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# UNITED STATES TARIFF COMMISSION

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# BROOMCORN

## Report to the President on Investigation No. TEA-I-12 Under Section 301(b) of the Trade Expansion Act of 1962



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#### UNITED STATES TARIFF COMMISSION

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#### REPORT TO THE PRESIDENT

U.S. Tariff Commission, March 25, 1968

To the President:

In accordance with section 301(f)(1) of the Trade Expansion Act of 1962 (76 Stat. 885), the U.S. Tariff Commission herein reports the results of an investigation made under section 301(b) of that act relating to broomcorn.

#### INTRODUCTION

The purpose of the investigation to which this report relates was to determine whether broomcorn provided for in item 192.55 of the Tariff Schedules of the United States is, as a result in major part of concessions granted thereon under trade agreements, being imported into the United States in such increased quantities as to cause, or threaten to cause, serious injury to the domestic industry producing like or directly competitive articles.

The investigation was instituted on October 11, 1967, upon petition filed under section 301(a)(1) of the Trade Expansion Act on September 27, 1967, by the Rocky Mountain Farmers Union, acting on behalf of the growers of broomcorn in Colorado and New Mexico. The Commission initially scheduled a public hearing to be held beginning January 16, 1968, in the hearing room of the Tariff Commission Building in Washington, D.C. Following a request on behalf of the petitioners, however, the place and date of the public hearing were changed to the auditorium of the Main Post Office Building, Denver, Colorado, February 1, 1968. 1/ The public hearing was held on February 1, as scheduled, and all interested parties were afforded opportunity to be present, to produce evidence, and to be heard. A transcript of the hearing and copies of formal briefs submitted by interested parties in connection with the investigation are attached. 2/

#### FINDING OF THE COMMISSION

On the basis of its investigation the Commission unanimously finds that broomcorn provided for in item 192.55 of the Tariff Schedules of the United States is not, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause, or threaten to cause, serious injury to the domestic industry producing like or directly competitive articles.

2/ The transcript and briefs were transmitted with the original report sent to the President.

<sup>1/</sup> Public notice of the institution of the Commission's investigation and of the public hearing to be held in connection therewith was given in the Federal Register of Oct. 17, 1967 (32 F.R. 14354). Public notice of the change in place and date of the public hearing was given in the Federal Register of Nov. 29, 1967 (32 F.R. 16297). In addition to the information developed at the hearing, the Commission obtained information from briefs of interested parties, from fieldwork, from other Government agencies, and responses to questionnaires sent to domestic growers.

# CONSIDERATIONS SUPPORTING THE COMMISSION'S FINDING $\underline{1}/$

In order for the Commission to make an affirmative finding under section 301(b)(1) of the Trade Expansion Act of 1962, it must determine that the imports in question are entering the United States in increased quantities; that the increased imports are due in major part to trade-agreement concessions; and that such increased imports are the major factor in causing, or threatening to cause, serious injury to the domestic industry concerned. Unless the Commission finds that trade-agreement concessions are in fact the major cause of increased imports, it is foreclosed from making an affirmative finding irrespective of the extent to which imports may be causing or threatening serious injury to the industry.

U.S. imports of broomcorn, which have fluctuated widely from year to year, increased during the period 1961-64, declined sharply in 1965, and then increased again in 1966 and 1967. They rose from 3,298 short tons in 1965, to 4,426 tons in 1966, and to 6,729 tons in 1967. Hence, the product "is being" imported in increased quantities within the meaning of the statute.

The Commission, however, cannot find that the trade-agreement concession on broomcorn was the major cause of the recent increase in imports. The only reduction in the rate of duty on this product under the trade-agreements program came into effect more than 26 years ago--

<sup>1/</sup> See additional observations by Commissioner Culliton, beginning on page 6.

in November 1941--when the rate was reduced from \$20 to \$10 per short ton. That reduction appears to have had little, if any, effect on the trend of imports.

The volume of imports of broomcorn in any year is influenced substantially by the size of the U.S. crop, which is determined to a large extent by weather conditions and plant disease. Imports generally have increased in periods of small domestic crops and consequent high prices, and have decreased in periods of large domestic crops and low prices. When the U.S. crop in 1965 was larger than it had been for several years, imports declined sharply; and when the domestic crop was small in 1966 and still smaller in 1967, imports increased substantially. The same relationship of imports to domestic crops is observable for almost the entire period 1950-64.

An additional factor that contributed to the increase in imports of broomcorn in 1966 and 1967 was the imposition on January 1, 1966, of restrictive tariff-rate quotas on imports of brooms. The overquota rates of duty, which are virtually prohibitive of the importation of broomcorn brooms, have limited the output of brooms in Mexico for export to the United States and thus made more Mexican broomcorn available for export.

A further stimulus to imports has been the increasing availability of processed broomcorn in Mexico. Inasmuch as processed broomcorn of domestic origin is not available in substantial volume, the development of processing in Mexico has enabled domestic broom manufacturers

to buy more of the particular assortments of fibers they need, ready for direct use with little or no waste.

The upward trend of imports has been sustained by an expansion of Mexico's capacity to export and the adoption of improved harvesting practices which have enhanced the general quality of Mexican broomcorn. Concurrently, because of significant changes in their cost structures, U.S. producers have become less responsive to rising prices than formerly, with a consequent strengthening of the competitive position of imports from Mexico.

Under these circumstances, the Commission concludes that the increase in imports of broomcorn is not due in major part to the tradeagreement concession of 1941.

#### ADDITIONAL OBSERVATIONS BY COMMISSIONER CULLITON

While I concur in the Commission's finding I do not subscribe to its statement of considerations; I am concerned that it does not adequately reflect the balanced consideration that the Tariff Commission has given this and other cases.

The first paragraph of the Commission's finding creates the impression that every petition must pass three separate hurdles and that if it does not surmount any one of them, separately and independently applied, the case must fail. My decision in this case does not rest as exclusively on a single standard as the Commission's statement might imply. Unfortunately, the Commission's opinions--past and present--erroneously suggest that the Commission, with complete callousness toward the plight of American industries, firms, and workers, gleefully searches for some reason to reject a petition and then latches on to it alone. In a previous case Commissioner Sutton and I observed:

A step-by-step application of each of the standards required by the law--and the rejection of any petition which fails to meet any one--may appear arbitrary and unsympathetic. Economic cause-and-effect relationships and measurement of phenomena (like injury) are not that fractionated or that precise. Economic reality as well as common sense suggests that there must be some kind of "overall appraisal" to see whether the conditions have been met in total. At the same time, however, legal reality as well as common sense suggests that the overall appraisal cannot be used as a substitute or a subterfuge to avoid the application of the specific tests. Standards begin to mean nothing when they are waived or loosely applied.  $\underline{1}/$ 

1/ Report to the President on Petition for Adjustment Assistance by General Plywood Corp., TEA-F-6, TC Publication 162, Oct. 29, 1965, p. 5.

This observation applies at both ends of the scale; we must neither play down individual standards to justify a positive finding nor apply each individual standard so rigidly that we ignore the total reality.

More specifically in the case at hand, I do not find, as stated by the Commission, that "the product is being imported in increased quantities <u>within the meaning of the statute</u>" (emphasis supplied). It is inconsistent to base such a conclusion on the imports of a few recent years (when, for a long time, they were not increasing) and then entertain the possibility that the major cause was a 26-year-old concession. By enumerating a number of other factors at work, the Commission by implication is suggesting a definition of major cause which is subjective to a degree not warranted by the law.

The Commission's responsibility is to look at all the facts within the context of the law and to the best of its ability interpret both the facts and the law. It is quite clear that:

The Congress provided for the mechanism of adjustment assistance in the Trade Expansion Act of 1962 as a new set of circumstances under which it granted new tariff-cutting authority to the President. Insofar as the tariff-cutting authority is concerned, such adjustment assistance provisions were not and could not have been retroactive to previously authorized cuts.

One of the rationales for establishing the new adjustment assistance provision was that businessmen and workers who commit their money and skills to an ongoing business situation have some right to expect that government will not arbitrarily alter the circumstances under which those commitments were made--circumstances which could be expected, by prudent people, to continue subject only to the usual risks and changes of a dynamic world. Before the TEA was enacted, the granting of

relief under the "escape clause" mechanism required that the United States modify an international agreement. Adjustment assistance, on the other hand, was adopted, in part at least, because the relief mechanism it provided was a completely internal affair of the United States.

As the very name implies, adjustment assistance was designed, not to restore the status quo ante, nor to make the world less competitive with respect to the article being considered, but to help firms and workers adjust to the new, rougher world. Accordingly, the Tariff Commission must look more at cause and effect relationships between concurrent changes than to whether a firm or some workers would have been in a more favorable situation had certain concessions not been made. The question of concurrent changes must, of course, be examined in the light of the fact that the time lag between cause and effect might be rather long in specific cases.

These interpretations are consistent with the requirement that the Commission consider all concessions; the law requires that the Commission should relate concession changes in duties to changes in imports, not only within discrete time periods, but also as a whole. The law so closely ties together concessions, increased imports, and injury--all within the context of a government-imposed change in an ongoing situation--that a serious deficiency in any one causal factor is adequate to remove the case from its compass.

Nevertheless, section 301(b)(1) clearly identifies the totality of the Commission's job when it provides that:

. . . the Tariff Commission shall promptly make an investigation to determine whether, as a result in major part of concessions granted under trade agreements, an article is being imported into the United States in such increased quantities as to cause, or threaten to cause, serious injury to the domestic industry producing an article which is like or directly competitive with the imported article.

