 Indiana | 839,434 | 465,449 | 182,042 | 610,505 | 318,402 | 127,944 | 0.727 | 0.684 | 0.703 |
| 4 Ohio | 1,561,361 | 2,651,412 | 811,562 | 1,232,383 | 1,671,828 | 484,830 | 0.789 | 0.631 | 0.597 |
| 4 Wisconsin | 5,865,355 | 4,238,255 | 2,412,711 | 3,332,511 | 2,390,554 | 1,433,314 | 0.568 | 0.564 | 0.594 |
| 5 Iowa | 3,571,291 | 4,666,961 | 2,299,207 | 1,883,063 | 2,653,867 | 1,292,119 | 0.527 | 0.569 | 0.562 |
| 5 Kansas | 1,099,687 | 1,268,838 | 302,844 | 654,467 | 764,935 | 178,197 | 0.595 | 0.603 | 0.588 |
| 5 Minnesota | 12,145,077 | 12,924,750 | 6,685,623 | 5,967,787 | 7,017,106 | 3,671,133 | 0.491 | 0.543 | 0.549 |
| 5 Missouri | 1,249,966 | 2,716,494 | 1,555,935 | 713,640 | 1,672,211 | 994,280 | 0.571 | 0.616 | 0.639 |
| 5 Nebraska | 5,979,145 | 5,399,937 | 3,154,338 | 2,904,427 | 2,837,302 | 1,676,790 | 0.486 | 0.525 | 0.532 |
| 5 North Dakot | 9,491,608 | 14,621,923 | 8,352,413 | 4,906,567 | 7,954,827 | 4,427,953 | 0.517 | 0.544 | 0.530 |
| 5 South Dakot | 14,730,076 | 17,319,053 | 7,293,150 | 7,389,885 | 9,279,841 | 3,912,206 | 0.502 | 0.536 | 0.536 |
| 6 Arizona | 1,690,748 | 3,311,673 | 1,961,104 | 826,423 | 1,749,177 | 1,015,856 | 0.489 | 0.528 | 0.518 |
| 6 Arkansas | 1,812,262 | 2,048,952 | 642,474 | 886,548 | 1,104,648 | 345,903 | 0.489 | 0.539 | 0.538 |
| 6 Louisiana | 2,412,305 | 2,448,261 | 2,954,809 | 1,270,101 | 1,285,099 | 1,484,517 | 0.527 | 0.525 | 0.502 |
| 6 New Mexico | 1,079,352 | 694,261 | 482,767 | 571,092 | 388,031 | 268,623 | 0.529 | 0.559 | 0.556 |
| 6 Oklahoma | 143,017 | 241,671 | 189,741 | 111,783 | 206,350 | 128,402 | 0.782 | 0.854 | 0.677 |
| 6 Texas | 6,357,934 | 7,110,086 | 4,174,742 | 3,739,900 | 3,832,849 | 2,232,698 | 0.588 | 0.539 | 0.535 |
| 7 Colorado | 2,171,277 | 2/ | 2/ | 1,437,799 | 2/ | 2/ | 0.662 | - | - |
| 7 Idaho | 4,580,475 | 5,113,318 | 3,309,287 | 2,185,146 | 2,751,800 | 1,739,058 | 0.477 | 0.538 | 0.526 |
| 7 Montana | 6,173,950 | 7,699,227 | 2,938,116 | 3,314,282 | 4,390,385 | 1,677,923 | 0.537 | 0.570 | 0.571 |
| 7 Nevada | 119,025 | 69,778 | 17,788 | 85,798 | 54,430 | 15,096 | 0.721 | 0.780 | 0.849 |
| 7 Utah | 1,328,236 | 1,445,164 | 1,382,143 | 737,220 | 797,397 | 821,654 | 0.555 | 0.552 | 0.594 |
| 7 Wyoming | 1,789,780 | 1,833,654 | 1,710,710 | 932,380 | 1,007,472 | 948,346 | 0.521 | 0.549 | 0.554 |
| 8 California | 18,994,797 | 31,157,889 | 14,586,126 | 10,168,164 | 16,691,939 | 7,821,187 | 0.535 | 0.536 | 0.536 |
| 8 Oregon | 1,362,627 | 1,478,566 | 295,726 | 740,792 | 820,211 | 182,274 | 0.544 | 0.555 | 0.616 |
| 8 Washington | 3,735,041 | 2,171,086 | 1,238,160 | 1,847,469 | 1,230,052 | 732,514 | 0.495 | 0.567 | 0.592 |
| Other | 1,527,541 | 4,914,048 | 2,129,057 | 751,013 | 3,079,414 | 1,299,948 | 0.492 | 0.627 | 0.611 |
| Total | 139,948,386 | 164,773,471 | 91,507,490 | 75,121,439 | 91,682,086 | 51,067,050 | 0.537 | 0.556 | 0.558 |
| Region totals: | | | | | | | | | |
| 1..... | 4,102,176 | 4,419,525 | 1,918,502 | 2,794,903 | 2,934,563 | 1,357,800 | 0.681 | 0.664 | 0.708 |
| 2..... | 1,085,868 | 1,583,002 | 1,154,121 | 974,181 | 1,190,830 | 885,256 | 0.897 | 0.752 | 0.767 |
| 3..... | 17,352,161 | 16,221,217 | 15,060,654 | 8,941,966 | 8,830,581 | 8,415,524 | 0.515 | 0.544 | 0.559 |
| 4..... | 13,862,964 | 11,894,137 | 5,717,953 | 8,384,643 | 7,156,769 | 3,541,793 | 0.605 | 0.602 | 0.619 |
| 5..... | 48,266,850 | 58,917,956 | 29,643,510 | 24,419,836 | 32,180,089 | 16,152,678 | 0.506 | 0.546 | 0.545 |
| 6..... | 13,495,618 | 15,854,904 | 10,405,637 | 7,405,847 | 8,566,154 | 5,475,999 | 0.549 | 0.540 | 0.526 |
| 7..... | 16,162,743 | 16,161,141 | 9,358,044 | 8,692,625 | 9,001,484 | 5,202,077 | 0.538 | 0.557 | 0.556 |
| 8..... | 24,092,465 | 34,807,541 | 16,120,012 | 12,756,425 | 18,742,202 | 8,735,975 | 0.529 | 0.538 | 0.542 |
| Other..... | 1,527,541 | 4,914,048 | 2,129,057 | 751,013 | 3,079,414 | 1,299,948 | 0.492 | 0.627 | 0.611 |
| Total..... | 139,948,386 | 164,773,471 | 91,507,490 | 75,121,439 | 91,682,086 | 51,067,050 | 0.537 | 0.556 | 0.558 |

1/ 1992 data are based on partial compilation of sales of the 1992 honey crop.
2/ Not applicable, or not reported separately to avoid disclosing data for individual operations.
Source: NASS, USDA.

Table E-8
Honey: Share of sales by U.S. beekeepers, by colors and by states, 1990-92

