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# Seed Marketing Channels

For  
**GRASS and  
SMALL-SEEDED  
LEGUMES**

*In the North Central States,  
1954-55*

Marketing Research Report No. 158

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE - MARKETING RESEARCH DIVISION

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SEED MARKETING CHANNELS FOR GRASS AND SMALL-SEEDED LEGUMES  
In the North Central States, 1954-55

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SUMMARY

Almost half of the grass and small-seeded legume seed purchased by wholesale dealers in the North Central States was obtained from country buyers, shippers, and assemblers. Other wholesale dealers supplied nearly a third of these seeds, while one-fifth of the supply came directly from producers. Traveling company buyers and brokers acted as intermediaries for many wholesale firms in their purchasing operations.

Nearly all wholesalers clean these seeds. Many firms reclean seeds that have previously been cleaned. Approximately four-fifths of the alfalfa and clover seed handled was packed in bushel containers, while only two-fifths of the timothy seed was packed in containers of that size.

Of the total grass and small-seeded legume seed handled by wholesalers in 1954-1955, approximately 60 percent was seed of small-seeded legumes. Most of these seeds were sold to retailers, the next largest amount going to other wholesalers. By contrast, other wholesalers were the largest receivers of grass seeds, retailers taking the next largest amount.

Most of the grass and small-seeded legume seeds handled by wholesale dealers in the North Central States went to purchasers in these same States. However, substantial quantities of grass seeds were delivered to the Northeast, Southeast, and Great Plains Regions. Every region received some portion of the seeds.

A large volume of both certified alfalfa and perennial ryegrass seed was handled, along with certified seed of clovers, tall fescue, and Sudangrass. The volume of certified seed has increased in recent years and merchandising problems have arisen concerning the competition created by this seed.

INTRODUCTION

This report is designed to meet a need for basic information on seed marketing. Interest in the subject of seed marketing is shared by farmers, agricultural program leaders, and the seed trade. This interest is heightened by the needs for grass and legume seed associated with development of the Soil Bank program in agriculture.



Over the last half century, there has been a steady increase in production and use of grass and small-seeded-legume seed. This increase is at least partially attributable to better farm practices and greater emphasis on both grassland farming and soil conservation. The importance of these seeds is felt in every phase of agriculture, even though they are only a small portion of farm production expenses.

Grass and small-seeded-legume seeds are produced by farmers and the majority of them are consumed by farmers. In this respect, these seeds differ from many other crops, including many other seeds. Perhaps the major difference between most grass and small-seeded-legume seeds and many other farm crops is the relative degree of instability that prevails in the production of these seeds. While weather is always an important factor in agricultural production, it plays an especially significant role in determining the harvested acreage of many of these seeds. Their production depends, to a large extent, on weather conditions which may or may not provide a good hay or pasture crop. In years when weather is not favorable to hay or pasture production, many growers find alternative uses for these crops by producing seed. If the farmer is not a commercial seed producer, he will be affected by factors such as availability of harvesting equipment and adequate time for handling a seed crop. Since the seed may be ready for harvest during a period when his facilities and time are otherwise employed, the farmer would have to consider the advantages to be gained by harvesting the seed crop. A large proportion of grass and small-seeded-legume seed are produced as a result of such decisions and their production is not governed by either costs of production, alternative crops, or anticipated profits. For such reasons, the production of a large share of these seeds is not planned. In some areas, particularly the Midwest, fields are put into grass or small-seeded legumes as part of a regular crop rotation program. In this situation, the soil-building characteristics are usually the first consideration, and seed production second, regardless of its economic importance. These practices do much to intensify the fluctuations from year to year in the supply of many of these seeds.