The temptation to break the unity of the Commission's task into separable norms is, perhaps, made more attractive by section 301(b)(3), which provides--

For purposes of paragraph (1), increased imports shall be considered to cause, or threaten to cause, serious injury to the domestic industry concerned when the Tariff Commission finds that such increased imports have been the major factor in causing, or threatening to cause, such injury.

In my opinion, however, this latter provision is essentially definitional--i.e., the "concession-caused-increased-imports-caused-injury" requirement is, in the final analysis, unified and indivisible.

Clearly, the industry here concerned has serious problems, but the law under which it sought relief and under which the Commission operates makes no provision for rendering assistance.

#### INFORMATION OBTAINED IN THE INVESTIGATION

#### Description and Uses

Broomcorn, a variety of quick-growing sorghum, resembles corn (maize). It has an elongated, many-branched seed head containing the fibers, which have no commercial use other than in making brooms. Two main types of broomcorn, standard and dwarf, are grown in the United States. The standard type may grow to a height of 6 to 14 feet; it requires a better soil, and is less drought-resistant, than dwarf broomcorn, which grows about 4 to 6 feet high. The fiber produced by these two types, however, does not differ substantially in length or quality.

To be of good quality, broomcorn should have long, straight, resilient fibers ending in many small branchlets. For the U.S. and Canadian markets a light green color is preferred. Quality varies from year to year and from district to district, owing largely to varying weather conditions, the incidence of disease, and the harvesting and curing practices employed. The trade has established informal grades for broomcorn. These grades, based on usage, vary within the industry and have no set specifications. "Inside" or "handle" broomcorn is usually a short, rather stemmy fiber used to make the inside of the broom. "Turnover" or "shoulder" is a somewhat longer fiber used to make the shoulders of the broom. "Hurl" is used to make the outside of the broom and is long good-quality fiber.

Broomcorn grown in Mexico is generally substitutable for that grown in the United States, but differs in quality from that grown in other countries. The difference, primarily in fiber color, is attributable partly to the stage of growth at harvest. In Argentina and Europe the broomcorn is allowed to mature in order to produce seed for use as cattle feed, and it has straw-colored fibers, which are generally longer and heavier than U.S. or Mexican broomcorn.

The imported product covered by this investigation is broomcorn, including both crude (raw) and processed broomcorn. Processed broomcorn differs from the raw in that it has had the stems trimmed and fibers sorted according to length and quality. A recent development in the U.S. market is the substantial movement of processed broomcorn (largely imported) from dealers to manufacturers. This practice enables manufacturers to buy the particular assortment of fibers they need in a condition ready for use with little or no waste.

No other fiber, either natural or man-made, has been found that is as suitable as broomcorn for making household floor brooms and whiskbrooms. In some brooms, particularly heavy-duty types, certain firm vegetable fibers are used in conjunction with broomcorn as stiffeners. Brooms of other natural and synthetic fibers, however, offer limited competition to broomcorn brooms. Sotol  $\underline{1}$ / is now being substituted for broomcorn in some poor-quality brooms. Being of a comparable color, this low-priced fiber, produced from a type of cactus growing in Mexico and Southwestern United States, is used to make the inside of such brooms and is covered with an outer layer of broomcorn.

1/ Also known as "yucca," "bear grass," or "palmilla."

In the United States vacuum cleaners and various types of mops afford severe competition to brooms. Such cleaning equipment is replacing brooms, primarily because of the increasing popularity of both wall-to-wall carpeting and tile flooring.

#### U.S. Customs Treatment

Currently, the rate of duty on broomcorn, whether raw or processed, is \$10 per short ton (TSUS item 192.55). In the Tariff Act of 1930, broomcorn was initially dutiable at \$20 per short ton under paragraph 779. The duty remained at that level until November 15, 1941, when it was reduced to \$10 per short ton as the result of a concession in the bilateral trade agreement with Argentina. In the Kennedy Round, the \$10 per short ton rate was bound under the General Agreement on Tariffs and Trade, effective January 1, 1968. During the last decade, the duty on imports of broomcorn has been equivalent to less than 4 percent ad valorem. In 1966 the ad valorem equivalent of the duty was 2.6 percent, and in 1967, 1.9 percent.

To prevent the introduction of dangerous plant pests of corn, broomcorn, and related plants, the Secretary of Agriculture has established regulations governing the entry of these items.  $\underline{1}$ / All importations of broomcorn are subject to permit and inspection requirements of the Plant Quarantine Division, U.S. Department of Agriculture.

1/ The regulations were issued under authority of the Plant Quarantine Act of 1912 and are contained in Part 319.41, Title 7, of the Code of Federal Regulations.

Before January 1, 1966 broomcorn brooms (not a subject of the instant investigation) were dutiable at the rate of 25 percent ad valorem. Broomcorn brooms are not the subject of a trade agreement concession. On January 1, 1966, pursuant to the Technical Amendments Act of 1965,  $\underline{1}$ / broomcorn brooms became subject to tariff-rate quotas with reduced rates of 20 percent ad valorem on within-quota entries, but substantially higher rates of duty were imposed on over-quota entries.  $\underline{2}/\underline{3}$ / In 1966 and 1967, virtually no brooms were imported at the over-quota rates of duty. Imports of within-quota broomcorn brooms in 1966 and 1967, mostly from Mexico, Hungary, and Poland, are estimated to be equivalent to about 10 percent of domestic production in those years. Had there been over-quota imports of broomcorn whiskbrooms in 1966, the specific rate of duty on such imports would

1/ In January 1961, the Tariff Commission had instituted an investigation of the costs of producing broomcorn brooms in the United States and Mexico. This investigation was conducted under the provisions of section 336, Tariff Act of 1930. In January 1962, the Commission reported that a 50-percent increase in the rate of duty (the maximum permissible) would not equalize the differences in costs of production between the two countries and that, therefore, the then existing 25 percent rate of duty should be levied on the basis of the American selling price of broomcorn brooms. The customs treatment of such brooms was not altered until the Technical Amendments Act of 1965 became effective.

2/ The within- and over-quota rates apply only to whiskbrooms that are valued not over 32 cents each, and to other brooms valued not over 96 cents each. The more expensive brooms are dutiable at the rate of 32 percent ad valorem irrespective of the volume of entries. Imports of such brooms, however, are counted toward the aforementioned quotas. Broomcorn brooms are dutiable under TSUS items 750.26-750.31.

3/ In accordance with Executive Order No. 11377 of Oct. 23, 1967, the Tariff Commission will make annual reports on the domestic consumption of broomcorn brooms to provide information to the President for his determinations regarding the size of the quotas for such brooms, as provided for in headnote (3), subpart A, Part 8, Schedule 7 of the TSUS. The first report will be made in April or May 1968.

have been equivalent to an estimated 100 percent ad valorem; that on over-quota imports of all other broomcorn brooms would have been equivalent to an estimated 120 percent ad valorem.

#### Consumption

A long-term trend to the use of fewer and lighter-weight brooms during the last three decades has resulted in a substantial decline in the U.S. consumption of broomcorn. In 1936-65 the average annual apparent consumption  $\underline{1}$  by successive 5-year periods was as follows:

5-year average	short tons
1936-40	35,848
1941-45	44,477
1946-50	37,557
1951-55	36,796
1956-60	29,982
1961-65	28.526

The U.S. apparent consumption in 1966 amounted to 23,633 tons and in 1967 to 21,517 tons (table 1, footnote 2). Dealers in broomcorn state that the current consumption requirements of the U.S. manufacturers of brooms are 25,000 to 30,000 tons of broomcorn per year. As apparent consumption was smaller than 25,000 tons in each of the years 1966 and 1967, inventories of this fiber probably declined considerably during these years.

The decline in the U.S. consumption of broomcorn resulted largely from the long-term downward trend in the U.S. use of broomcorn brooms and reflects the introduction of smaller and lighter styles of broomcorn brooms.

1/ Production plus imports minus exports.

The U.S. production of broomcorn brooms has been declining largely because of a longrun decline in the demand for such brooms, and increased competition from imported brooms (until 1966 when tariff-rate quotas were imposed on imported brooms). The decline in the demand for broomcorn brooms, in turn, reflects several factors, including: The longrun growth in the disposable per capita income of U.S. consumers; changes in the character and facilities of urban and rural housing, which stimulated the demand for vacuum cleaners and mops; the substitution of other devices for brooms in the removal of snow and ice from railway switches; and the introduction of plastic brooms.

With the increasing affluence of the U.S. population, more and more households have installed wall-to-wall carpeting and rugs, hardwood floors, and tile. These surfaces readily lend themselves to the use of vacuum cleaners or mops. Because of these changes, household brooms are now used chiefly in kitchens, basements, on porches, and sidewalks. The growing importance of apartment houses (which devote less space to these facilities, per household, than do single-family dwellings), has also had a restraining effect on the use of brooms.

Meanwhile, other factors encouraged the use of substitutes for broomcorn brooms. The extension of electricity to many rural areas, for example, contributed to the increased demand for vacuum cleaners in lieu of brooms. In factories, vacuum cleaners and mops have been used to a greater extent than they were a generation ago. Railroad companies, which formerly purchased thousands of brooms annually, have virtually ceased to employ brooms in switch-cleaning work, by

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substituting steam hoses and electric heaters. For many years plastic brooms, largely of domestic origin, have been a source of limited competition to broomcorn brooms.