| | WATERWHITE-- | | | EXTRA LIGHT-- | | | LIGHT DARK-- | | | ALL OTHER-- | | | TOTAL-- | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 |
| Region | | | | | | | | | | | | | | | |
| 1 Connecticut | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 Maine | 0.2 | 0.0 | 0.0 | 0.3 | 0.5 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 |
| 1 Massachuset | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 New Hampshi | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 New Jersey | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.4 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 |
| 1 New York | 0.7 | 0.6 | 0.2 | 2.2 | 4.1 | 3.3 | 2.2 | 2.3 | 1.1 | 0.0 | 0.0 | 0.0 | 1.4 | 1.8 | 1.1 |
| 1 Pennsylvani | 0.0 | 0.0 | 0.0 | 1.0 | 0.6 | 0.5 | 2.8 | 1.4 | 1.7 | 2.4 | 1.0 | 0.0 | 1.0 | 0.5 | 0.6 |
| 1 Rhode Islan | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1 Vermont | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.4 | 0.3 | 0.2 | 0.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.2 |
| 2 Delaware | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 Kentucky | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 2 Maryland | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.1 | 0.1 | 0.3 | 1.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| 2 North Carol | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.2 | 0.5 | 0.5 | 0.6 | 1.2 | 1.3 | 1.5 | 0.2 | 0.2 | 0.2 |
| 2 Tennessee | 0.0 | 0.0 | 0.0 | 0.2 | 0.1 | 0.2 | 0.9 | 0.8 | 0.6 | 1.2 | 0.8 | 1.1 | 0.3 | 0.2 | 0.3 |
| 2 Virginia | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.1 | 0.2 | 0.4 | 0.8 | 0.4 | 0.8 | 0.0 | 0.1 | 0.2 | 0.3 |
| 2 West Virgin | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.3 | 0.5 | 0.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 |
| 3 Alabama | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.6 | 2.2 | 0.0 | 0.0 | 0.0 | 0.5 | 0.2 | 0.7 |
| 3 Florida | 1.6 | 0.4 | 5.2 | 15.8 | 13.2 | 16.7 | 14.0 | 17.9 | 19.5 | 11.5 | 11.2 | 23.0 | 8.3 | 7.7 | 11.9 |
| 3 Georgia | 0.0 | 0.0 | 0.0 | 2.8 | 1.7 | 6.2 | 7.5 | 3.0 | 6.0 | 23.7 | 7.5 | 1.6 | 2.9 | 1.3 | 3.1 |
| 3 Mississippi | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.6 | 2.1 | 2.1 | 2.1 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.7 |
| 3 South Carol | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.1 | 1.8 | 0.2 | 0.5 | 0.1 | 0.1 | 0.0 |
| 4 Illinois | 0.0 | 0.2 | 0.3 | 0.5 | 0.5 | 0.2 | 0.6 | 0.9 | 1.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.5 | 0.5 |
| 4 Indiana | 0.1 | 0.0 | 0.0 | 0.7 | 0.4 | 0.1 | 1.5 | 0.7 | 0.6 | 0.0 | 0.0 | 0.0 | 0.6 | 0.3 | 0.2 |
| 4 Michigan | 3.2 | 1.9 | 2.2 | 6.5 | 3.1 | 2.8 | 1.8 | 2.4 | 1.4 | 0.0 | 0.0 | 0.0 | 3.6 | 2.3 | 2.0 |
| 4 Ohio | 1.4 | 1.6 | 0.9 | 0.7 | 2.0 | 1.1 | 1.0 | 1.3 | 0.8 | 0.0 | 0.0 | 0.0 | 1.1 | 1.6 | 0.9 |
| 4 Wisconsin | 6.6 | 4.2 | 4.4 | 3.2 | 0.6 | 1.2 | 0.6 | 0.9 | 0.7 | 0.0 | 0.4 | 0.0 | 4.2 | 2.6 | 2.6 |
| 5 Iowa | 4.5 | 4.6 | 4.0 | 1.0 | 1.6 | 2.2 | 0.4 | 0.4 | 0.3 | 0.0 | 0.0 | 0.0 | 2.6 | 2.8 | 2.5 |
| 5 Kansas | 0.4 | 0.8 | 0.3 | 1.2 | 1.2 | 0.5 | 1.1 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 | 0.8 | 0.8 | 0.3 |
| 5 Minnesota | 14.2 | 12.9 | 13.5 | 3.4 | 4.0 | 1.8 | 2.5 | 0.7 | 1.0 | 14.3 | 7.6 | 0.0 | 8.7 | 7.8 | 7.3 |
| 5 Missouri | 0.2 | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.5 | 0.4 | 0.5 | 0.0 | 0.0 | 0.0 | 0.9 | 1.6 | 1.7 |
| 5 Nebraska | 5.6 | 3.6 | 6.2 | 6.0 | 4.7 | 1.5 | 0.2 | 1.6 | 0.3 | 0.0 | 0.0 | 0.0 | 4.3 | 3.3 | 3.4 |
| 5 North Dakot | 10.8 | 14.3 | 16.1 | 4.0 | 5.2 | 4.1 | 1.7 | 1.2 | 1.1 | 0.0 | 0.0 | 0.0 | 6.8 | 8.9 | 9.1 |
| 5 South Dakot | 19.2 | 18.3 | 14.2 | 3.4 | 1.4 | 4.6 | 0.7 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 10.5 | 10.5 | 8.0 |
| 6 Arizona | 0.2 | 0.5 | 0.8 | 2.6 | 4.9 | 6.0 | 1.9 | 2.8 | 1.6 | 0.0 | 0.0 | 0.0 | 1.2 | 2.0 | 2.1 |
| 6 Arkansas | 0.0 | 0.3 | 0.0 | 3.3 | 2.0 | 1.5 | 2.0 | 2.7 | 1.2 | 0.0 | 0.0 | 0.0 | 1.3 | 1.2 | 0.7 |
| 6 Louisiana | 0.0 | 0.0 | 0.1 | 1.1 | 0.9 | 3.3 | 5.9 | 4.9 | 8.6 | 0.0 | 0.0 | 0.0 | 1.7 | 1.5 | 3.2 |
| 6 New Mexico | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.6 | 0.6 | 1.8 | 0.0 | 0.0 | 0.0 | 0.8 | 0.4 | 0.5 |
| 6 Oklahoma | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.9 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| 6 Texas | 0.5 | 1.6 | 1.0 | 3.7 | 5.7 | 4.6 | 13.3 | 8.8 | 10.6 | 0.0 | 0.0 | 0.0 | 4.5 | 4.3 | 4.6 |

--continued on next page.

Table E-8--Continued.
Honey: Sales by U.S. beekeepers, by states and colors, 1990-92

| | WATERWHITE-- | | | EXTRA LIGHT-- | | | LIGHT DARK-- | | | ALL OTHER-- | | | TOTAL-- | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 | 1990 | 1991 | 1992 |
| Region | | | | | | | | | | | | | | | |
| 7 Colorado | 1.5 | 2.6 | 1.5 | 2.7 | 3.1 | 2.3 | 0.5 | 0.7 | 0.4 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 |
| 7 Idaho | 4.4 | 2.9 | 2.2 | 3.8 | 5.6 | 8.5 | 0.7 | 1.7 | 2.5 | 0.0 | 0.0 | 0.0 | 3.3 | 3.1 | 3.6 |
| 7 Montana | 8.7 | 8.9 | 6.2 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.4 | 4.7 | 3.2 |
| 7 Nevada | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 7 Utah | 0.8 | 0.0 | 2.2 | 1.3 | 0.9 | 0.7 | 1.0 | 1.4 | 1.0 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 1.5 |
| 7 Wyoming | 2.3 | 2.0 | 3.4 | 0.0 | 0.1 | 0.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.1 | 1.9 |
| 8 California | 8.1 | 11.9 | 11.0 | 18.8 | 25.0 | 17.7 | 20.1 | 27.5 | 22.1 | 1.6 | 36.4 | 42.7 | 13.6 | 18.9 | 15.9 |
| 8 Oregon | 0.8 | 0.9 | 0.1 | 1.1 | 1.3 | 0.6 | 1.1 | 0.5 | 0.5 | 4.0 | 0.0 | 0.0 | 1.0 | 0.9 | 0.3 |
| 8 Washington | 3.0 | 1.6 | 1.1 | 2.6 | 0.3 | 0.5 | 1.5 | 1.1 | 2.5 | 16.2 | 10.8 | 0.0 | 2.7 | 1.3 | 1.4 |
| Other | 1.0 | 3.3 | 0.8 | 5.2 | 3.3 | 3.9 | 3.3 | 2.8 | 2.5 | 21.3 | 21.0 | 29.4 | 1.1 | 3.0 | 2.3 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Region totals: | | | | | | | | | | | | | | | |
| 1..... | 1.0 | 0.6 | 0.2 | 3.7 | 5.4 | 4.3 | 5.8 | 4.5 | 3.6 | 2.4 | 1.0 | 0.0 | 2.9 | 2.7 | 2.1 |
| 2..... | 0.1 | 0.0 | 0.0 | 0.4 | 1.0 | 0.8 | 2.4 | 2.4 | 3.1 | 3.1 | 4.0 | 2.7 | 0.8 | 1.0 | 1.3 |
| 3..... | 1.6 | 0.4 | 5.2 | 18.6 | 15.3 | 23.4 | 25.8 | 24.0 | 29.9 | 37.1 | 18.8 | 25.2 | 12.4 | 9.8 | 16.5 |
| 4..... | 11.3 | 8.0 | 7.8 | 11.7 | 6.7 | 5.3 | 5.5 | 6.3 | 4.5 | 0.0 | 0.4 | 0.0 | 9.9 | 7.2 | 6.2 |
| 5..... | 54.9 | 54.4 | 56.2 | 19.2 | 18.2 | 14.7 | 7.0 | 6.9 | 3.5 | 14.3 | 7.6 | 0.0 | 34.5 | 35.8 | 32.4 |
| 6..... | 0.7 | 2.4 | 2.0 | 10.9 | 13.9 | 16.3 | 24.7 | 20.0 | 23.9 | 0.0 | 0.0 | 0.0 | 9.6 | 9.6 | 11.4 |
| 7..... | 17.7 | 16.4 | 15.6 | 7.8 | 9.7 | 12.3 | 2.8 | 4.0 | 4.0 | 0.0 | 0.0 | 0.0 | 11.5 | 9.8 | 10.2 |
| 8..... | 11.8 | 14.5 | 12.2 | 22.4 | 26.6 | 18.9 | 22.7 | 29.2 | 25.0 | 21.8 | 47.2 | 42.7 | 17.2 | 21.1 | 17.6 |
| Other..... | 1.0 | 3.3 | 0.8 | 5.2 | 3.3 | 3.9 | 3.3 | 2.8 | 2.5 | 21.3 | 21.0 | 29.4 | 1.1 | 3.0 | 2.3 |
| Total..... | 49.6 | 52.5 | 49.2 | 24.3 | 20.7 | 21.1 | 24.8 | 25.8 | 28.7 | 1.2 | 1.0 | 1.0 | 100.0 | 100.0 | 100.0 |

Source: NASS, USDA.