Since all grass and small-seeded-legume seeds are produced by farmers, and the great majority are consumed by farmers, it must be recognized that there is a movement of these seeds within the local area. The local country seedsmen sell the seed back to farmers in the same or other rural areas. No data are available on the volume of seed moving between farmers, or on the quantities bought and sold by country elevators, farm implement dealers, and others. Such movement of seed would be difficult to measure and would vary considerably from one year to the next, depending upon the amount available in the immediate area. The practice of trading seed at the local level varies between areas in any given year. Also, practices that are utilized in a surplus-producing area are likely to be far different from those prevailing in a seed deficit area. The major criticism against local trading is that the purchaser often buys seeds about which he knows little. In many instances, these seeds lack proper or complete cleaning and blending which, in the absence of laboratory tests, results in a product that may be neither uniform in content nor high in quality. The reduction in price which the purchaser receives may be out of line with the quality of the seed.

Several events have taken place in recent years which have tended to minimize local trading in grass and small-seeded-legume seeds. One is the use of specialized production areas for many of the seeds, notably, alfalfa in California and ryegrass in Oregon. These areas offer a constant supply of these seeds, in marked contrast with the erratic production of many other grass and small-seeded-legume seeds. Another factor which has cut into local trading of grass and small-seeded-legume seeds is the rising importance of certified seed. Because of the exacting requirements of seed certification, many farmers cannot or do not choose to produce certified seed. Both specialization in the production of and increased demand for many grass and small-seeded-legume seeds have made the farmer more dependent on commercial seed dealers.

Because of the past and current importance of wholesalers of grass and small-seeded-legume seeds, it was felt that a survey covering this segment of the trade would yield the greatest amount of basic information on the marketing of these seeds. 1/ Wholesale dealers depend on the farm for both their material and their markets. These dealers assemble seeds from producing areas; then select, test, blend, process, and distribute the seeds into consuming areas. Directing the flow of seeds is an important function. Both the quality and uniformity of seed handled by wholesale dealers are regulated by the individual State seed laws and also by the Federal Government when the seed moves in interstate commerce. Changes in production and marketing practices, particularly those coming from geographical specialization and an extension of the use of certified seeds, come to focus at the wholesale level. It is at this point in the marketing channel that competitive practices begin to emerge in the form of new trade channels to circumvent the wholesaler, or a shifting of business among existing firms.

### Objective

The purpose of this report is to describe (1) the marketing channels and methods utilized by wholesale dealers in handling certified and noncertified seeds of different grasses and small-seeded legumes, and (2) the functions of and services rendered by wholesale dealers of these seeds. At present, available market information is limited to that obtained by the commercial seedsman in his movements among retailers and farmers, the market news report distributed by State colleges, and the Crop Reporting Board of the United States Department of Agriculture. Shifts in production areas and the possibility of resulting changes in distribution patterns require a complete knowledge of marketing channels, methods, and areas of consumption, if seeds are to be moved efficiently from the farmer-producer to the farmer-consumer at prices that are reasonable to producers, handlers, and consumers. 2/

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1/ A similar study was conducted in the 12 Northeastern States during 1956. Information on this survey is available from either A. A. Johnson, Cornell University, or H. R. Fortmann, Pennsylvania State University.

2/ Recently, there has been increased interest in seed marketing resulting from the inception of the Soil Bank. Naturally the operation of this program and the degree of participation in it will affect the commercial seed trade. However, at the time this study was undertaken, the Soil Bank had not been enacted and information on the possible effects of such a program was not available.



## Methodology

This survey is based upon data obtained from 59 wholesale grass and small-seeded legume seed dealers located in the States of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, and the eastern portions of North Dakota, South Dakota, Nebraska, and Kansas.

This region, commonly called the North Central, was chosen because approximately 36 percent of the known wholesale dealers handling these seeds are found there, and a majority of the most important firms operate or have headquarters there. More than one-third of the principal seeds in question are produced in the North Central States. Also, this region is the most important agricultural section in the country and its consumption exceeds that of any other area.

For sampling purposes, we visited each of the 27 larger wholesalers, estimated to be handling 5 million pounds or more of grass and small-seeded-legume seed. Also, one-sixth of the smaller wholesalers--those estimated to be handling less than 5 million pounds of these seeds per year--were visited, with selection of these on a random basis.