In recent years, either to offset increasing production costs or to enable them to offer a line of lower priced brooms, some domestic manufacturers of brooms have produced household brooms containing broomcorn mixed with imported sotol. Sotol also provides a cheap supplement to broomcorn in years of small crops. U.S. imports of this processed fiber have increased during the past decade. During the last four years, such imports ranged annually as follows: <u>1</u>/

Year	Shor	•t	tons
			_
1964	- 2	2,8	359
1965	- 3	3,(	057
1966	- 3	3,1	+15
1967		3,5	588

Sotol fiber, as imported, is equivalent to raw broomcorn on a 1 to 1.5 ratio; thus, the 3,588 tons imported in 1967 were equivalent to 5,382 tons of raw broomcorn.

As previously indicated, until 1966 there was an upward trend in U.S. imports of broomcorn brooms. These imports exerted a downward pressure on the U.S. production of similar brooms. The higher rates of duty on over-quota imports, which became effective on January 1, 1966, virtually assure domestic manufacturers the great bulk of the domestic market for brooms. At the same time, the new rates have had the effect of stimulating the importation of broomcorn and limiting

<sup>1/</sup> Based upon an analysis of import entry papers in TSUS item 192.85, under which sotol enters.

the advantage that the domestic broomcorn grower might have obtained from the increased restrictions on imports of brooms.

If the prices of broomcorn, relative to the prices of competing fibers, do not change materially, the U.S. consumption of broomcorn probably will exceed 20,000 tons per year during the foreseeable future. If successful mechanization is not developed to reduce the high cost of harvesting and alleviate the scarcity of harvest labor, a growing share of U.S. consumption of broomcorn probably will be supplied by imports. Moreover, other vegetable fibers of foreign and domestic origin will continue to be mixed on an increasing scale with broomcorn in the domestic production of brooms containing broomcorn. Meanwhile, plastic household brooms probably will offer increased competition to household brooms containing broomcorn, since the mixture of other vegetable fibers downgrades the quality of the latter.

#### U.S. Producers

Broomcorn was first grown commercially in the United States in the Connecticut Valley in about 1780. By 1850 such production had spread to the Mohawk Valley of New York and westward to the Scioto Valley of Ohio. At about this time production began in Illinois, Kansas, and Nebraska. By 1900 Illinois had become the chief producing State, having more than half the total U.S. acreage; production had all but disappeared in Connecticut, New York, and Ohio. Currently, the production of broomcorn occurs chiefly in the semiarid regions of Oklahoma, Colorado, New Mexico, and Texas (table 2). The small acreage still planted in Illinois is devoted mainly to the production of seed.

#### Location and size of farms

Three principal growing districts are found within the above-named four southwestern States -- the Western district, the Lindsay district, and the South Texas district. The Western district, with about 350 growers, is by far the largest of the three districts, in terms of both area and production (fig. 1). It embraces Cimmaron County in the Oklahoma panhandle, Baca County in southeastern Colorado, and eastern New Mexico. The typical broomcorn farm in this district consists of about 1,200 acres of semiarid unirrigated land, about 275 acres of which are planted to broomcorn. Yields here are low; generally more than 7 acres are required to produce a ton of broomcorn. The Lindsay district in central Oklahoma, where about 150 growers produced broomcorn in 1967. encompasses fertile unirrigated bottomland well suited to standard broomcorn. In this area the typical broomcorn farm contains nearly 400 acres, some 80 of which are planted to broomcorn. Productivity in this district is higher than in the other two; generally about 4 acres are required to produce a ton of broomcorn. The South Texas district has about 125 growers. A number of very large farms are located here; the size of the typical broomcorn farm is about double that in the Lindsay district. Yields are not as high, however, since about 6 acres are required to produce a ton of broomcorn.

During the past two decades, the number of broomcorn growers in each of the areas has declined markedly. The 1949 Census of Agriculture reported 4,928 farmers growing broomcorn. In 1964 the total had declined to 1,453; it is estimated that in 1967 fewer than 700 farmers



Figure 1.--Broomcorn: U.S. production, by district, 1950-67

were growing broomcorn. The chief factors affecting the decline in the number of growers are those associated with the downtrend in overall production, which will be discussed later. Although the decline in the number of growers was accompanied by reduced acreage and production, it proceeded at a faster rate than did the latter, since the size per farm increased. In the Western district it is not uncommon for a broomcorn grower to devote 1 or 2 sections (640 to 1,280 acres) to broomcorn alone. The small broomcorn farmer is finding it increasingly difficult to recruit harvest labor and expensive to comply with housing standards and bookkeeping requirements associated with the hiring of harvest crews.

#### Growing and harvesting

Preharvest operations in broomcorn growing are basically the same in the three growing districts. The seed is planted from March to July, depending on when there is sufficient moisture to start the crop. June and July plantings are largely confined to the Western district. Frequently, in all districts growers have to reseed one or more times, because of insufficient moisture or, more rarely, too much rain. After the seed has been planted, the broomcorn is cultivated two or three times during the growing period. Broomcorn is a fastgrowing plant and is ready for harvest 2 or 3 months after planting. Harvesting is generally done by hand by crews of 30 to 60 people, but methods differ in the three growing districts.

<u>Western district</u>.--Dwarf broomcorn constitutes the principal type of broomcorn grown in the Western district. This type is short enough

that the stalk does not have to be broken over or "tabled" to enable the harvester to reach the seed heads (fiber). The latter is pulled from the stalk rather than cut. Thereupon, it is placed on bent-over stalks to hold the fiber off the ground for several days to cure; then, it is taken to a central location in the field to be seeded (i.e., seeds removed from the fiber) and baled at a time convenient to the grower.

In southeastern Colorado both standard and dwarf broomcorn are grown, but, owing to the soil and dry climate there, the standard type does not reach the height it does in the Lindsay district and, therefore, does not have to be tabled before being cut. Sometimes the broomcorn there is cut with a corn binder to prevent it from becoming overripe, and harvested later by hand when the grower can get a harvesting crew.

Lindsay district.--In harvesting standard broomcorn in the Lindsay district, the workers walk between two rows of broomcorn and bend the tall stalks over so that the fiber can be reached. The fibers are cut from the stalk with a special knife and the encircling sheath or "boot" is removed. Thereupon, a crew of haulers moves through the field with special wagons gathering the cut broomcorn and hauling it to the seeding and curing area. The seeding crew consists of 15 to 30 people, who feed the broomcorn into a seeder. The seed, being harvested in the immature state, has little feed value and is generally spread back onto the soil as a mulch. As the fiber emerges from the seeder another group of workers places it in specially constructed

curing sheds, where it remains for 10 to 14 days. After the brush has cured, it is removed from the shed and baled. Bales range in weight from about 300 to 450 pounds, depending on the quality of the brush.

South Texas district.--The dwarf variety is virtually the sole type of broomcorn grown in South Texas, but the harvesting procedure there is somewhat different from that for dwarf broomcorn in the Western district. As the brush is pulled, it is tied into small bundles and taken to a drying yard. After the straw has cured it is seeded and baled as in the other districts.

#### Other farm enterprises

Farmers raising broomcorn received about two-thirds of their gross income from other enterprises in 1964-66 and about a third from broomcorn (table 3). The other major sources of income were wheat, grain sorghum, livestock, and Government payments in conjunction with price-support programs. Although broomcorn is a major source of income in all districts, its importance is greatest in the Western district, because growers there are less able to shift from the production of broomcorn to other crops.

Broomcorn is not only important to the farmers in the Western district, but it also plays a substantial role in the entire economy of the respective communities in which it is grown. In 1967 the broomcorn crop in the Western district had a value of approximately \$4 million. Although nearly half of this total was paid to migratory harvest labor, most of these payments remained in the district, because the workers spent most of their earnings there. The

croplands of the Western broomcorn district have deep sandy and loam soils which, when not irrigated, are suitable only for growing certain dry-land crops, particularly grain sorghum, wheat, and broomcorn. When irrigated, the loamy soil is also suitable for producing cotton, sugar beets, and peanuts. Of the three dry-land crops, broomcorn is better suited to the sandy soil than either wheat or grain sorghum; it requires less moisture and is the only crop that will keep the sandy soils of the Western district from excessive wind erosion.

The major alternative crops in the Western broomcorn district are subject to acreage limitations under price-support programs. These programs are a very important factor in the economy of this district; support payments contribute a sizable portion of the total farm income. 1/ Growers already participating in the Government programs would forfeit their rights under the programs if they exceeded their acreage allotments in controlled crops. Broomcorn growers not having a base acreage for the Government programs cannot easily participate therein, nor would it likely prove profitable to grow these crops as noncooperators in the programs. At this time, therefore, even though other crops can be grown in this area, they cannot be considered an alternative to replace broomcorn. Nor can broomcorn land be profitably returned to permanent range pasture for

<sup>1/</sup> Among the farms for which separate data were reported on Government payments in the Tariff Commission's questionnaire to growers, Government payments amounted to about two-thirds of the net farm income, and in the Western district alone Government payments were in excess of net farm income. Without the Government payments, these farms in the Western district would have had net losses.

livestock. Its carrying capacity for livestock is inadequate to provide much return on the present investment in land.

The importance of broomcorn to the total economy of the Lindsay district is not as great as in the Western district but greater than in the South Texas district. In addition to raising broomcorn, the Lindsay farmers grow grain sorghum, alfalfa, other hay, wheat, soy beans, pasture, and livestock. Broomcorn is being replaced more and more by livestock, hay, and pasture--enterprises into which farmers can freely enter without Government farm program restrictions.