Table E-9
Natural honey: Shipments by U.S. packers, by categories, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | |
| White | 69,652 | 71,157 | 76,347 | 55,456 | 56,077 |
| Extra light | 41,849 | 46,714 | 52,862 | 38,685 | 41,382 |
| Light amber and darker | 69,730 | 68,964 | 72,170 | 54,545 | 59,703 |
| Area specialities | 322 | 303 | 301 | 220 | 251 |
| Total | 181,552 | 187,138 | 201,679 | 148,906 | 157,414 |
| | Value (*1,000 dollars*) | | | | |
| White | 63,681 | 68,516 | 74,090 | 53,491 | 54,014 |
| Extra light | 30,870 | 36,636 | 41,735 | 30,212 | 31,513 |
| Light amber and darker | 42,726 | 45,977 | 47,764 | 35,797 | 37,846 |
| Area specialities | 320 | 308 | 317 | 219 | 278 |
| Total | 137,597 | 151,438 | 163,907 | 119,718 | 123,651 |
| | Unit value (*per pound*) | | | | |
| White | $0.91 | $0.96 | $0.97 | $0.96 | $0.96 |
| Extra light | .74 | .78 | .79 | .78 | .76 |
| Light amber and darker | .61 | .67 | .66 | .66 | .63 |
| Area specialities | 1.00 | 1.02 | 1.06 | 1.00 | 1.11 |
| Average | .76 | .81 | .81 | .80 | .79 |
| | Share of total shipments quantity (*percent*) | | | | |
| White | 38.4 | 38.0 | 37.9 | 37.2 | 35.6 |
| Extra light | 23.1 | 25.0 | 26.2 | 26.0 | 26.3 |
| Light amber and darker | 38.4 | 36.9 | 35.8 | 36.6 | 37.9 |
| Area specialities | .2 | .2 | .1 | .1 | .2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | Share of total shipments value (*percent*) | | | | |
| White | 46.3 | 45.2 | 45.2 | 44.7 | 43.7 |
| Extra light | 22.4 | 24.2 | 25.5 | 25.2 | 25.5 |
| Light amber and darker | 31.1 | 30.4 | 29.1 | 29.9 | 30.6 |
| Area specialities | .2 | .2 | .2 | .2 | .2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Note.--Unit values are calculated from the unrounded figures, using data of firms supplying both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-10
Natural honey: Purchases of U.S.packers, by sources, 1990-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | |
| U.S. importers of product from-- | | | | | |
| China | 19,868 | 27,617 | 39,229 | 29,491 | 39,093 |
| Other sources | 30,307 | 29,676 | 36,457 | 26,627 | 24,589 |
| Total | 50,175 | 57,293 | 75,686 | 56,118 | 63,681 |
| Domestic producers | 121,497 | 127,226 | 123,836 | 87,028 | 89,924 |
| Other sources | 6,108 | 1,976 | 1,841 | 1,841 | 421 |
| Total | 177,780 | 186,495 | 201,363 | 144,986 | 154,026 |
| | Value (*1,000 dollars*) | | | | |
| U.S. importers of product from-- | | | | | |
| China | 8,844 | 13,365 | 19,127 | 14,496 | 18,041 |
| Other sources | 14,490 | 15,673 | 19,263 | 14,048 | 12,514 |
| Total | 23,334 | 29,038 | 38,390 | 28,544 | 30,555 |
| Domestic producers | 55,755 | 65,741 | 65,010 | 46,838 | 46,683 |
| Other sources | 3,283 | 1,061 | 988 | 988 | 219 |
| Total | 82,371 | 95,840 | 104,389 | 76,369 | 77,457 |
| | Unit value (*per pound*) | | | | |
| U.S. importers of product from-- | | | | | |
| China | $0.45 | $0.48 | $0.49 | $0.49 | $0.46 |
| Other sources | .48 | .53 | .53 | .53 | .51 |
| Average | .47 | .51 | .51 | .51 | .48 |
| Domestic producers | .46 | .52 | .52 | .54 | .52 |
| Other sources | .54 | .54 | .54 | .54 | .52 |
| Average | .46 | .51 | .52 | .53 | .50 |

Note.--Because of rounding, figures may not add to the totals shown. Unit values are calculated from the unrounded figures, using data of firms supplying both quantity and value information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table E-11
Honey: Summary data concerning the U.S. market and U.S. beekeepers' operations, 1989-93

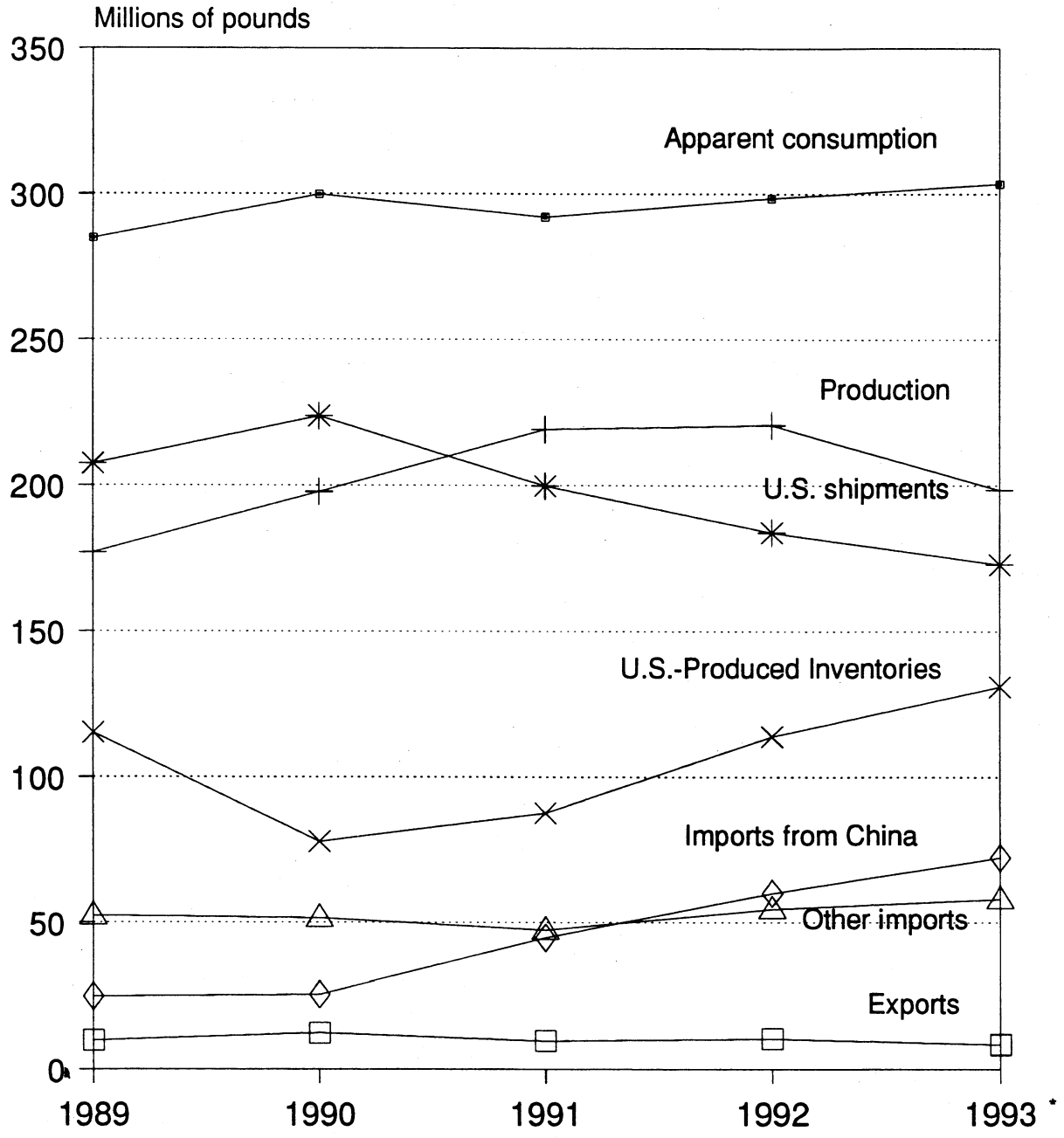
| Item | 1989 | 1990 | 1991 | 1992 | 1993 | Period changes (percent)-- 89-90 | 90-91 | 91-92 | 92-93 | 1989-93 |
|---|---|---|---|---|---|---|---|---|---|---|
| U.S. consumption-quantity: | | | | | | | | | | |
| Amount (million lbs).... | 284.8 | 299.8 | 292.0 | 298.5 | 303.5 | 5.3 | -2.6 | 2.2 | 1.7 | 6.6 |
| Producers' share..... | 72.9 | 74.3 | 68.4 | 61.6 | 57.9 | 1.4 | -5.9 | -6.8 | -3.7 | -15.0 |
| Importers' share: | | | | | | | | | | |
| China..... | 8.7 | 8.5 | 15.3 | 20.1 | 23.9 | -0.2 | 6.8 | 4.8 | 3.8 | 15.2 |
| Other..... | 18.4 | 17.2 | 16.2 | 18.3 | 19.1 | -1.2 | -1.0 | 2.1 | 0.8 | 0.7 |
| Total..... | 27.1 | 25.6 | 31.6 | 38.4 | 43.0 | -1.4 | 5.9 | 6.8 | 4.6 | 15.9 |
| U.S. consumption-value) | | | | | | | | | | |
| Amount (million $)..... | 134.3 | 153.6 | 155.5 | 157.5 | 1/ | 14.4 | 0.9 | 1.3 | 1/ | 17.3 2/ |
| Producers' share..... | 76.9 | 77.9 | 71.5 | 65.1 | 1/ | 1.0 | -6.4 | -6.4 | 1/ | -76.9 2/ |
| Importers' share: | | | | | | | | | | |
| China..... | 6.6 | 6.7 | 12.4 | 16.6 | 1/ | 0.1 | 5.7 | 4.2 | 1/ | -6.6 2/ |
| Other..... | 16.5 | 15.4 | 16.1 | 18.3 | 1/ | -1.1 | 0.7 | 2.2 | 1/ | -16.5 2/ |
| Total..... | 23.1 | 22.1 | 28.5 | 34.9 | 1/ | -1.0 | 6.4 | 6.4 | 1/ | -23.1 2/ |
| U.S. imports from-- | | | | | | | | | | |
| China: | | | | | | | | | | |
| Qty. (million lbs).... | 24.9 | 25.5 | 44.8 | 60.1 | 72.4 | 2.4 | 75.7 | 34.2 | 20.5 | 190.8 |
| Value (million $)..... | 8.9 | 10.3 | 19.3 | 26.1 | 28.8 | 15.7 | 87.4 | 35.2 | 10.3 | 223.6 |
| Unit value (¢/lb)..... | 35.8 | 40.6 | 43.0 | 43.4 | 40.2 | 13.4 | 5.9 | 0.9 | -7.4 | 12.3 |
| Other sources: | | | | | | | | | | |
| Qty. (million lbs).... | 52.4 | 51.6 | 47.4 | 54.6 | 58.1 | -1.5 | -8.1 | 15.2 | 6.4 | 10.9 |
| Value (milliion $).... | 22.1 | 23.7 | 25.1 | 28.8 | 29.7 | 7.2 | 5.9 | 14.7 | 3.1 | 34.4 |
| Unit value (¢/lb)..... | 42.2 | 46.0 | 52.9 | 52.8 | 21.3 | 9.0 | 15.0 | -0.2 | -59.7 | -49.5 |
| All sources: | | | | | | | | | | |
| Qty. (million lbs).... | 77.3 | 77.1 | 92.3 | 114.6 | 130.6 | -0.3 | 19.7 | 24.2 | 14.0 | 69.0 |
| Value (million $)..... | 31.0 | 34.0 | 44.4 | 54.9 | 58.5 | 9.7 | 30.6 | 23.6 | 6.6 | 88.7 |
| Unit value (¢/lb)..... | 40.2 | 44.2 | 48.1 | 47.9 | 45.1 | 10.0 | 8.8 | -0.4 | -5.8 | 12.2 |
| Ratio Chinese imports to U.S. production: | | | | | | | | | | |
| Quantity basis.... | 14.1 | 12.9 | 20.4 | 27.2 | 36.5 | -1.2 | 7.5 | 6.8 | 9.3 | 22.4 |
| Value basis..... | 9.9 | 9.6 | 15.8 | 21.2 | 1/ | -0.3 | 6.2 | 5.4 | 1/ | -9.9 2/ |
| U.S. beekeepers: | | | | | | | | | | |
| Colonies (1,000)..... | 3,443 | 3,210 | 3,181 | 3,030 | 1/ | -6.8 | -0.9 | -4.7 | | -12.0 |
| Production (mil. lbs)... | 177.0 | 197.8 | 219.2 | 220.6 | 198.4 | 11.8 | 10.8 | 0.6 | -10.1 | 12.1 |
| Yield (lbs/colony)..... | 51 | 62 | 69 | 73 | 1/ | 21.6 | 11.3 | 5.8 | 1/ | 43.1 |
| Inventories (mil. lbs).. | 115.2 | 77.8 | 87.6 | 113.9 | 131.0 | -32.5 | 12.6 | 30.0 | 15.0 | 13.7 |
| Inven./prod.(percent)... | 65.1 | 39.3 | 40.0 | 51.6 | 66.0 | -25.8 | .7 | 11.6 | 14.4 | .9 |
| Revenues: | | | | | | | | | | |
| Honey (million $)..... | 1/ | 24.1 | 28.1 | 28.2 | 1/ | 1/ | 16.5 | 0.5 | 1/ | 17.1 3/ |
| Total (million $)..... | 1/ | 35.1 | 38.1 | 39.9 | 1/ | 1/ | 8.7 | 4.6 | 1/ | 13.7 3/ |
| Expenses (million $).... | 1/ | 30.8 | 34.2 | 36.2 | 1/ | 1/ | 11.1 | 5.8 | 1/ | 17.5 3/ |
| Net income (million $).. | 1/ | 4.3 | 3.9 | 3.7 | 1/ | 1/ | -8.4 | -5.6 | 1/ | -13.6 3/ |
| Expenses/revenues (%)... | 1/ | 87.7 | 89.7 | 90.7 | 1/ | 1/ | 2.0 | 1.0 | 1/ | 3.0 3/ |
| Net income/revenue (%).. | 1/ | 12.3 | 10.3 | 9.3 | 1/ | 1/ | -2.0 | -1.0 | 1/ | -3.0 3/ |