This approach provided a substantial number of firms in different size groups and at the same time minimized the amount of travel required. Without data from firms of all sizes, it would not have been possible to determine whether differences in marketing channels and practices existed between wholesale dealers of varying sizes. In order to determine industry weighted averages in the region, it was necessary to expand the data to adjust for the differences in the proportion of firms sampled in each size group. 3/

Grass seed, as defined in this report, includes the principal grass seeds (timothy, Kentucky bluegrass, ryegrass, orchardgrass, brome grass, Sudan grass, and tall fescue), as well as redtop, and other fescues. The seven principal grass seeds accounted for more than four-fifths of the total grass seed covered in this study. Small-seeded legume seed includes alfalfa, red clover, alsike clover, sweetclover, Ladino clover, white clover, and lespedeza. Together, these seeds comprised almost all of the small-seeded-legume seed handled.

## Description of firms in study

Fifty-nine grass and small-seeded-legume seed wholesale firms completed schedules that could be used in this report. Forty-eight of these firms handled all types of seeds, but only 16 devoted their entire business to seeds. The other 32 firms handled related products in addition to their seed business. Only 11 firms handled no seeds other than grasses and small-seeded legumes. All of these 11 firms handled other items. Grains and feeds were handled by 20 firms, while fertilizers and chemicals were also frequently mentioned as related items.

While only 6 of the firms derived all of their business from grass and small-seeded-legume seed, 25 wholesalers obtained 75 to 99 percent of their

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3/ The industry weighted averages shown in the report cannot be computed from the data given in the tables because of difference in sampling rates.



gross receipts from these 2 categories of seeds, with an additional 17 firms deriving 50 to 74 percent of their receipts from this source (table 1). Of the 11 firms deriving less than 50 percent of their business from grass and legume seed, only 4 obtained less than one-quarter of their gross receipts from these seeds.

As the size of the wholesale firms increased, there was a tendency to specialize in the handling of grass seed and small-seeded-legume seed. Table 1 shows the proportion of seed volume comprised of grass seed and legume seed in each volume group. While the proportion of small-seeded-legume seed is greater than the proportion of grass seed in every volume group, it never reaches twice the amount of grass seed.

Table 1.--Wholesale seed firms receiving specified percentage of gross receipts from grass and small-seeded-legume seed, and proportion of total volume composed of each class of seed, by volume of seed handled, 1954-55

| Pounds of seed handled | Firms receiving |               |               |               |             | Total firms | Proportion of total volume |         |         |
|------------------------|-----------------|---------------|---------------|---------------|-------------|-------------|----------------------------|---------|---------|
|                        | 0-24 percent    | 25-49 percent | 50-74 percent | 75-99 percent | 100 percent |             | Grass                      | Legume  | Total   |
|                        | Number          | Number        | Number        | Number        | Number      | Number      | Percent                    | Percent | Percent |
| Under 1,000,000        | 3               | 6             | 6             | 4             | 1           | 20          | 38                         | 62      | 100     |
| 1,000,000 - 2,999,999  | 0               | 1             | 4             | 6             | 1           | 12          | 36                         | 64      | 100     |
| 3,000,000 - 4,999,999  | 1               | 0             | 5             | 3             | 2           | 11          | 41                         | 59      | 100     |
| 5,000,000 - 14,999,999 | 0               | 0             | 1             | 10            | 2           | 13          | 35                         | 65      | 100     |
| 15,000,000 and over    | 0               | 0             | 1             | 2             | 0           | 3           | 46                         | 54      | 100     |
| Total                  | 4               | 7             | 17            | 25            | 6           | 59          | 40                         | 60      | 100     |

## PURCHASING

### Source of supply

The most important source of grass and small-seeded-legume seed for the wholesaler is the country buyer or assembler (table 2). Except for the 2 smallest volume groups, this source is the largest single supplier of these seeds. Even in the second smallest group, 1,000,000 to 2,999,999 pounds, purchases from country buyers and assemblers account for one-third of the purchases made by firms.