Broomcorn plays a minor role in the farm economy of the South Texas district and an even smaller part in the overall economy. Cattle, grain sorghum, and cotton are principal sources of farm income.

#### The seasonal labor force

The production of broomcorn entails a much higher direct labor cost in relation to total cost than do most other farm enterprises in the broomcorn-growing districts. Most of the labor required is harvest labor, since the harvesting of broomcorn has not been mechanized. Consequently, direct labor costs constitute about 80 percent of the operating costs in producing broomcorn (exclusive of a return for operators' labor and land costs), compared with about 15 percent in producing other major crops, such as wheat and grain sorghum, grown in the broomcorn districts.

Not only is broomcorn production dependent on a large supply of hand labor, but for each field such labor must be available during

the short period of a week or 10 days in which the broomcorn is at a suitable stage for harvest. Broomcorn cutting and pulling crews generally move from farm to farm during the harvest season. Except in the South Texas district, most of the cutting and pulling is done on an hourly, rather than a piecework, basis. In crews where children or other inefficient workers are present, there is little incentive for the more capable workers to go faster than the least efficient. The recent termination of the "bracero" program increased the demand for domestic workers. The type of workers now attracted by this lowpaying and tiring seasonal work varies among the broomcorn-growing districts. In general, they consist of either local workers, migratory farm workers, or Indians from nearby reservations. Many of the local workers are wives and high school students seeking seasonal employment. Others are families receiving welfare assistance. The productivity of this labor force is somewhat lower than that of 5 and 10 years ago.

Many broomcorn workers have little regular employment outside of the short broomcorn harvest season. Such is the case for many of the Indians, who return to the reservations after the harvest, and for many of the families receiving welfare assistance. The latter are reported as being likely to lose their welfare checks if they enter the broomcorn harvest.

Production, Sales, Exports, and Inventories

The U.S. annual production of broomcorn has declined markedly during the past three decades (table 1 and fig. 2). The production in 1967 was less than 15,000 short tons, compared with an annual average of 26,000 short tons in 1961-65 and 38,000 short tons in 1936-40. Associated with the long-term downward trend in production have been wide variations in production from year to year. As recently as 1965 production was at the relatively high level of more than 32,000 tons.

The long-term downward trend in production has been matched by a similar trend in both acreage planted and acreage harvested. The number of acres planted to broomcorn in the United States declined from 146,000 in 1966 to 131,000 in 1967. This decline constituted a continuation of a trend well under way during the previous decade. During 1956-60 an average of 236,000 acres were planted to broomcorn, whereas in 1961-65 the average was 186,000 acres (table 2). The very small crop harvested in 1967, however, reflected not only a decline in acreage planted and the low yields attributable primarily to adverse growing conditions, but also the fact that nearly a fifth of the acreage planted in that year was abandoned without harvest.

The poor harvest in 1967 typifies the significant role played by weather and disease in the annual variations in both output and quality. Owing to severe drought and disease, broomcorn often fails to reach the harvest stage, particularly in parts of the Western district. Drought was the major factor, for example, in the high percentage of abandonment, the low yield per acre, and the low production in 1964.



Figure 2.--Broomcorn: U.S. production, imports for consumption, and total U.S. supply, 5-year averages 1936-65, and annual 1966 and 1967

Generally, favorable weather conditions, as in 1965, have resulted in a low percentage of abandonment, high yields per acre, and large crops. Notwithstanding these wide variations from year to year, the average yield per acre on U.S. farms producing broomcorn has shown no discernible trend over the past three decades.

U.S. annual sales of broomcorn by growers have generally about equaled production, there being little annual carryover (July 1) in the hands of farmers.

The long-term downward trend in the U.S. production of broomcorn is attributable to a variety of factors, including: The aforementioned decline in consumption (and a concurrent increase in the consumption of sotol), a decline in exports, an increase in imports, and the failure of prices received by growers to keep pace with increasing costs. The decline in consumption has been the principal factor in the long-term decline of production. Production fell from an annual average of 36,000 tons in 1946-50 to 23,000 tons in 1963-67--a decline of 13,000 tons. Over the same interval the annual average consumption fell by 11,000 tons. The smaller decline in consumption than in production--2,000 tons--was accompanied by a small increase in imports and a slight decline in exports. The sharp decline in production, from an unusually high level of 32,000 tons in 1965 to a record low of 15,000 tons in 1967, was accompanied by an increase in imports from 3,000 tons in 1965 to 8,000 tons (raw-weight basis) in 1967.

A further significant factor in the decline in production in recent years has been the failure of prices received by growers to

advance as fast as their costs, chief among which are labor costs. Broomcorn growers, dealers, local bankers, and county agricultural officials in broomcorn growing districts have been almost unanimous that labor cost, particularly harvest labor, is by far the major cost in growing broomcorn and that growers have been subject to a profit squeeze resulting from the failure of prices received for broomcorn to rise as fast as labor costs. Farm wage rates in broomcorn-growing States advanced from an average of 77 cents per hour in the period 1950-54 to \$1.09 per hour in 1963-67--an increase of 42 percent (table 4). Average prices received by growers in the same period moved irregularly from \$393 per ton to \$372--a decline of 6 percent (table 5). New State standards governing housing and other facilities for hired workers, moreover, have increased indirect labor costs.

A reflection of the declining vigor of the broomcorn industry has been the discouragement of broomcorn production in recent years by local bankers. Large amounts of short-term credit are needed to finance broomcorn harvest labor, and local bankers discourage many farmers from growing broomcorn because they feel it is a poor risk.

U.S. annual exports of brocmcorn in recent years have averaged about four-fifths of what they were a decade earlier and about half

of those two decades earlier. In 1936-65 the average annual exports of broomcorn, for 5-year periods, were as follows:

5-year average:	Short tons
<u> </u>	
1936-40	2,323
1941-45	3,215
1946-50	2,103
1951-55	1,527
1956-60	1,406
1961-65	1,384

In 1966, when exports amounted to 1,296 tons, they were equivalent to 6.5 percent of the domestic production of broomcorn; in 1967 they totaled 1,458 tons and were equivalent to 9.8 percent of the record low domestic crop.

Generally, more than 90 percent of the U.S. exports have gone to Canada (which grows no broomcorn). For more than a decade, the United States has been Canada's principal supplier (table 6). Canadian broom manufacturers have been accustomed to using the green type of broomcorn grown in the United States. Only in recent years has this type of broomcorn been available from Mexico. In Canada, as in the United States there has been a long-term decline in the production of broomcorn brooms. Its total consumption of broomcorn in 1966 was a fourth smaller than in 1961. This development is the principal reason for the long-run decline in U.S. exports of broomcorn.

Inventories of broomcorn are held mainly by the broom manufacturers and broomcorn dealers. Most farmers sell their crop soon after harvest, in part to repay loans obtained before the harvest; few of them have storage facilities to hold broomcorn for an extended period of time. The industry carryover into the new crop season is usually a 2- to 6-month supply. In times of high production and low prices, broom manufacturers and some dealers build up sizable stocks in excess of their regular working inventory to hedge against higher prices in years of low production. Little deterioration occurs in the materials stored in warehouses. The chief problem associated with an excess carryover is the substantial investment required. Although no statistics are available on broomcorn inventories, it appears that, following two years of short supplies, trade inventories in early 1968 are abnormally low.

#### U.S. Imports

About a dozen broomcorn dealers and a few of the larger manufacturers of brooms account for nearly all of the U.S imports of broomcorn. Most of the dealer-importers also buy domestic broomcorn; in addition, they deal in other broom fibers and supplies for sale to broom manufacturers. The dealers often act both as commission agents in handling imports for large manufacturers, and as importers on their own account for resale to broom manufacturers. They generally provide warehouse facilities for a substantial part of both the imported and domestic broomcorn.

The bulk of the imports enter the United States during the last 6 months of the year, but somewhat in advance of the season during which most of the U.S. crop is marketed (table 7). In the years 1962-66, 83 percent of the imports entered during the months July-December and 44 percent entered during the months August-September

alone. Generally, little of the domestic crop is ready for market before September, when buyers have already had access to imports.

#### Comparability of imported and domestic broomcorn

Mexican broomcorn, which accounted for 95 percent of the imports in 1967 (table 8), is generally substitutable for domestic broomcorn. This comparability has been achieved only in the last several years. Most Mexican broomcorn is now produced from seed grown in Illinois -the same type of seed that is used for domestic broomcorn. Mexican broomcorn is now harvested while still green, as is domestic broomcorn, to preserve the light green color of the fiber. Variations in quality occur in both domestic and Mexican broomcorn according to the areas in which it is produced and according to annual growing conditions. Some areas, both in the United States and Mexico, generally produce a consistently superior long fiber. Both the Mexican and South Texan broomcorn have a larger portion of undesirable center stems in the fiber than does the product of the Lindsay or Western district. The method of production and preparation of broomcorn in Mexico is now oriented to the United States market but the wire binding of broomcorn bales there usually is not as carefully done as in the United States. Mexican broomcorn, which is now used interchangeably with domestic broomcorn by U.S. broom manufacturers, has generally been available to importers at slightly lower duty-paid prices than comparable domestic broomcorn.