1/ Not available.
2/ Change from 1989 to 1992.
3/ Change from 1990 to 1992.

Compiled from official statistics of the U.S. Department of Agriculture and the U.S. Department of Commerce and from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note: Period changes are derived from the unrouded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated using data of firms supplying both numerator and denominator information.

Figure E-1
Honey: Certain salient data, 1989-93
(based on quantity)




*Annualized based on prior year's experience, or USDA estimates.

Source: Tables 14, 28 and E-11.

# APPENDIX F

# COMMENTS RECEIVED FROM U.S. PRODUCERS AND PACKERS ON THE IMPACT OF IMPORTS OF HONEY FROM CHINA ON THEIR GROWTH, INVESTMENT, ABILITY TO RAISE CAPITAL, AND THE SCALE OF CAPITAL INVESTMENTS

The Commission requested U.S. producers and packers to describe and explain the actual and negative effects, if any, of imports of honey from China on their growth, investment, ability to raise capital, and the scale of capital investments.

## ACTUAL NEGATIVE EFFECTS

### Beekeepers

Of the 191 beekeepers that responded, 77 reported no actual negative effect; however, 54 of the 77 anticipated such effects. The number of producers that reported a negative impact for specific categories is shown below (some producers responded in more than one category):

| | *Number* | *Percent* |
|---|---|---|
| Cancellation or rejection of expansion projects | 43 | 22.5 |
| Denial or rejection of investment proposal | 8 | 4.1 |
| Reduction in the size of capital investments | 47 | 24.6 |
| Rejection of bank loans | 7 | 3.7 |
| Lowering of credit rating | 14 | 7.3 |
| Selling of assets to pay debt obligations | 21 | 11.0 |
| Increase in debt obligations | 26 | 18.8 |
| Obtaining other or additional employment | 21 | 11.0 |
| Difficulty in repaying agricultural program loans | 23 | 12.0 |
| Other (almost all were low profits due to low price) | 30 | 15.7 |

Some of the specific comments are shown below:

* * * * * * *

### Packers

#### Commercial Packers

Thirteen of the 21 responding packers indicated no actual negative impact. The number of packers that reported a negative impact for specific categories is shown below (some packers responded in more than one category):

| | *Number* | *Percent* |
|---|---|---|
| Cancellation or rejection of expansion projects | 1 | 4.8 |
| Denial or rejection of investment proposal | 0 | 0 |
| Reduction in the size of capital investments | 2 | 9.5 |
| Rejection of bank loans | 1 | 4.8 |
| Lowering of credit rating | 2 | 9.5 |
| Selling of assets to pay debt obligations | 1 | 4.8 |
| Increase in debt obligations | 3 | 14.3 |
| Obtaining other or additional employment | 0 | 0 |
| Difficulty in repaying agricultural program loans | 1 | 4.8 |
| Other (loss of customer) | 2 | 9.5 |

The responses of some of the packers are shown below:

* * * * * * *

**Cooperative**

* * * * * * *

## ANTICIPATED NEGATIVE EFFECTS

### Beekeepers

* * * * * * *

### Packers

**Commercial Packers**

Nine of the 21 responding packers indicated no anticipated negative impact. However, 12 packers did anticipate negative effects. The responses of some of the packers are shown below:

* * * * * * *

# APPENDIX G

# ADDITIONAL TABLES AND FIGURES OF OFFICIAL IMPORT STATISTICS

Table G-1
Honey: U.S. imports, by sources and types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Quantity (*1,000 pounds*) | | | | | |
| Packaged for retail: | | | | | | |
| China | 132 | 492 | 100 | 140 | 119 | 312 |
| Argentina | 679 | 808 | 63 | 158 | 86 | 18 |
| Australia | 26 | 30 | 30 | 26 | 22 | 35 |
| Canada | 1,148 | 1,729 | 1,759 | 1,150 | 810 | 535 |
| Hungary | 0 | 134 | 0 | 2 | 0 | 9 |
| Mexico | 177 | 383 | 410 | 170 | 96 | 161 |
| All other | 837 | 572 | 503 | 482 | 366 | 385 |
| Total | 3,000 | 4,148 | 2,866 | 2,129 | 1,500 | 1,454 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 12,148 | 13,050 | 26,797 | 36,843 | 26,632 | 25,714 |
| Argentina | 7,565 | 16,763 | 17,948 | 27,762 | 21,489 | 25,176 |
| Australia | 0 | 1,520 | 0 | 0 | 0 | 966 |
| Canada | 8,200 | 3,785 | 10,841 | 13,668 | 8,617 | 6,686 |
| Hungary | 1,154 | 1,129 | 1,573 | 0 | 0 | 26 |
| Mexico | 1,986 | 5,994 | 1,803 | 508 | 383 | 452 |
| All other | 1,978 | 1,218 | 824 | 221 | 220 | 48 |
| Total | 33,032 | 43,460 | 59,785 | 79,001 | 57,341 | 59,069 |
| Light amber and darker, bulk: | | | | | | |
| China | 12,609 | 11,910 | 17,932 | 23,095 | 17,329 | 27,063 |
| Argentina | 2,220 | 1,867 | 2,423 | 2,566 | 2,566 | 2,911 |
| Australia | 180 | 933 | 99 | 0 | 0 | 8 |
| Canada | 18,037 | 2,101 | 1,565 | 1,990 | 1,363 | 1,421 |
| Hungary | 1,573 | 1,223 | 1,034 | 0 | 0 | 0 |
| Mexico | 4,382 | 9,806 | 5,632 | 4,059 | 2,716 | 2,688 |
| All other | 2,240 | 1,592 | 919 | 1,789 | 770 | 587 |
| Total | 41,240 | 29,431 | 29,603 | 33,499 | 24,746 | 34,677 |
| Total honey: | | | | | | |
| China | 24,890 | 25,452 | 44,829 | 60,078 | 44,081 | 53,089 |
| Argentina | 10,464 | 19,438 | 20,434 | 30,486 | 24,142 | 28,105 |
| Australia | 205 | 2,483 | 129 | 26 | 22 | 1,008 |
| Canada | 27,385 | 7,615 | 14,164 | 16,808 | 10,791 | 8,642 |
| Hungary | 2,727 | 2,486 | 2,607 | 2 | 0 | 36 |
| Mexico | 6,545 | 16,183 | 7,845 | 4,737 | 3,195 | 3,300 |
| All other | 5,055 | 3,382 | 2,246 | 2,492 | 1,356 | 1,020 |
| Total | 77,271 | 77,039 | 92,254 | 114,629 | 83,587 | 95,199 |

Continued on next page.

Table G-1--Continued
Honey: U.S. imports, by sources and types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Value (*1,000 dollars; landed-duty paid*) | | | | | |
| Packaged for retail: | | | | | | |
| China | 139 | 275 | 106 | 162 | 135 | 213 |
| Argentina | 350 | 370 | 48 | 112 | 69 | 16 |
| Australia | 32 | 37 | 45 | 39 | 32 | 44 |
| Canada | 1,070 | 1,842 | 2,023 | 1,108 | 802 | 607 |
| Hungary | 0 | 63 | 0 | 7 | 0 | 13 |
| Mexico | 67 | 144 | 157 | 122 | 60 | 112 |
| All other | 1,820 | 1,794 | 1,236 | 50 | 475 | 526 |
| Total | 2,651 | 3,753 | 3,434 | 2,515 | 1,881 | 1,726 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 4,371 | 5,298 | 11,486 | 15,933 | 11,658 | 10,147 |
| Argentina | 2,867 | 7,000 | 8,605 | 13,163 | 10,217 | 11,399 |
| Australia | 0 | 625 | 0 | 0 | 0 | 401 |
| Canada | 3,736 | 1,905 | 5,923 | 7,986 | 5,191 | 4,340 |
| Hungary | 414 | 425 | 630 | 0 | 0 | 24 |
| Mexico | 890 | 2,460 | 712 | 206 | 154 | 206 |
| All other | 653 | 546 | 470 | 125 | 120 | 36 |
| Total | 12,930 | 18,261 | 27,827 | 37,413 | 27,340 | 26,553 |
| Light amber and darker, bulk: | | | | | | |
| China | 4,408 | 4,754 | 7,703 | 10,001 | 7,568 | 10,984 |
| Argentina | 683 | 798 | 1,102 | 1,547 | 1,226 | 1,324 |
| Australia | 83 | 391 | 43 | 0 | 0 | 5 |
| Canada | 7,157 | 958 | 952 | 1,063 | 721 | 755 |
| Hungary | 528 | 477 | 430 | 0 | 0 | 0 |
| Mexico | 1,701 | 3,839 | 2,336 | 1,694 | 1,140 | 1,244 |
| All other | 897 | 814 | 557 | 661 | 462 | 358 |
| Total | 15,456 | 12,031 | 13,123 | 14,966 | 11,117 | 14,670 |
| Total honey: | | | | | | |
| China | 8,918 | 10,327 | 19,295 | 26,095 | 19,362 | 21,344 |
| Argentina | 3,900 | 8,169 | 9,755 | 14,823 | 11,512 | 12,738 |
| Australia | 115 | 1,053 | 87 | 39 | 32 | 450 |
| Canada | 11,136 | 3,933 | 8,717 | 11,072 | 7,020 | 5,897 |
| Hungary | 941 | 965 | 1,061 | 7 | 0 | 38 |
| Mexico | 2,658 | 6,443 | 3,205 | 2,022 | 1,354 | 1,562 |
| All other | 3,370 | 3,154 | 2,264 | 836 | 1,058 | 920 |
| Total | 31,038 | 34,045 | 44,383 | 54,894 | 40,338 | 42,949 |

Continued on next page.

Table G-1--Continued
Honey: U.S. imports, by sources and types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Unit value (per pound) | | | | | |
| Packaged for retail: | | | | | | |
| China | $1.054 | $0.558 | $1.057 | $1.152 | $1.136 | $0.682 |
| Argentina | .516 | .458 | .764 | .710 | .802 | .877 |
| Australia | 1.259 | 1.246 | 1.464 | 1.488 | 1.448 | 1.252 |
| Canada | .932 | 1.065 | 1.150 | .964 | .991 | 1.135 |
| Hungary | - | .472 | - | 2.895 | - | 1.445 |
| Mexico | .377 | .376 | .382 | .718 | .629 | .697 |
| All other | 2.174 | 3.135 | 2.456 | .104 | 1.297 | 1.367 |
| Average | .884 | .905 | 1.198 | 1.181 | 1.254 | 1.187 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | .360 | .406 | .429 | .432 | .438 | .395 |
| Argentina | .379 | .418 | .479 | .474 | .475 | .453 |
| Australia | - | .411 | - | - | - | .415 |
| Canada | .456 | .503 | .546 | .584 | .602 | .649 |
| Hungary | .359 | .377 | .401 | - | - | .923 |
| Mexico | .448 | .410 | .395 | .405 | .401 | .457 |
| All other | .330 | .449 | .571 | .566 | .548 | .759 |
| Average | .391 | .420 | .465 | .474 | .477 | .450 |
| Light amber and darker, bulk: | | | | | | |
| China | .350 | .399 | .430 | .433 | .437 | .406 |
| Argentina | .308 | .428 | .455 | .603 | .478 | .455 |
| Australia | .460 | .419 | .433 | - | - | .669 |
| Canada | .397 | .456 | .608 | .534 | .529 | .531 |
| Hungary | .335 | .390 | .416 | - | - | - |
| Mexico | .388 | .392 | .415 | .417 | .420 | .463 |
| All other | .400 | .511 | .607 | .370 | .600 | .609 |
| Average | .375 | .409 | .443 | .447 | .449 | .423 |
| Total honey: | | | | | | |
| China | .358 | .406 | .430 | .434 | .439 | .402 |
| Argentina | .373 | .420 | .477 | .486 | .477 | .453 |
| Australia | .560 | .424 | .676 | 1.488 | 1.448 | .446 |
| Canada | .407 | .517 | .615 | .659 | .651 | .682 |
| Hungary | .345 | .388 | .407 | 2.895 | - | 1.059 |
| Mexico | .406 | .398 | .409 | .427 | .424 | .473 |
| All other | .667 | .933 | 1.008 | .336 | .780 | .902 |
| Average | .402 | .442 | .481 | .479 | .483 | .451 |

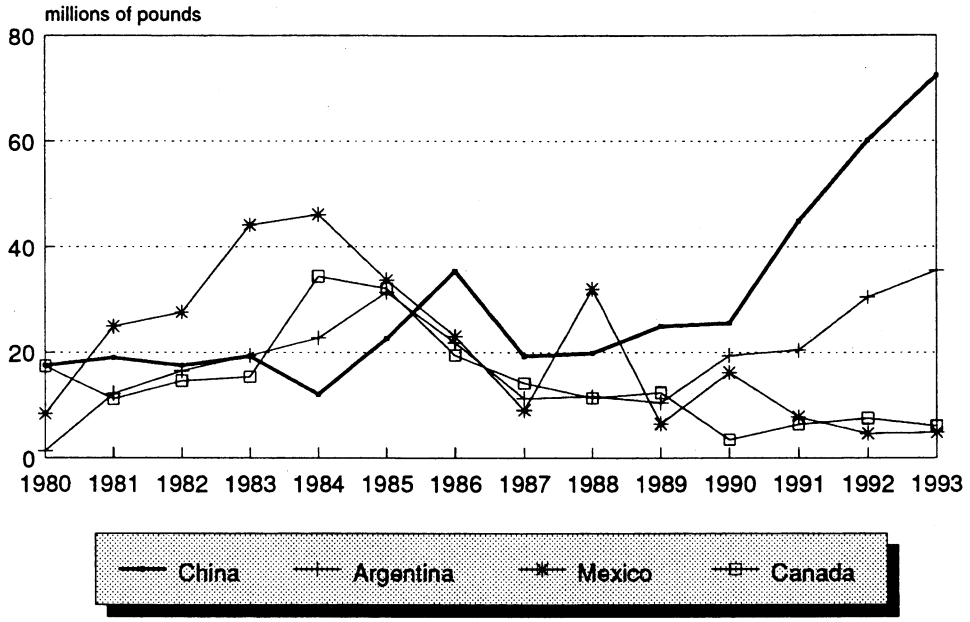
Continued on next page.