Country buyers, shippers, and assemblers represent the first point of ownership transfer for many of these seeds. These dealers are a ready market for seed brought in by farmers; they have a primary function in determining through which marketing channels seeds will move. After either a visual inspection or a laboratory analysis, the dealer will make an offer, which, if acceptable to the farmer, is paid in cash or in a specified amount of cleaned seed ready for planting.

On the average, purchases direct from growers accounted for approximately one-fifth of total purchases. While the smallest volume-group obtained the largest proportion of seed from growers, plants in the largest volume-group, 15,000,000 pounds and over, were the next largest users of this source. Purchases from wholesalers accounted for more than two-fifths of total purchases made by firms in the two smallest volume-groups since many of these firms were buying seed from the larger dealers. A large part of the purchases made from wholesalers by wholesalers handling 5,000,000 pounds and over per year were from grower-processors who function as wholesale dealers.

A large proportion of the purchases made by wholesale dealers handling 5,000,000 pounds and over per year from wholesale dealers and processors are handled through brokers. Brokers may be used as intermediaries when purchasing from other sources, notably importers or foreign seed dealers, but usually they are most prominent in transactions within the wholesale trade.

The purchasing channels used by wholesale firms handling grass and small-seeded-legume seeds are shown in figure 1. Sales outlets and the importance of each are also shown. The monthly distribution of receipts of the principal seeds by wholesale dealers is given in appendix tables 20 and 21.

None of the wholesale firms produced grass seed or small-seeded-legume seed on company-owned or operated farms. The areas from which wholesale dealers obtained seeds in 1954 are discussed in the appendix.

### Relationship of country agents to wholesale firms

While country buyers and assemblers are the largest source of seeds from which wholesale firms buy, the majority of them are not owned by or affiliated with the wholesale firms. The continual shifting of production areas is certainly a partial explanation of why wholesale dealers have not attempted to establish themselves in this primary assembly operation. Only 11.5 percent of the seed purchased from country buyers and assemblers is obtained from buyers

Table 2.--Distribution of purchases of grass and small-seeded-legume seeds by sources of supply and volume-group

| Pounds of seed:<br>handled      | Country :       |                                       | Other :        |                | Foreign :      |                | Government:    |                | Not :          |                | Total          |
|---------------------------------|-----------------|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                                 | Total<br>volume | buyer,<br>shipper, or:<br>assembler : | Grower         | wholesalers:   | Percent        | Percent        | Percent        | Percent        | Percent        | Percent        |                |
|                                 | <u>Pounds</u>   | <u>Percent</u>                        | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> | <u>Percent</u> |
| Under                           |                 |                                       |                |                |                |                |                |                |                |                |                |
| 1,000,000                       | 6,755,314       | 17.1                                  | 35.8           | 47.1           | 0.0            | 0.0            | 0.0            | 0.0            | 0.0            | 0.0            | 100.0          |
| 1,000,000 -<br>2,999,999        | 24,553,286      | 34.0                                  | 20.6           | 43.5           | 0.9            | 0.4            | 0.0            | 0.6            | 0.0            | 0.6            | 100.0          |
| 3,000,000 -<br>4,999,999        | 40,063,341      | 53.9                                  | 16.0           | 27.3           | 2.0            | 0.0            | 0.0            | 0.8            | 0.0            | 0.8            | 100.0          |
| 5,000,000 -<br>14,999,999       | 111,488,501     | 46.3                                  | 14.9           | 36.8           | 0.6            | 0.7            | 0.7            | 0.7            | 0.7            | 0.7            | 100.0          |
| 15,000,000<br>and over          | 142,133,149     | 52.5                                  | 26.4           | 13.2           | 4.2            | 3.7            | 3.7            | 0.0            | 0.0            | 0.0            | 100.0          |
| Industry<br>weighted<br>average |                 | 46.1                                  | 20.2           | 30.2           | 1.9            | 1.1            | 1.1            | 0.5            | 0.5            | 0.5            | 100.0          |