Since 1965, the quantity of processed broomcorn imported from Mexico has increased rapidly. Processed broomcorn has been

size-graded; moreover, wastes, amounting to about a third of the weight of the raw broomcorn, have been eliminated to ready the fiber for use by the manufacturer. All of the domestic broomcorn, on the other hand, is sold by farmers in raw form. Few dealers do any processing; most of it must be undertaken by the broom manufacturers. Thus, the bulk of the processed broomcorn available to domestic broom manufacturers has been imported.

Argentine and European broomcorn is harvested when fully ripe; as a result, the fiber is without the greenish color desired by the U.S. market. Producers in these countries let the crop mature to recover the seed and, since the United States is only a minor market for their broomcorn, they make little effort to prepare it to suit the requirements of U.S. broom manufacturers (table 8). Most U.S. imports from these countries go either into industrial-type brooms, where color is not so important, or into products where the broomcorn is dyed. Virtually all of the Argentine broomcorn enters in raw form, whereas most of that from Europe enters in processed form. Ordinarily, both are sold at substantially lower prices than domestic raw or processed broomcorn.

#### Trend

Over the years U.S. annual imports of broomcorn have fluctuated widely. In the 5-year period 1936-40, before the duty was reduced in 1941, imports of broomcorn averaged 311 tons annually and were equal to less than 1 percent of domestic consumption (table 1). In the 5-year period 1946-50, they averaged 3,400 tons annually and were

equal to 9 percent of consumption; average annual imports were still higher in 1951-55, but substantially lower in 1956-60, than in 1946-50. Imports increased each year from 1961 to 1964, declined in 1965, and then rose to the record level of 6,729 tons in 1967. The 1967 imports, however, included about 2,700 tons of processed broomcorn, which when converted to a raw basis comparable with domestic production, equates total imports in 1967 to 8,100 tons of unprocessed broomcorn--equal to 38 percent of apparent consumption (table 1, footnote 2).

#### Principal supplying countries

The emergence of Mexico as the predominant U.S. supplier of broomcorn has been associated with a rapid increase in its production, a decline in production in most European producing countries, and increased imports by European consuming countries from Argentina. In 1967 Mexico was by far the principal supplier of U.S. imports with 95 percent of the total. The nearby U.S. market, plus an expanding internal demand, stimulated a rapid expansion of broomcorn production Trade sources estimate that production there increased in Mexico. from about 7,000 short tons in the late 1950's to more than 13,000 tons in 1967. Broomcorn is produced in three major areas of northern Mexico: one immediately south of the Rio Grande, from Nuevo Laredo to Matamoros; another around Cadereyta, which is the broom manufacturing center of Mexico; and a third around Torreon in the north central part of the country. A new area is entering production around Hermosillo in northwestern Mexico. Roughly half of the Mexican crop

is currently sold to the United States  $\underline{1}$ / and Canada; the rest is used in the production of brooms in Mexico. The availability of newlyharvested Mexican broomcorn before the U.S. crop is harvested, plus the lower prices of Mexican broomcorn, has led to increasing sales in the United States.

In recent years, Argentina has been the world's leading producer of broomcorn. It supplies most of the broomcorn entering international trade outside of North America. Argentina was the predominant U.S. supplier in most years prior to the 1950's. In Argentina, in contrast to the practice in the United States and Mexico, broomcorn is not harvested until the seed is mature. At this stage the fiber has lost all its green color, which is prized in the U.S. and Canadian markets; hence, there is little demand for Argentine broomcorn in North America. Data on exports of broomcorn from Argentina are shown in table 9.

Until recently a number of European countries, including Italy, Hungary, Yugoslavia, and Greece exported substantial quantities of broomcorn; rising labor costs, however, have discouraged production in these countries so that most of them now export relatively small quantities. Italy has become a net importer.

#### Factors contributing to increased imports

Historically imports appear to have entered in increased quantities in response to short domestic crops and high prices. 2/ Domestic

producers have often responded to high prices by increasing plantings in the following year. Increased production, in turn, has generally depressed prices and discouraged imports (table 5 and fig. 3). Since the late 1950's, however, imports have increased markedly and domestic production has declined. The growth in imports has been sustained by an expansion of Mexico's capacity to export. During the last decade Mexican producers have adopted improved harvesting practices, so that Mexican broomcorn has become generally acceptable to U.S. buyers. Meanwhile, because of significant changes in their cost structures, described heretofore, U.S. producers have become less responsive to rising prices than formerly, with a consequent strengthening of the competitive position of imports from Mexico.

Another factor contributing to the increase in imports has been the availability of processed broomcorn in significant volume since 1965. Trade sources estimate that processing in Mexico can be done several cents per pound cheaper than in the United States. The growth in acceptance of processed broomcorn by broom manufacturers has stimulated the purchase from Mexico of this advanced product. Processed broomcorn of domestic origin is not available in substantial volume.

An additional stimulus to imports since January 1, 1966, has been the imposition of restrictive tariff quotas on imports of broomcorn brooms. The over-quota rates, which are virtually prohibitive of the importation of broomcorn brooms, have limited the output of brooms in Mexico for export to the United States and thus made more Mexican broomcorn available for export.



Figure 3.--Broomcorn: U.S. production, season average price to growers, and U.S. imports, years beginning July 1, 1949-67

#### Trend in Employment

In 1966 and 1967 some 3,000 to 4,000 hired workers were employed during the broomcorn harvest, working an average of about two months each. In the decade of the 1950's, probably 6,000 or 7,000 hired workers were so employed. The harvest provides the only significant demand for hired labor on these farms. Since little change has occurred in the method of harvesting over the years, the size of the labor force has declined, but probably not commensurately, with the decline in harvested acreage; there has been some decline in productivity per worker. The downward trend in the acreage harvested has been about proportionate to the downward trend in production.

#### Prices Received by U.S. Producers

There are no organized commodity exchanges or farmers' marketing cooperatives for broomcorn in the United States, nor are there any specific standards for grade or quality. Farm prices of domestic broomcorn result from negotiations between individual dealers or manufacturers' agents and farmers. In some transactions, the dealers buy broomcorn on their own account and store it in their own warehouses for future sale to broom manufacturers. In others, the dealers function as commission agents for broom manufacturers and often provide storage pending shipment of the broomcorn to their principals. Generally, a close working relationship prevails between dealers and manufacturers; the dealer becomes familiar with the

manufacturer's special requirements and the manufacturer often depends on the dealer for most of his supply.

About 15 dealers purchase virtually all of the broomcorn grown in the United States; most of them also engage in importing. The four largest dealers account for more than half the total domestic and import business. Some have warehouses in one or more districts in which broomcorn is grown. The dealers generally carry inventories to be able to supply broomcorn to their customers throughout the year.

The annual average prices received by U.S. growers for broomcorn declined sharply in the early 1950's, but since then have shown an upward trend. Prices of broomcorn have been influenced primarily by changes in demand and supply and secondarily by the changes in the composition and quality of the domestic output. The annual average prices received by domestic growers of broomcorn in 1960-67 were as follows (from table 5):

to the
per con

Crop of 1960 1961 1962 1963	\$328 323 358 384
1964	363
1965	320
1966	367
1967	427

These average prices relate not to a designated type of broomcorn of uniform length and quality but rather to annual aggregates having varying composition and quality. In view of the poor quality of a substantial part of the 1967 domestic crop, the average price indicated for 1967 understates the prices received by growers who were able to market broomcorn of usual quality.

The annual average prices per ton received by growers in the leading producing States in 1966 and 1967 were as follows:

	Price for	crop of
State	1966	1967
Oklahoma	\$410	\$460
Texas	- 390	430
Colorado	320	360
New Mexico	- 350	450

These average prices also relate to overall production of fibers varying in length and quality from one area to another, as well as in the time that the broomcorn was delivered to the market.

There has been some tendency over the years for the annual average price received by growers to vary inversely with production. A year of low production and high prices was frequently followed by a year of high production and low prices and vice versa. The growers' reactions to such price changes were frequently manifested by a change in the acres planted to broomcorn in the following year. In recent years, however, the higher prices have not constituted any substantial stimulus to increased planting. manufacturer's special requirements and the manufacturer often depends on the dealer for most of his supply.

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Financial Experience of Domestic Growers

The data obtained by the Commission from U.S. growers of broomcorn indicate that the average annual net farm income of such growers during the years 1964-66 ranged from \$3,272 per farm in 1965 to \$3,660 per farm in 1966 (table 3).

As indicated earlier, the typical broomcorn farm is a multioperation establishment, which produces various farm products in conjunction with broomcorn. The average net return to the growers relates to the farmers' net income from all farm operations, and makes no allowance for compensation to management, unpaid family labor, or interest on land owned free and clear. It represents net returns before income taxes and is inclusive of Government support payments. The average annual gross farm income received by growers in the three major broomcorn districts combined increased from \$22,745 in 1964, to \$26,715 in 1966. The returns from the sale of broomcorn generally accounted for more than a third of gross returns of these establishments. The average gross returns per grower from the sale of broomcorn alone increased from \$8,664 in 1964 to \$9,488 in 1966.

The gross farm income, for any one farm in any given year during the period 1964-66, ranged from a high of \$124,416 to a low of \$184; meanwhile, the net farm income and losses ranged from an income of \$28,535 to a loss of \$20,325.

Financial data, on an average farm basis, covering the overall farm operations of the broomcorn farmers are summarized in table 3 for the three broomcorn growing districts and in total. It will be

noted that, whereas the average annual net farm income in the South Texas district increased by about 126 percent between 1964 and 1966, that in the Lindsay and Western districts decreased by 14 and 20 percent, respectively. About a fourth of the growers of broomcorn in the South Texas and Western districts reported losses in one or more years during the period 1964-66, as did about 10 percent of those in the Lindsay district.