Table G-1--Continued
Honey: U.S. imports, by sources and types, 1989-92, Jan.-Sept. 1992, and Jan.-Sept. 1993

| Item | 1989 | 1990 | 1991 | 1992 | Jan.-Sept.-- 1992 | 1993 |
|---|---|---|---|---|---|---|
| | Share of total quantity (*percent*) | | | | | |
| Packaged for retail: | | | | | | |
| China | 0.5 | 1.9 | 0.2 | 0.2 | 0.2 | 0.6 |
| Argentina | 6.5 | 4.2 | 0.3 | 0.5 | 0.4 | 0.1 |
| Australia | 12.5 | 1.2 | 23.6 | 100.0 | 100.0 | 3.5 |
| Canada | 4.2 | 22.7 | 12.4 | 6.8 | 7.5 | 6.2 |
| Hungary | - | 5.4 | - | 100.0 | - | 26.1 |
| Mexico | 2.7 | 2.4 | 5.2 | 3.6 | 3.0 | 4.9 |
| All other | 16.6 | 16.9 | 22.4 | 19.3 | 27.0 | 37.7 |
| Subtotal | 3.9 | 5.4 | 3.1 | 1.9 | 1.9 | 1.5 |
| Bulk: | | | | | | |
| Extra light amber and lighter, bulk: | | | | | | |
| China | 48.8 | 51.3 | 59.8 | 61.3 | 60.4 | 48.4 |
| Argentina | 2.3 | 86.2 | 87.8 | 91.1 | 89.0 | 89.6 |
| Australia | - | 61.2 | - | - | - | 95.8 |
| Canada | 29.9 | 49.7 | 76.5 | 81.3 | 79.9 | 77.4 |
| Hungary | 42.3 | 45.4 | 60.3 | - | - | 73.9 |
| Mexico | 30.3 | 37.0 | 23.0 | 10.7 | 12.0 | 13.7 |
| All other | 39.1 | 36.0 | 36.7 | 8.9 | 16.2 | 4.7 |
| Subtotal | 42.7 | 56.4 | 64.8 | 68.9 | 68.6 | 62.0 |
| Light amber and darker, bulk: | | | | | | |
| China | 50.7 | 46.8 | 40.0 | 38.4 | 39.3 | 51.0 |
| Argentina | 21.2 | 9.6 | 11.9 | 8.4 | 10.6 | 10.4 |
| Australia | 87.5 | 37.6 | 76.4 | - | - | 0.8 |
| Canada | 65.9 | 27.6 | 11.0 | 11.8 | 12.6 | 16.4 |
| Hungary | 57.7 | 49.2 | 39.7 | - | - | - |
| Mexico | 66.9 | 60.6 | 71.8 | 85.7 | 85.0 | 81.4 |
| All other | 44.3 | 47.1 | 40.9 | 71.8 | 56.8 | 57.6 |
| Subtotal | 53.4 | 38.2 | 32.1 | 29.2 | 29.6 | 36.4 |
| Total honey: | | | | | | |
| China | 32.2 | 33.0 | 48.6 | 52.4 | 52.7 | 55.8 |
| Argentina | 13.5 | 25.2 | 22.1 | 26.6 | 28.9 | 29.5 |
| Australia | 0.3 | 3.2 | 0.1 | - | - | 1.1 |
| Canada | 35.4 | 9.9 | 15.4 | 14.7 | 12.9 | 9.1 |
| Hungary | 3.5 | 3.2 | 2.8 | - | - | - |
| Mexico | 8.5 | 21.0 | 8.5 | 4.1 | 3.8 | 3.5 |
| All other | 6.5 | 4.4 | 2.4 | 2.2 | 1.6 | 1.1 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

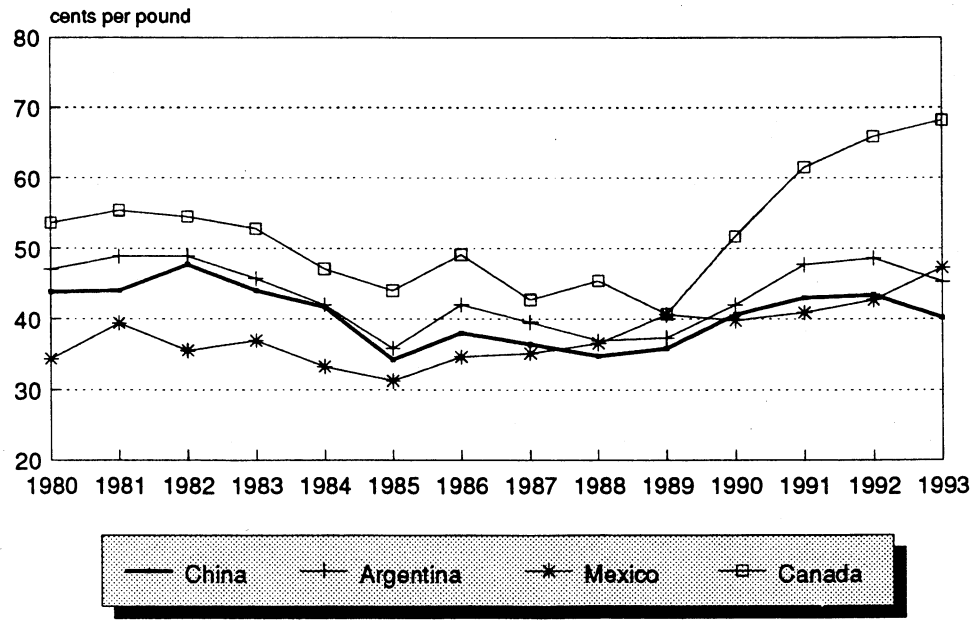
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure G-1
Honey: Imports by source, quantity
1980-93




Source: Table G-1.

Figure G-2
Honey: Imports by source, unit values
1980-93




Source: Table G-1.

Table G-2
Honey: Imports of honey from China, by types and customs districts, 1990-92, and Jan.-Sept. 92-93

**0409.00.0020--Natural honey packaged for retail**

| Region and district | Quantity-- | | | Jan.-Sept.-- | | Value-- | | | Jan.-Sept.-- | | Unit value-- | | | Jan.-Sept.-- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 |
| | (1,000 pounds) | | | | | (1,000 dollars) | | | | | (cents per pound) | | | | |
| 1 Boston..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 1 New York..... | 40 | 39 | 61 | 53 | 83 | 47 | 58 | 68 | 59 | 87 | 1.158 | 1.491 | 1.128 | 1.116 | 1.050 |
| 1 Philadelphia... | 363 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 0 | 0 | 0.377 | - | - | - | - |
| | 403 | 39 | 61 | 53 | 83 | 184 | 58 | 68 | 59 | 87 | 0.455 | 1.491 | 1.128 | 1.116 | 1.050 |
| 2 Baltimore..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 3 Charleston..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 3 Savannah..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 3 Tampa..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 4 Chicago..... | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | - | - | - | - | 1.362 |
| 4 Cleveland..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 4 Detroit..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | - | - | - | - | 1.362 |
| 5 St. Louis..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 6 Houston..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 6 New Orleans.... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 8 Los Angeles.... | 52 | 53 | 33 | 26 | 22 | 57 | 38 | 39 | 30 | 27 | 1.107 | 0.717 | 1.170 | 1.151 | 1.231 |
| 8 Portland..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 8 San Francisco.. | 37 | 8 | 46 | 40 | 20 | 34 | 9 | 54 | 46 | 27 | 0.917 | 1.195 | 1.172 | 1.153 | 1.309 |
| 8 Seattle..... | 0 | 0 | 0 | 0 | 185 | 0 | 0 | 0 | 0 | 70 | - | - | - | - | 0.380 |
| | 89 | 61 | 79 | 66 | 227 | 91 | 47 | 93 | 76 | 124 | 1.027 | 0.779 | 1.171 | 1.152 | 0.544 |
| Total..... | 492 | 100 | 140 | 119 | 312 | 275 | 106 | 162 | 135 | 213 | 0.558 | 1.057 | 1.152 | 1.136 | 0.682 |

Continued on next page.