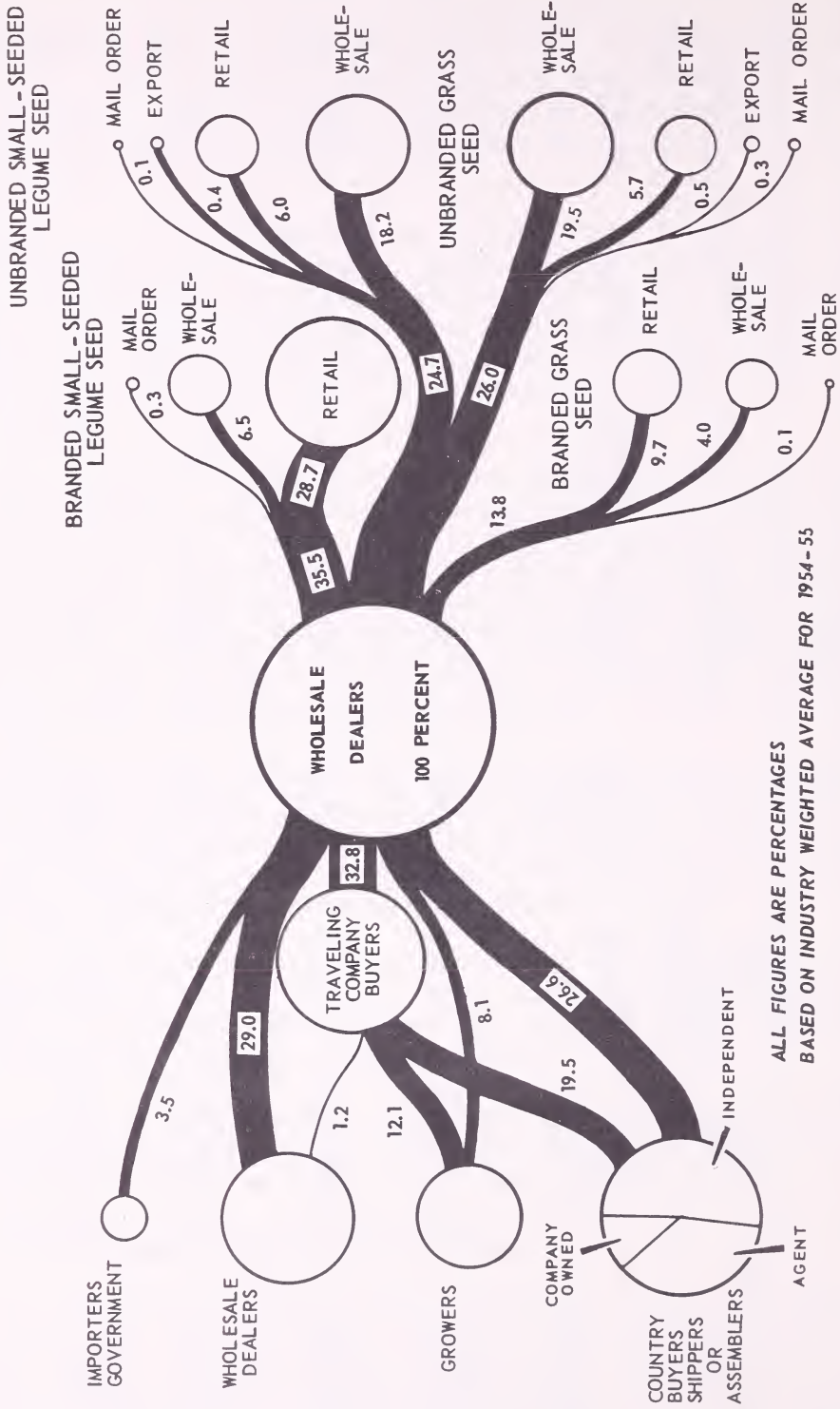


# MARKETING CHANNELS FOR GRASS AND SMALL-SEEDED LEGUME SEED

Wholesale Dealers in the North Central Region

PURCHASES

SALES



ALL FIGURES ARE PERCENTAGES  
BASED ON INDUSTRY WEIGHTED AVERAGE FOR 1954-55

Figure 1

and assemblers that are owned by wholesale seed firms (table 3). Firms in volume groups of 3,000,000 pounds and over purchased almost the same amount from independent country buyers and assemblers as from country buyers and assemblers who were acting as agents for the wholesale firm. Wholesale firms in volume groups of less than 3,000,000 pounds obtained almost all of their seed from independent country buyers and assemblers.

Table 3.--Distribution of purchases from country buyers, shippers, and assemblers by relationship to wholesale dealers and volume groups

| Pounds of seed handled    | Country buyers, shippers, and assemblers |               |             |         |
|---------------------------|--|---------------|-------------|---------|
|                           | Acting as agents                         | Company-owned | Independent | Total   |
|                           | Percent                                  | Percent       | Percent     | Percent |
| Under 1,000,000           | 11.0                                     | 0.0           | 89.0        | 100.0   |
| 1,000,000 - 2,999,999     | 11.5                                     | 0.0           | 88.5        | 100.0   |
| 3,000,000 - 4,999,999     | 44.6                                     | 12.4          | 43.0        | 100.0   |
| 5,000,000 - 14,999,999    | 34.7                                     | 11.3          | 54.0        | 100.0   |
| 15,000,000 and over       | 42.4                                     | 17.8          | 39.8        | 100.0   |
| Industry weighted average | 36.4                                     | 11.5          | 52.1        | 100.0   |

#### Traveling company buyers

Almost one-third of the seed obtained by wholesale seed firms was purchased by traveling company buyers (table 4). Generally, as the size of the firm increased, greater proportions of seed were purchased by these buyers, with firms in the largest volume-group acquiring over twice as much seed through traveling company buyers as firms in the smallest volume-group. Buyers working for firms in the 3 largest volume-groups acquired one-half to three-fourths of their purchases from country buyers and assemblers, while those employed by firms in the 2 smallest volume-groups obtained the principal part of their seeds direct from farmers. Purchases of seed by traveling company buyers from wholesalers exceeded 5 percent only in the largest volume group.