Factors contributing to the increased gross farm income in 1964-66 were the increased Government payments received during this period by broomcorn growers on farm operations subject to Government support programs and the shift from broomcorn to more profitable farm crops, particularly in the South Texas district. The data for 1964, however, are somewhat atypical, in view of the low production associated with drought conditions in that year.

Appendix

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Table 1.--Broomcorn: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 5-year averages 1936-65, and annual 1961-67

(	Quantity	in	short	tons;	value	in	thousands	of	dollars)	)
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(Quality)		coms, varue		mab or dori	-415/
Period	Produc- tion	Imports	Exports :	Apparent consumption <u>l</u> /	Ratio (percent) of imports to consumption
	•		Quantity	-	
	e e	: :			
5-year average:	0 0	•	, a , o	:	:
1936-40	: 37,860	: 311 ;	2,323 :	35,848 :	0.9
1941-45	: 46,200	: 1,492 :	3,215 :	44,477 :	3.4
1946-50	: 36,260	: 3,400 :	2,103 :	37,557 :	9.1
1951-55	: 34,140	: 4,183 :	1,527 :	36,796 :	11.4
1956-60	: 29,380	: 2,008 :	: 1,406 :	29,982 :	6.7
1961-65	: 26,460	: 3,450 :	: 1,384 :	28,526 :	12.1
Annual:	•	•	, o		-
1961	: 25,700	: 1,586 :	1,525 :	25,761 :	6.2
1962	: 26,100	: 2,316 :	1,463 :	26,953 :	8.6
1963	: 27,400	: 3,917 :	1,585 :	29,732 :	13.2
1964	: 20,800	: 6,133 :	1,312 :	25,621 :	23.9
1965 2/	: 32,300	: 3,298 :	1,034 :	34,564 :	9.5
1966 2/3/	: 20,000	: 4,426 :	1,296 :	23,130 :	19.1
1967 2/3/	: 14,900	: 6,729 :	1,458 :	20,171 ;	33.4
	•		Value		
	*	2 ·			) )
5-year average:	• •				
1936-40	: 3,108	: 17:	: 227 :	4/ 5	: 4/
1941-45	: 9,444	: 147 :	; 654 ;	<u>4</u> /	· · · · · · · · · · · · · · · · · · ·
1946-50	: 10,434	: 639 :	: 658 <b>:</b>	<u><u> </u></u>	: <u>4</u> /
1951-55	: 11,732	: 1,183 :	: 6 <u>3</u> 0 :	<u> </u>	s <u>4</u> /
1956-60	: 8,381	: 507 :	; 448 :	$\frac{1}{4}$	· · · · · · · · · · · · · · · · · · ·
1961-65	: 9,214	: 917 :	510 :	4/ :	s 4/
Annual:	e e	o e		:	 }
1961	: 8,306	: 383 :	; 548 ;	4/ :	: 4/
1962	: 9,355	: 571 :	: 509 <b>:</b>	$\underline{\underline{u}}$	· <u>4</u> /
1963	: 10,514	: 1,102 :	; 565 ;	$\underline{\underline{4}}$ :	: 4/
1964	: 7,556	: 1,550 :	494 :	· <u>4</u> / :	· <u>4</u> /
1965	: 10,341	: 981 :	432 :	$\underline{\underline{4}}$	<u> </u>
1966 3/	: 7,341	: 1,675 :	542 :	$\underline{\underline{4}}$ :	$=$ $\frac{\overline{4}}{4}$
1967 <u>3</u> /	: 6,362	: 3,537 :	671 :	<u> </u>	<u> </u>

See footnotes at end of table.

Period	Produc- tion	: Imports : :	: Exports : :	Apparent consump- tion <u>l</u> /	Ratio (percent) of imports to consumption
		Unit	value (per	ton) <u>5</u> /	
5-year average: 1936-40 1941-45 1946-50 1951-55 1956-60 1961-65 Annual: 1961 1962 1962	\$82 204 288 344 285 348 323 358 358 384	\$55 : 99 : 188 : 283 : 252 : 266 : 241 : 247 : 281 :	\$98 : \$98 : 203 : 313 : 413 : 319 : 368 : 359 : 348 : 359 : 348 : 359 :		<u>,</u> , , , , , , , , , , , , , , , , , ,
1964 1965 1966 <u>3</u> / 1967 <u>3</u> /	363 320 367 427	253 297 378 526	418 : 418 : 460 :	╪┝╪╞╪	+++++++++++++++++++++++++++++++++++++++

Table 1.--Broomcorn: U.S. production, imports for consumption, exports of domestic merchandise, and apparent consumption, 5-year averages 1936-65, and annual 1961-67--Continued

Production plus imports minus exports.

1/ Production plus imports minus exports.
2/ To be comparable with statistics on domestic production, statistics on imports should be adjusted to a raw-weight basis, i.e., they should be modified upward to take account of the inclusion of processed broomcorn. When the data on imports are adjusted to be comparable with those on domestic production, the quantity data for 1965-67 are as follows:

Year	Produc- tion	Imports	Exports	Apparent consumption	Ratio of imports to consumption
:	$\frac{\text{Short}}{\text{tons}}$	Short tons	$\frac{\text{Short}}{\text{tons}}$	: <u>Short</u> : <u>tons</u>	Percent
1965: 1966: 1967:	32,300 20,000 14,900	3,463 4,929 (est.)8,075	1,034 1,296 1,458	: 34,729 : 23,633 :(est.)21,517	10.0 20.9 (est.)37.5

 $\frac{3}{5}$  Preliminary.  $\frac{4}{5}$  Not meaningful.  $\frac{5}{5}$  Unit values for production are for the crop harvested in the year shown.

Source: Production compiled from official statistics of the U.S. Department of Agriculture; imports and exports compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Broomcorn: U.S. production, yield per acre, acreage planted, acreage harvested, and percentage abandoned, by States, 5-year averages 1936-65, and annual 1961-67

Period	Total	Oklahoma	Colorado	New : Mexico	Texas	Illinois	Kansas
			Productio	on (short	tons)		
5-year average: : 1936-40: 1941-45	37,860	11,300 12,700	4,200 14,080	5,980 7,640	4,180 4,960	10,040 4,100	2,140
1946-50	36,260 34,140	11,160 13,200	10,320	5,020 : 4,780 :	6,600	1,860 1,200	1,300
1956-60 1961-65	29,380 26,460	9,920 7,800	6,520 7,720	6,040 5,740	5,940 4,660	480 260	480 280
Annual: 1961 1962	25,700 26,100	7,000 7,400	8,300 8,400	5,700 5,900	4,200	200 300	300 300
1963: 1964: 1965:	27,400 20,800 32,300	8,400 6,400 9,800	7,500 4,600 9,800	8,100 : 2,900 : 6,100 :	2,800 6,400 6,100	300 300 200	300 200 300
1966: 1967	20,000 14,900	5,900 6,000	5,500 4,100	4,500 : 3,100 :	3,800 1,700	100 -	200 -
			Yield per	acre (pou	unds)		
5-year average:	072	070	ר בי	; ;		:	100
1936-40 1941-45 1946-50:	273 330 289 217	272 343 306	174 314 258	224 : 267 : 243 :	267 331 319	521 543 592	180 319 286
1956-60: 1961-65:	302 : 319 :	361 372	238 259	20) 275 320	320 350	602 806	200 291 320
Annual:	337	370	325	325	320	800	340
1962: 1963: 1964:	320 : 308 : 263 :	360 365 300	300 230 160	310 : 370 : 225 :	300 280 430	830 800 800	300 280 280
1965: 1966: 1967:	366 312 277	465 : 345 : 365 :	280 260 230	370 : 300 : 250 :	420 380 240	800 700	400 290
- · ·						:	

See source and note on following page.