Table G-2--Continued
Honey: Imports of honey from China, by types and customs districts, 1990-92, and Jan.-Sept. 92-93

**0409.00.0040--Natural honey, extra light amber and lighter**

| Region and district | Quantity-- | | | Jan.-Sept.-- | | Value-- | | | Jan.-Sept.-- | | Unit value-- | | | Jan.-Sept.-- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 |
| | (1,000 pounds) | | | | | (1,000 dollars) | | | | | (cents per pound) | | | | |
| 1 Boston..... | 176 | 186 | 74 | 74 | 0 | 75 | 77 | 33 | 33 | 0 | 0.428 | 0.414 | 0.452 | 0.452 | - |
| 1 New York..... | 0 | 0 | 35 | 35 | 0 | 0 | 0 | 15 | 15 | 0 | - | - | 0.430 | 0.430 | - |
| 1 Philadelphia... | 3,335 | 3,901 | 4,823 | 3,455 | 4,235 | 1,331 | 1,734 | 2,094 | 1,507 | 1,676 | 0.399 | 0.445 | 0.434 | 0.436 | 0.396 |
| | 3,511 | 4,086 | 4,931 | 3,563 | 4,235 | 1,406 | 1,811 | 2,142 | 1,555 | 1,676 | 0.401 | 0.443 | 0.434 | 0.436 | 0.396 |
| 2 Baltimore..... | 747 | 1,209 | 717 | 644 | 581 | 333 | 549 | 325 | 294 | 243 | 0.446 | 0.454 | 0.453 | 0.457 | 0.417 |
| 3 Charleston..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - |
| 3 Savannah..... | 387 | 894 | 1,105 | 928 | 109 | 157 | 389 | 497 | 420 | 44 | 0.405 | 0.435 | 0.449 | 0.452 | 0.401 |
| 3 Tampa..... | 70 | 35 | 0 | 0 | 43 | 35 | 18 | 0 | 0 | 16 | 0.494 | 0.518 | - | - | 0.360 |
| | 458 | 929 | 1,105 | 928 | 153 | 192 | 407 | 497 | 420 | 59 | 0.418 | 0.438 | 0.449 | 0.452 | 0.389 |
| 4 Chicago..... | 246 | 2,469 | 3,009 | 2,452 | 3,104 | 122 | 1,106 | 1,349 | 1,127 | 1,258 | 0.495 | 0.448 | 0.448 | 0.460 | 0.405 |
| 4 Cleveland..... | 211 | 0 | 0 | 0 | 0 | 77 | 0 | 0 | 0 | 0 | 0.364 | - | - | - | - |
| 4 Detroit..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | - | - | - | - |
| | 457 | 2,469 | 3,009 | 2,452 | 3,104 | 199 | 1,106 | 1,349 | 1,127 | 1,258 | 0.435 | 0.448 | 0.448 | 0.460 | 0.405 |
| 5 St. Louis..... | 0 | 146 | 0 | 0 | 0 | 0 | 62 | 0 | 0 | 0 | | 0.426 | - | - | - |
| 6 Houston..... | 1,628 | 3,257 | 8,301 | 6,209 | 5,410 | 677 | 1,376 | 3,536 | 2,658 | 2,075 | 0.416 | 0.422 | 0.426 | 0.428 | 0.384 |
| 6 New Orleans.... | 221 | 2,479 | 1,138 | 1,068 | 258 | 94 | 1,110 | 508 | 477 | 101 | 0.424 | 0.448 | 0.446 | 0.447 | 0.393 |
| | 1,849 | 5,737 | 9,439 | 7,277 | 5,668 | 770 | 2,486 | 4,043 | 3,135 | 2,176 | 0.417 | 0.433 | 0.428 | 0.431 | 0.384 |
| 8 Los Angeles.... | 1,628 | 5,563 | 6,853 | 4,186 | 5,260 | 651 | 2,297 | 2,917 | 1,810 | 2,101 | 0.400 | 0.413 | 0.426 | 0.432 | 0.399 |
| 8 Portland..... | 141 | 632 | 2,253 | 1,234 | 919 | 59 | 271 | 971 | 530 | 360 | 0.417 | 0.429 | 0.431 | 0.429 | 0.392 |
| 8 San Francisco.. | 1,368 | 1,782 | 2,365 | 1,929 | 2,450 | 555 | 745 | 1,022 | 838 | 935 | 0.405 | 0.418 | 0.432 | 0.434 | 0.382 |
| 8 Seattle..... | 2,891 | 4,243 | 6,172 | 4,418 | 3,345 | 1,134 | 1,752 | 2,666 | 1,949 | 1,337 | 0.392 | 0.413 | 0.432 | 0.441 | 0.400 |
| | 6,027 | 12,221 | 17,643 | 11,768 | 11,974 | 2,398 | 5,065 | 7,576 | 5,127 | 4,734 | 0.398 | 0.414 | 0.429 | 0.436 | 0.395 |
| Total..... | 13,050 | 26,797 | 36,843 | 26,632 | 25,714 | 5,298 | 11,486 | 15,933 | 11,658 | 10,147 | 0.406 | 0.429 | 0.432 | 0.438 | 0.395 |

Continued on next page.

Table G-2--Continued
Honey: Imports of honey from China, by types and customs districts, 1990-92, and Jan.-Sept. 92-93

**0409.00.0060--Natural honey, light amber and darker**

| Region and district | Quantity-- | | | Jan.-Sept.-- | | Value-- | | | Jan.-Sept.-- | | Unit value-- | | | Jan.-Sept.-- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 |
| | (1,000 pounds) | | | | | (1,000 dollars) | | | | | (cents per pound) | | | | |
| 1 Boston..... | 0 | 251 | 584 | 401 | 440 | 0 | 114 | 250 | 175 | 176 | | 0.452 | 0.428 | 0.435 | 0.401 |
| 1 New York..... | 17 | 0 | 72 | 72 | 10 | 14 | 0 | 38 | 38 | 21 | 0.854 | - | 0.536 | 0.536 | 2.011 |
| 1 Philadelphia... | 6,184 | 9,204 | 10,724 | 8,033 | 12,802 | 2,473 | 3,955 | 4,587 | 3,473 | 4,899 | 0.400 | 0.430 | 0.428 | 0.432 | 0.383 |
| | 6,201 | 9,455 | 11,380 | 8,506 | 13,251 | 2,487 | 4,069 | 4,875 | 3,686 | 5,096 | 0.401 | 0.430 | 0.428 | 0.433 | 0.385 |
| 2 Baltimore..... | 358 | 1,237 | 1,304 | 846 | 1,244 | 162 | 578 | 619 | 405 | 528 | 0.451 | 0.467 | 0.475 | 0.479 | 0.424 |
| 3 Charleston..... | 0 | 0 | 422 | 422 | 215 | 0 | 0 | 234 | 234 | 94 | - | - | 0.555 | 0.555 | 0.439 |
| 3 Savannah..... | 0 | 37 | 246 | 246 | 222 | 0 | 19 | 118 | 118 | 77 | - | 0.523 | 0.479 | 0.479 | 0.348 |
| 3 Tampa..... | 0 | 0 | 0 | 0 | 74 | 0 | 0 | 0 | 0 | 26 | - | - | - | - | 0.357 |
| | 0 | 37 | 668 | 668 | 511 | 0 | 19 | 352 | 352 | 198 | - | 0.523 | 0.527 | 0.527 | 0.388 |
| 4 Chicago..... | 467 | 652 | 144 | 0 | 1,796 | 168 | 290 | 57 | 0 | 710 | 0.359 | 0.445 | 0.396 | - | 0.396 |
| 4 Cleveland..... | 70 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0.396 | - | - | - | - |
| 4 Detroit..... | 0 | 0 | 0 | 0 | 675 | 0 | 0 | 0 | 0 | 753 | | - | - | - | 1.116 |
| | 537 | 652 | 144 | 0 | 2,471 | 196 | 290 | 57 | 0 | 1,463 | 0.364 | 0.445 | 0.396 | - | 0.592 |
| 5 St. Louis..... | 0 | 0 | 0 | 0 | 84 | 0 | 0 | 0 | 0 | 34 | - | - | - | - | 0.403 |
| 6 Houston..... | 286 | 70 | 1,079 | 287 | 3,498 | 123 | 30 | 455 | 123 | 1,424 | 0.429 | 0.432 | 0.422 | 0.430 | 0.407 |
| 6 New Orleans.... | 109 | 109 | 107 | 107 | 72 | 43 | 46 | 48 | 48 | 27 | 0.397 | 0.422 | 0.449 | 0.449 | 0.373 |
| | 396 | 180 | 1,187 | 394 | 3,570 | 166 | 76 | 503 | 172 | 1,451 | 0.420 | 0.426 | 0.424 | 0.435 | 0.406 |
| 8 Los Angeles.... | 1,245 | 2,649 | 3,440 | 2,939 | 4,752 | 521 | 1,098 | 1,466 | 1,241 | 1,740 | 0.419 | 0.415 | 0.426 | 0.422 | 0.366 |
| 8 Portland..... | 1,471 | 1,208 | 575 | 502 | 0 | 553 | 481 | 237 | 210 | 0 | 0.376 | 0.398 | 0.412 | 0.417 | - |
| 8 San Francisco.. | 951 | 1,136 | 987 | 915 | 183 | 374 | 492 | 429 | 399 | 86 | 0.393 | 0.433 | 0.435 | 0.436 | 0.469 |
| 8 Seattle..... | 751 | 1,378 | 3,410 | 2,558 | 996 | 295 | 600 | 1,462 | 1,104 | 388 | 0.393 | 0.435 | 0.429 | 0.432 | 0.390 |
| | 4,418 | 6,372 | 8,412 | 6,915 | 5,932 | 1,743 | 2,671 | 3,594 | 2,954 | 2,215 | 0.394 | 0.419 | 0.427 | 0.427 | 0.373 |
| Total..... | 11,910 | 17,932 | 23,095 | 17,329 | 27,063 | 4,754 | 7,703 | 10,001 | 7,568 | 10,984 | 0.399 | 0.430 | 0.433 | 0.437 | 0.406 |

Continued on next page.