Table 4.--Importance of traveling company buyers and distribution of buyers' purchases by source of supply and volume-groups

| Pounds of seed handled    | Seed purchased by traveling company buyers |                                    |  |  |         |         |
|---------------------------|--|------------------------------------|--|--|---------|---------|
|                           | Quantity                                   | Proportion of total seed purchased | Proportion of purchases from Country buyers, Growers, shippers, and assemblers | Proportion of purchases from Wholesalers | Total   |         |
|                           | Pounds                                     | Percent                            | Percent  | Percent                                  | Percent | Percent |
| Under 1,000,000           | 1,403,340                                  | 20.8                               | 67.0   | 28.4                                     | 4.6     | 100.0   |
| 1,000,000 - 2,999,999     | 6,729,173                                  | 27.4                               | 55.2   | 42.8                                     | 2.0     | 100.0   |
| 3,000,000 - 4,999,999     | 10,534,154                                 | 26.3                               | 25.0   | 75.0                                     | 0.0     | 100.0   |
| 5,000,000 - 14,999,999    | 40,013,325                                 | 35.9                               | 26.9   | 71.5                                     | 1.6     | 100.0   |
| 15,000,000 and over       | 66,815,678                                 | 47.0                               | 39.8   | 52.0                                     | 8.2     | 100.0   |
| Industry weighted average | ---  | 32.8                               | 36.9   | 59.5                                     | 3.6     | 100.0   |

#### Transportation to plants

While seeds are purchased from many sources, the largest amounts are hauled into wholesale seed houses by railroad and contract motor truck carriers. Use of wholesalers' own trucks is large only in plants handling less than 3,000,000 pounds of seeds per year, while delivery in farmer trucks is sizeable only in plants handling under 1,000,000 pounds of seed per year (table 5).