Period	Total	Oklahoma	Colorado	New : Mexico :	Texas	Illinois	Kansas
			Acr	eage plante	id.		
5-year average: 1936-40 1941-45 1946-50 1950-55 1956-60 1961-65	374,000 306,200 273,700 333,380 236,400 185,860	115,400 80,200 80,800 102,000 65,000 45,400	78,200 : 96,200 : 88,000 : 87,400 : 69,000 : 70,000 :	63,000 : 64,800 : 46,200 : 58,800 : 48,800 : 37,200 :	36,200 30,800 42,800 73,000 48,200 30,600	39,000 15,800 6,300 3,680 1,740 600	42,000 18,400 9,600 8,500 3,660 2,060
Annual: 1961 1962 1963 1964 1965 1966 1967	165,600 180,100 199,900 187,500 196,200 145,800 131,000	42,000 44,000 49,000 47,000 47,000 45,000 45,000 38,000	: 56,000 : : 51,000 : : 75,000 : : 73,000 : : 85,000 : : 51,000 : : 44,000 :	36,000 : 39,000 : 45,000 : 32,000 : 34,000 : 32,000 : 29,000 :	29,000 33,000 28,000 33,000 20,000 21,000 20,000	500 700 700 400 300	2,100 2,400 2,200 1,800 1,800 1,500
	0 0 0	antendenselande zontenden er einen der einen einen einen einen der	Acre	age harves	ted		
5-year average: 1936-40 1941-45 1946-50 1951-55 1956-60 1961-65	276,800 278,400 249,900 274,780 195,840 165,680	84,200 73,800 73,400 90,000 56,800 42,000	45,800 : 88,600 : 80,400 : 68,200 : 54,800 : 60,000 :	53,600 54,800 39,800 46,200 43,200 35,200	31,000 29,600 40,800 59,200 36,200 26,000	39,000 15,000 6,300 3,680 1,620 600	23,000 16,600 9,200 7,500 3,220 1,880
Annual: 1961 1962 1963 1964 1965 1966 1967	: 152,500 163,000 177,700 159,100 176,100 127,700 108,000	38,000 41,000 46,000 43,000 42,000 34,000 33,000	51,000 56,000 56,000 58,000 70,000 42,000 36,000	35,000 38,000 44,000 26,000 33,000 30,000 25,000	26,000 25,000 20,000 30,000 29,000 20,000 20,000	500 700 700 700 400 300	2,000 2,300 2,000 1,400 1,700 1,400
	· : :		Percer	ntage aband	oned.		
5-year average: 1936-40 1941-45 1946-50 1951-55 1956-60 1961-65	26.0 9.1 8.7 17.6 17.2 10.9	27.0 8.0 9.2 11.8 12.6 7.5	: 41.4 : 7.9 : 8.6 : 22.0 : 20.6 : 14.3	14.9 15.4 13.9 21.4 11.5 5.4	: 14.4 : 3.9 : 4.7 : 18.9 : 24.9 : 15.0	5.1 5.1 6.9	45.2 9.8 4.2 11.8 12.0 8.7
Annual: 1961 1962 1963 1964 1965 1966 1967	7.9 9.5 11.1 15.1 10.2 12.4 17.6	9.5 6.8 6.1 8.5 6.7 15.0 13.2	: 8.9 : 8.2 : 13.3 : 20.5 : 17.6 : 17.6 : 18.2	2.8 2.4 2.4 18.8 2.9 5.0 4 13.8	: 10.3 : 24.2 : 28.6 : 9.1 : 3.3 : 4.8 : 30.0 :		4.8 4.2 9.1 22.2 5.6 6.7

Table 2.--Broomcorn: U.S. production, yield per scre. acreage planted, acreage harvested, and percentage abandoned, by States, 5-year overages 1936-65, and annual 1961-67--Continued

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

Note .-- Due to rounding, figures may not add to totals shown.

broomcorn farm, by selected districts, 1964-66

Item	1964	1965	1966
Total, all districts			
Average gross farm income from broomcorn	\$8,664 \$14,082 \$22,745 \$3,396	\$8,803 \$16,292 \$25,095 \$3,272	\$9,488 \$17,227 \$26,715 \$3,660
Ratio of average net farm income to average gross	: 14.9	13.0	13.7
Ratio of average gross farm income from broomcorn to average total gross farm incomepercent Average farm sizeacres Average area planted to broomcorn	: 38.1 : 971 : 177 : 27	: 35.1 : 919 : 209 : 39	35.5 929 192 29
Nectorn district 2/	:		e e e
Average gross farm income from broomcorn- Average gross farm income from other products- Average total gross farm income- Average net farm income 1/- Ratio of average net farm income to average gross farm income	: \$8,744 :\$12,685 :\$21,429 : \$3,191 : 14.9 : 40.8 - 1,294 - 244 : 30	: \$7,722 :\$16,167 :\$23,889 : \$2,286 : 9.6 : 32.3 : 1,184 : 294 : 47	: \$10,914 \$17,386 \$28,300 \$2,544 : 9.0 : 38.6 : 1,208 : 275 : 36
Lindsay, Okla., district Average gross farm income from broomcorn	: : -: \$8,07 <sup>1</sup> -:\$11,708 -:\$19,782 -: \$4,166	\$9,147 \$:\$9,147 \$:\$11,341 2:\$20,488 5:\$4,619	\$5,835 \$12,024 \$17,859 \$3,584
Ratio of average net farm income to average gross	: 21.3	: L: 22.5	20.1
Ratio of average gross farm income from broomcorn to average total gross farm incomepercent- Average total farm sizeacres Average area planted to broomcorndo Average quantity of broomcorn produced per farmtons-	40.8 : 33 <sup>1</sup> : 76	: 44.6 + : 366 3 : 92 1 : 2 <sup>1</sup>	5 : 32.7 5 : 388 2 : 77 4 : 16

See footnotes at end of table.

Item	1964	1965	1966
South Texas district Average gross farm income from broomcorn Average gross farm income from other products Average total gross farm income Ratio of average net farm income to average gross farm income	\$9,147 \$20,840 \$29,987 \$3,047 10.2 30.5 832 108	: : : : : : : : : : : : : :	\$9,879 \$23,025 \$32,904 \$6,877 20.9 20.9 30.0 796 100
Average quantity of broomcorn produced per farmtons	: 24	: 37	: 20

Table 3.--Financial experience and other data on the average U.S. broomcorn farm, by selected districts, 1964-66--Continued

 $\frac{1}{2}$  Net income before Federal and other income taxes.  $\frac{2}{2}$  Western Oklahoma, eastern Colorado, and New Mexico.

Source: Compiled from data submitted to the U.S. Tariff Commission by domestic broomcorn farmers.

Year	Oklahoma	Texas	Colorado	New Mexico
:	\$0.68	\$0.60	: \$0.79 :	\$0.66
1951:	.77 :	.66	: .87 :	.73
1952:	.80 :	.73	. 96 :	.76
1953:	.82 :	.70	: .94 :	•79
1954:	.81 :	.68	: .91 :	.72
<i>a</i> 0			:	
1955:	.81 :	.72	: .95 :	•77
1956:	.86 :	.72	: .95 :	•79
1957:	.88 :	· <b>·</b> 75	: 1.03 :	.82
1958:	.91 :	• 77	: 1.01 :	.80
1959:	• 94 ;	.80	: 1.05 :	.81
0 •			•	_
1960:	·97 :	.78	: 1.09 :	.85
1961:	1.01 :	.80	: 1.13 :	.87
1962:	1.02 :	.83	: 1.15 :	.89
1963:	1.07 :	.88	: 1.18 :	.91
1964:	1.08 :	.91	: 1.22 :	.92
	•		:	
1965:	1.11 :	.98	: 1.26 :	1.00
1966:	1.18 :	1.04	: 1.29 :	1.02
1967:	1.24 :	1.12	: 1.39 :	1.09
0 0	:		::	

Table 4.--Average farm wage rates (rate per hour without board or room) in broomcorn-growing States, 1950-67

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

: Year beginning July 1 : :	Production :	Season average price	: : Imports :
:	Tons :	Per ton	: <u>Tons</u>
1949:	45,700 :	\$214	200
1950:	27,700 :	367	6,294
1951:	34,500 :	465	4,888
1952:	31,800 :	436	4,559
1953:	32,000 :	<b>33</b> 5	3,859
1954	28,600 :	364	4,162
1955	43,800 :	223	286
1956	19,500 :	441	6,255
1957	42,000 :	238	2,074
1958	33,700 :	252	818
1959	30,700	258	287
1960	21,000	328	814
1961	25,700	323	1,636
1962	26,100	358	2,329
1963	27,400	384	4,104
1964	20,800	363	6,536
1965 <u>1</u> /	32,300	320	2,974
1966 <u>1</u> /	20,000	367	4,963
1967 <u>1</u> /	14,900	427	<u>2</u> / 7,500

Table 5.--Broomcorn: U.S. production, season average price to growers, and U.S. imports, years beginning July 1, 1949-67

1/ Beginning with the 1965 marketing year, increasing proportions of the imports entered in the form of processed broomcorn, which is equivalent to about  $l\frac{1}{2}$  times its weight in terms of raw broomcorn. The estimated percentages of processed broomcorn in imports are 10 percent in 1965, 25 percent in 1966, and 40 percent in 1967. The import figures adjusted to a raw-weight basis for these 3 marketing years would be as follows:

Tons

1965 <b>-</b>		- 3,122
1966-		- 5,584
1967	(est.)	- 9,000

2/ Estimate, based on a July-December total of 5,467.

Source: Production and price compiled from official statistics of the U.S. Department of Agriculture; imports compiled from official statistics of the U.S. Department of Commerce.

Source	1961	1962	1963	1964	1965	1966
		Qua	ntity (s	short ton	ns)	
United States Greece Italy Argentina Mexico Hungary All other Total	1,533 489 126 - 62 2,210	1,539 42 320 263 17 - 169 2,350	1,446 10 348 207 36 60 119 2,226	1,171 20 158 152 28 111 300 1,940	1,028 337 205 198 150 96 2,014	: 1,186 : 136 : 106 : 141 : 17 : 77 : 11 : 1,674
		Value	e (1,000	dollars	) <u>1</u> /	
United States Greece Italy Argentina Mexico Hungary All other Total	574 150 30 26 	585 12 122 60 7 - 49 835	626 5 147 54 14 27 40 913	494 6 76 39 15 29 95 754	437 145 45 59 37 28 751	: 544 70 48 34 6 37 5 744
	•	Uni	t value	(per ton	)	
United States Greece Italy Argentina Mexico Hungary All other Average	\$374 - 307 238 - 419 	\$380 286 381 228 412 - 290 355	\$433 500 422 261 389 450 336 410	\$422 300 481 257 536 261 317 388	\$425 430 220 298 247 292 373	\$459 515 453 241 353 481 455 444
1/ Converted from Can	• adian do	• llars to	United	States d	lollars.	