Table G-2--Continued
Honey: Imports of honey from China, by types and customs districts, 1990-92, and Jan.-Sept. 92-93

**Natural honey, total**

| Region and district | Quantity-- | | | Jan.-Sept.-- | | Value-- | | | Jan.-Sept.-- | | Unit value-- | | | Jan.-Sept.-- | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 | 1990 | 1991 | 1992 | 1992 | 1993 |
| | (1,000 pounds) | | | | | (1,000 dollars) | | | | | (cents per pound) | | | | |
| 1 Boston..... | 176 | 437 | 657 | 475 | 440 | 75 | 190 | 283 | 208 | 176 | 0.428 | 0.436 | 0.431 | 0.438 | 0.401 |
| 1 New York..... | 57 | 39 | 167 | 159 | 93 | 61 | 58 | 122 | 112 | 108 | 1.068 | 1.491 | 0.729 | 0.705 | 1.156 |
| 1 Philadelphia... | 9,882 | 13,104 | 15,547 | 11,488 | 17,037 | 3,941 | 5,689 | 6,687 | 4,979 | 6,575 | 0.399 | 0.434 | 0.430 | 0.433 | 0.386 |
| | 10,115 | 13,580 | 16,371 | 12,121 | 17,569 | 4,077 | 5,938 | 7,085 | 5,299 | 6,859 | 0.403 | 0.437 | 0.433 | 0.437 | 0.390 |
| 2 Baltimore..... | 1,106 | 2,446 | 2,020 | 1,490 | 1,825 | 495 | 1,127 | 944 | 699 | 770 | 0.448 | 0.461 | 0.467 | 0.469 | 0.422 |
| 3 Charleston..... | 0 | 0 | 422 | 422 | 215 | 0 | 0 | 234 | 234 | 94 | | | 0.555 | 0.555 | 0.439 |
| 3 Savannah..... | 387 | 930 | 1,352 | 1,174 | 331 | 157 | 408 | 615 | 538 | 121 | 0.405 | 0.438 | 0.455 | 0.458 | 0.366 |
| 3 Tampa..... | 70 | 35 | 0 | 0 | 118 | 35 | 18 | 0 | 0 | 42 | 0.494 | 0.518 | | | 0.358 |
| | 458 | 965 | 1,773 | 1,596 | 663 | 192 | 426 | 849 | 772 | 257 | 0.418 | 0.441 | 0.479 | 0.484 | 0.388 |
| 4 Chicago..... | 713 | 3,121 | 3,153 | 2,452 | 4,901 | 290 | 1,396 | 1,407 | 1,127 | 1,970 | 0.406 | 0.447 | 0.446 | 0.460 | 0.402 |
| 4 Cleveland..... | 281 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 0 | 0 | 0.372 | | | | |
| 4 Detroit..... | 0 | 0 | 0 | 0 | 675 | 0 | 0 | 0 | 0 | 753 | | | | | 1.116 |
| | 995 | 3,121 | 3,153 | 2,452 | 5,575 | 394 | 1,396 | 1,407 | 1,127 | 2,723 | 0.396 | 0.447 | 0.446 | 0.460 | 0.488 |
| 5 St. Louis..... | 0 | 146 | 0 | 0 | 84 | 0 | 62 | 0 | 0 | 34 | - | 0.426 | - | - | 0.403 |
| 6 Houston..... | 1,914 | 3,327 | 9,380 | 6,496 | 8,908 | 799 | 1,406 | 3,991 | 2,781 | 3,499 | 0.418 | 0.423 | 0.425 | 0.428 | 0.393 |
| 6 New Orleans.... | 330 | 2,589 | 1,245 | 1,175 | 331 | 137 | 1,156 | 556 | 526 | 128 | 0.415 | 0.447 | 0.446 | 0.447 | 0.388 |
| | 2,245 | 5,916 | 10,625 | 7,672 | 9,238 | 937 | 2,562 | 4,547 | 3,307 | 3,627 | 0.417 | 0.433 | 0.428 | 0.431 | 0.393 |
| 8 Los Angeles.... | 2,924 | 8,265 | 10,327 | 7,152 | 10,034 | 1,230 | 3,433 | 4,422 | 3,082 | 3,868 | 0.420 | 0.415 | 0.428 | 0.431 | 0.386 |
| 8 Portland..... | 1,612 | 1,841 | 2,828 | 1,736 | 919 | 612 | 752 | 1,209 | 739 | 360 | 0.379 | 0.408 | 0.427 | 0.426 | 0.392 |
| 8 San Francisco.. | 2,356 | 2,927 | 3,398 | 2,885 | 2,654 | 962 | 1,247 | 1,505 | 1,283 | 1,048 | 0.408 | 0.426 | 0.443 | 0.445 | 0.395 |
| 8 Seattle..... | 3,642 | 5,621 | 9,581 | 6,977 | 4,526 | 1,429 | 2,352 | 4,128 | 3,053 | 1,796 | 0.392 | 0.418 | 0.431 | 0.438 | 0.397 |
| | 10,534 | 18,654 | 26,135 | 18,749 | 18,133 | 4,233 | 7,784 | 11,264 | 8,157 | 7,073 | 0.402 | 0.417 | 0.431 | 0.435 | 0.390 |
| Total..... | 25,452 | 44,829 | 60,078 | 44,081 | 53,089 | 10,327 | 19,295 | 26,095 | 19,362 | 21,344 | 0.406 | 0.430 | 0.434 | 0.439 | 0.402 |

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table G-3
Honey: Monthly U.S. imports of honey from China, by types, April 1992 to September 1993

| Year and month | Extra light amber and lighter | Light amber and darker | Total bulk natural honey |
|---|---|---|---|
| | Quantity (*pounds*) | | |
| 1992: | | | |
| April | 3,366,144 | 1,716,200 | 5,082,344 |
| May | 1,542,173 | 2,179,495 | 3,721,668 |
| June | 2,653,689 | 1,471,925 | 4,125,615 |
| July | 1,549,253 | 1,454,258 | 3,003,510 |
| August | 2,692,001 | 1,076,010 | 3,768,012 |
| September | 2,658,379 | 1,678,611 | 4,336,989 |
| October | 2,453,238 | 1,459,549 | 3,912,787 |
| November | 4,081,419 | 2,449,314 | 6,530,733 |
| December | 3,676,363 | 1,856,645 | 5,533,008 |
| Total | 24,672,659 | 15,342,007 | 40,014,666 |
| 1993: | | | |
| January | 3,258,651 | 1,733,663 | 4,992,314 |
| February | 2,126,169 | 2,400,085 | 4,526,254 |
| March | 3,368,296 | 2,751,497 | 6,119,793 |
| April | 1,923,825 | 3,399,780 | 5,323,605 |
| May | 1,521,878 | 2,581,653 | 4,103,531 |
| June | 3,372,974 | 3,773,190 | 7,146,164 |
| July | 3,086,316 | 3,485,046 | 6,571,362 |
| August | 4,570,788 | 3,897,178 | 8,467,966 |
| September | 2,658,379 | 1,678,611 | 4,336,989 |
| Total | 25,887,274 | 25,700,703 | 51,587,978 |
| | Value (*landed-duty-paid dollars*) | | |
| 1992: | | | |
| April | 1,484,302 | 735,755 | 2,220,057 |
| May | 679,426 | 958,852 | 1,638,278 |
| June | 1,170,773 | 672,922 | 1,843,695 |
| July | 683,012 | 652,534 | 1,335,546 |
| August | 1,162,087 | 485,757 | 1,647,844 |
| September | 1,150,110 | 692,391 | 1,842,501 |
| October | 1,041,232 | 605,414 | 1,646,646 |
| November | 1,710,330 | 1,037,996 | 2,748,326 |
| December | 1,522,968 | 789,273 | 2,312,241 |
| Total | 10,604,240 | 6,630,894 | 17,235,134 |
| 1993: | | | |
| January | 1,366,994 | 720,398 | 2,087,392 |
| February | 866,979 | 948,259 | 1,815,238 |
| March | 1,342,584 | 1,123,248 | 2,465,832 |
| April | 779,302 | 1,901,323 | 2,680,625 |
| May | 608,173 | 999,032 | 1,607,205 |
| June | 1,319,820 | 1,433,475 | 2,753,295 |
| July | 1,199,215 | 1,305,059 | 2,504,274 |
| August | 1,704,586 | 1,446,304 | 3,150,890 |
| September | 1,842,501 | 692,391 | 1,842,501 |
| Total | 10,337,763 | 10,569,489 | 20,907,252 |

Continued on next page.

Table G-3--Continued
Honey: Monthly U.S. imports of honey from China, by types, April 1992 to September 1993

| Year and month | Extra light amber and lighter | Light amber and darker | Total bulk natural honey |
|---|---|---|---|
| | Unit value (*per pound*) | | |
| 1992: | | | |
| April | $0.441 | $0.429 | $0.437 |
| May | .441 | .440 | .440 |
| June | .441 | .457 | .447 |
| July | .441 | .449 | .445 |
| August | .432 | .451 | .437 |
| September | .433 | .412 | .425 |
| October | .424 | .415 | .421 |
| November | .419 | .424 | .421 |
| December | .414 | .425 | .418 |
| Total | .430 | .432 | .431 |
| 1993: | | | |
| January | .419 | .416 | .418 |
| February | .408 | .395 | .401 |
| March | .399 | .408 | .403 |
| April | .405 | .559 | .504 |
| May | .400 | .387 | .392 |
| June | .391 | .380 | .385 |
| July | .389 | .374 | .381 |
| August | .373 | .371 | .372 |
| September | .433 | .412 | .425 |
| Total | .399 | .411 | .405 |

Source: Compiled from official statistics of the U.S. Department of Commerce.