Deliveries to wholesale firms by railroad were never less than one-fifth of total deliveries, while contract or licensed motortruck carriers accounted for approximately one-third of them in every volume-group except the 15,000,000 pounds and over group. Deliveries by other wholesalers, country buyers, assemblers, and shippers never reached 5 percent in any volume group.

#### Purchasing practices and seed testing

Forty-five of the 57 wholesale firms reporting on this subject did not use advance growing contracts in their purchase of seeds; 8 firms, all handling over 3,000,000 pounds per year, reported they used these contracts. Half of the firms reporting use of advance growing contracts said they were necessary to insure stocks of new varieties of grasses and legumes. Without contracts farmers would not produce sufficient quantities of new and specialized seeds.



Table 5.--Distribution of grass and small-seeded-legume seeds delivered to wholesale firms by type of carrier and volume groups

| Pounds of seed handled    | Rail    | Company truck | Contract or licensed truck | Farmers' truck | Other <sup>1/</sup> | Total   |
|---------------------------|---------|---------------|----------------------------|----------------|---------------------|---------|
|                           | Percent | Percent       | Percent                    | Percent        | Percent             | Percent |
| Under 1,000,000           | 20.5    | 26.8          | 33.0                       | 19.7           | 0.0                 | 100.0   |
| 1,000,000 - 2,999,999     | 37.2    | 20.3          | 34.9                       | 5.3            | 2.3                 | 100.0   |
| 3,000,000 - 4,999,999     | 39.7    | 9.1           | 38.1                       | 8.9            | 4.2                 | 100.0   |
| 5,000,000 - 14,999,999    | 51.4    | 14.5          | 30.8                       | 2.9            | 0.4                 | 100.0   |
| 15,000,000 and over       | 76.4    | 1.6           | 18.8                       | 1.2            | 2.0                 | 100.0   |
| Industry weighted average | 48.8    | 11.5          | 31.4                       | 5.9            | 2.4                 | 100.0   |

<sup>1/</sup> Wholesalers, country assemblers, and shippers' trucks.

Most of the others used the advance contract only when there appeared to be a small supply of a particular seed available; however, one firm said that growers prefer a fixed price and hence a contract. Several firms stated they had previously used these contracts but they did not work well.

Most wholesale firms do not vary their payment practices between different types of seeds. Thirty-three of the 36 firms reporting on payment practices said that they used the same practices with each type of seed. Three firms varied their payment practices, one dealer tested all sweetclover for germination before making payment, and two other dealers bought some seeds on test and others on appearance but did not specify which seeds were tested.

Many firms made final payments for noncertified seeds prior to purity and germination tests. Twenty of the 46 wholesale houses reporting on this practice stated that results of these tests were not obtained prior to settlement, while 21 firms said that final payment was sometimes held up until purity and germination tests were completed. Only 5 firms said that final payments were always held up until purity and germination tests were completed.

Fifteen of the 41 firms reporting on use of purity and germination tests stated that they never made tests prior to final payment for certified seeds, while only 8 firms reported that they sometimes made final payments after these

tests. Eighteen of the firms said they always made final payment after these tests.

Testing of grass and legume seed was carried out by wholesale seedsmen through several testing agencies. Most firms handling less than 1,000,000 pounds of seed per year used State laboratories, while a smaller number of these firms used commercial laboratories. Small wholesalers operating their own testing facilities generally tested less than three-fourths of their seed. Most firms handling 1,000,000 pounds and over tested seed in their own laboratories. However, these firms tested only about 90 percent of the seed in their own laboratories and had the remainder tested by either commercial or State laboratories, or by both. One firm in this volume-group reported that its own laboratory tested all seed for purity, while commercial testing facilities were used for germination tests.