Table 6.--Broomcorn: Imports into Canada, by principal sources, 1961-66

Source: Compiled from official statistics of Canada, Trade of

Canada, Imports by Commodities.

		: : • Arc	Argen-		:		Yugo-	All	::	Total, all countries			
Month	Mexico	tina		Italy	Greece	: sla <sup>.</sup> : :	slavia	other		Quan- tity	: : :	Percentage distri- bution	
	Short	: Sł	nort	: Sho	rt :	Short	: Sh	ort :	Shor	5 :.	Short	:	
	tons	$\frac{1}{t}$	ons	: ton	s :	tons	: to	ns :	tons	- :	tons	;	
		:		:	- :		:		:	:		:	
January	: 81	:	23	:	2 :	: 9	:	- :	:	9:	124	:	3.1
February	: 58	:	8	:	12 :	2	:	5	: 1	4:	99	:	2.5
March	: 52	:	15	:	10 :	: 2	:	11	: 1	8:	108	:	2.7
April	: 47	:	2	:	8 :	: 2	:	6	: 1	4:	79	:	2.0
May	: 29	:	64	:	12 :	: -	:	5	: 1	2:	122	:	3.0
June	: 56	:	42	:	17 :	: 7	:	5	:	6:	133	:	3.3
July	: 301	:	30	:	12 :	: 6	:	5	: 1	4:	368	:	9.2
August	: 757	:	13	: 1	.05	: 6	:	2	: 3	8:	921	:	22.9
September	: 760	:	79	:	16	: -	:	-	:	- :	855	:	21.3
October	: 539	:	16	:	2	: 3	:	7	: 1	4.:	581	:	14.5
November	: 268	:	57	:	8	: 3	:	-	: 1	1:	347	:	8.6
December	: 219	:	17	:	18	: 6	:	-	: 2	1:	281	:	6.9
Total	: 3,167	:	366	: 2	222	: 46	:	46	: 17	1:	4,018	:	100.0
	:	:		:		:	:		<u>:</u>	:		:	
Source: C	ompiled f	rom	offic	ial s	stat	istics of	f the	U.S.	Depar	tme	ent of (	Cor	nmerce.

Table 7.--Broomcorn: U.S. imports for consumption, by principal sources and by months, averages for 1962-66

Period	Total, all countries	Mexico	Italy	Argen- tina	: Greece	All other	
		Quant:	ity (sho	rt tons)			
5-year average:	:			:	:	:	
1931-35:	1,211 :	24 :	: 169	: 440	: -	; 578	
1936-40:	311 :	5 :	: 2	: 222	: -	: 82	
1941-45:	1,492 :	38 :	: -	: 1,454	: -	: -	
1946-50:	: 3,400 :	: 380 :	924	: 1,950	: -	: 146	
1951-55:	; 4,183 :	: 1,254 :	1,810	: 404	: 232	: 483	
1956-60:	2,008 :	1,086	636	: 38	: 75	: 173	
1961-65:	3,450 :	2,689	: 189	: 443	: 52	: 77	
Annual:	: :	:	:	:	:	:	
1961:	: 1,586 :	: 934	: 340	: 282	: 22	: 8	
1962;	2,316 :	1,567	: 151	: 513	<b>:</b> 85	: -	
1963;	: 3,917 :	3,173	: 139	: 573	: -	: 32	
1964;	6,133 :	5,385	: 167	: 372	: 59	: 150	
1965 1/	; 3,298 ;	2,388	: 146	: 474	: 96	: 194	
1966 1/2/:	4,426 :	: 3,965	: 130	: 269	: 32	: 30	
1967 1/2/:	6,729	6,401	: 111	<u>: 95</u>	: 108	<u>: 14</u>	
	Value (1,000 dollars)						
5-vear average:			:	:	:	:	
1931-35	109	2	: 21	: 32	: -	: 54	
1936-40	17	: 3/	: 3/	: 12	: -	: 5	
1941-45	147	: 78	:	: 139	: -	: -	
1946-50	639 :	; 72	: 228	: 304	: -	: 35	
1951-55	1,183	254	: 629	: 98	: 63	: 139	
1956-60	507	: 185	: 245	: 6	: 21	: 50	
1961-65	: 917	: 677	: 99	: 92	: 20	: 29	
Annual:	•	•	:	:	:	:	
1961	: 383	: 184	: 140	: 50	: 6	: 3	
1962	: 571	: 377	: 77	: 91	: 26	: -	
1963	: 1,102	: 875	: 84	: 126	: -	: 17	
1964	: 1,550	: 1,273	: 106	: 88	: 26	: 57	
1965	: 981	<b>:</b> 675	: 86	: 104	: 41	: 75	
1966 2/	: 1,675	: 1,485	: 81	: 73	: 21	: 15	
1967 2/	: 3,537	: 3,356	<u>: 79</u>	<u>: 34</u>	: 56	: 12	

.

Table 8.--Broomcorn: U.S. imports for consumption, by principal sources, 5-year averages 1931-65, and annual 1961-67

See footnotes at end of table.

Period	Total, all countries	Mexico :	Italy	Argen- tina	Greece	All other
	:	Unit	; value	(per ton)		
5-year average: 1931-35 1936-40 1941-45 1946-50 1951-55 1956-60 1961-65 Annual: 1961 1962 1963	: ; ; ; ; ; ; ; ; ; ; ; ; ;	\$83:54 54:211:189:203:170:252:170:252:170:252:197:241:276:226	\$124 103 247 348 385 524 412 510 604 625	$\begin{array}{c} \vdots \\ \vdots \\ \vdots \\ 54 \\ \vdots \\ 96 \\ \vdots \\ 156 \\ \vdots \\ 243 \\ \vdots \\ 158 \\ 208 \\ \vdots \\ 177 \\ \vdots \\ 177 \\ 220 \\ 237 \end{array}$		\$93 5 \$93 5 61 5 240 5 288 2 289 5 377 5 375 5 31 5 380
1964 1965 1966 <u>2</u> / 1967 <u>2</u> /	293 297 378 526	: 283 : 375 : 524	: 589 : 623 : 712	: 219 : 271 : 358	427 656 519	: 387 : 500 : 857

Table 8.--Broomcorn: U.S. imports for consumption, by principal sources, 5-year averages 1931-65, and annual 1961-67--Continued

1/ To be comparable with statistics on domestic production, statistics on imports should be adjusted to a raw-weight basis, i.e., they should be modified upward to take account of the inclusion of processed broomcorn. Beginning in 1965 Mexico began shipping an increasing proportion of its broomcorn exports to the United States in processed form. The average loss of weight in processing is about one-third; hence processed broomcorn is equivalent, in terms of raw broomcorn, to about  $l_2^{\frac{1}{2}}$  times its weight. It is known that in recent years most imports from Argentina have been in raw form, and most of those from European countries, in processed form. Because of the small volume of entries from these countries only the total imports and imports from Mexico have been adjusted; the calculation of the adjustment, with the 1967 figures in col. 1 estimated on the basis of a January-November total of 6,294 tons, of which 5,966 tons came from Mexico, and the percentages in col. 2 based on data obtained from informed people in the industry, are as follows:

Item	(1) Imports as reported	(2) Estimated percent of imports processed	: (3) :Estimated : imports : of :processed :(1) x (2)	: (4) :Addition for : conversion :of processed :to raw basis : (3) x 0.5	: (5) Estimated imports, raw basis (1) + (4)
: All countries: : 1965: 1966: 1967: 1965: 1966: 1967:	Tons 3,298 4,426 6,729 2,388 3,965 6,401	: <u>Percent</u> : 10 : 25 : 40 : 10 : 25 : 40	<u>Tons</u> 330 1,006 2,692 2 239 2991 2,560	: <u>Tons</u> : 165 : 503 : 1,346 : 120 : 496 : 1,280	Tons 3,463 4,929 8,075 2,508 4,461 7,681

 $\underline{2}$ / Preliminary.  $\underline{3}$ / Less than \$500.

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

Market	1961	1962	1963	1964	1965	1966		
:	Quantity (short tons)							
Italy Venezuela United States France	- : 367 : 199 : 115 : 43 : 101 : 23 : 99 : 145 : - : 308 : 1,400 :	3,132 : 399 : 590 : 557 : 74 : 215 : 60 : 364 : 88 : - 229 : 5,708 :	924 : 805 : 607 : 166 : 184 : 184 : 83 : 66 : 231 : 55 : 168 : 3,360 :	2 : 973 : 358 : - : 64 : 108 : 35 : 30 : 156 : 88 : 104 : 1,918 :	3,316 1,216 514 283 91 170 48 75 17 66 268	4,149 1,134 250 833 53 217 62 864 99 33 1,108 8,802		
	Value (1,000 dollars)							
Italy Venezuela	91 35 23 14 20 5 17 28 - 60 - 293	508 92 98 103 23 43 12 58 16 - 45 998	190 206 130 37 29 44 17 14 14 46 12 39 764 it value	1/ 241 82 25 25 7 6 32 21 24 463 (per to	509 260 117 62 37 34 10 12 3 12 52 1,108	716 264 65 197 22 52 13 147 16 7 216 1,715		
Average <u>2</u> /	\$209	\$175	\$227	\$241	\$183	\$195		

Table 9.--Broomcorn: Exports from Argentina, by principal markets, 1961-66

1/ Less than \$500. 2/ There is little appreciable difference in unit value of exports to the various countries.

Source: Compiled from official statistics of Argentina, Comercio Exterior Argentina.