#### Changes in purchasing methods and practices

Approximately 70 percent of the reporting dealers stated that there had been no significant changes in purchasing methods and practices since 1945. The remaining 30 percent who indicated that changes had taken place gave a wide variety of opinions on the subject. Approximately 92 percent of the dealers surveyed expressed some opinion on changes that had taken place in purchasing methods and practices since 1945. The only changes in purchasing methods and practices that were mentioned more than once were those brought on by the shift of alfalfa production to the Far West. Dealers felt that because of this shift less use was made of local facilities than in the past. One firm reported that more seed was bought on description rather than on a sample basis, while another said that high freight rates had limited the area in which they could profitably acquire seed. Purchasing seed earlier in the season, less use of traveling company buyers, and more wholesalers buying direct from growers were other changes in purchasing methods and practices that dealers felt had taken place since 1945.

### PROCESSING

Most wholesale dealers stated that the source from which seed was obtained did not affect the amount of processing that the seed required. However, those firms reporting use of additional processing operations to handle seed from certain sources said that growers' production practices and threshing methods have the greatest effect on the number of processing operations required.

While all dealers engaged in cleaning seeds make a visual inspection of the seed prior to actual cleaning, most firms also make additional mechanical or physical checks. Test screens and sieves were commonly used, while many firms had a seed analyst check each lot. Many firms make a complete purity and germination test prior to cleaning, while others check only for weed content.

#### Cleaning

Cleaning of seed is one of the major processing functions performed by wholesale dealers. Fifty-one of the 58 reporting dealers cleaned one or more of the principal grass seeds and small-seeded-legume seeds. Six of the 7 firms

which do not clean seed handle less than 1,000,000 pounds of seed a year, the other firm falling in the 1,000,000 to 2,999,999 pound per year category.

Table 6 shows the number of firms cleaning specified proportions of the principal legume and grass seeds. Forty-seven percent of the wholesale dealers cleaning one or more legumes clean over two-thirds of the legume seeds they handle; 20 percent clean one-third to two-thirds, and 33 percent clean less than one-third of their total volume. A larger proportion of dealers were cleaning over two-thirds of their red clover seed and lespedeza seed than were cleaning similar quantities of the other small-seeded legumes. Dealers cleaning ladino clover seed usually cleaned less than one-third of this seed.

Fifty-five percent of the wholesale dealers cleaning one or more grass seeds cleaned over two-thirds of their grass seed. Twenty-three percent of these firms clean one-third to two-thirds of their grass seed, while 22 percent clean less than one-third. Most firms cleaning timothy seed cleaned over two-thirds of this seed, as did firms cleaning Kentucky bluegrass.

Recleaning

Recleaning of seeds that have previously been cleaned is an extra processing function that many seeds require. Often seeds are purchased as clean seed and yet require additional cleaning.

Forty-five percent of the wholesale houses found it necessary or practical to reclean small-seeded-legume seed. Table 6 shows the number of firms recleaning each type of small-seeded-legume and grass seed. There was little variation in the proportion of firms recleaning individual legumes. Forty-seven percent of the dealers recleaned less than one-third of their cleaned seed, while 32 percent recleaned over two-thirds of their clean seed. The remaining 21 percent recleaned one-third to two-thirds. Recleaning of clean grass seed was done by 39 percent of the wholesalers. Thirty-seven percent of the dealers recleaned over two-thirds of their clean grass seed, 28 percent recleaned one-third to two-thirds, and 35 percent recleaned less than one-third. There was considerably more variation between different types of grass seed in the practice of recleaning clean seed than in legume seeds. While only a small proportion of dealers were recleaning Kentucky bluegrass, a substantial number were recleaning timothy and tall fescue.

Packaging

Bagging and rebagging of seed is another of the major processing functions performed by wholesale dealers. Over 81 percent of the alfalfa and clover seeds sold by wholesalers were put up in bushel bags made of osnaburg material. These two seeds were grouped together because they are approximately the same size, have the same bushel weight, and are similarly packaged by the seed trade. The distribution of alfalfa and clover seed packaged in each size container and the type of bagging material most frequently used is shown by volume-groups in table 7. Use of the bushel-size container made of osnaburg material was universal and never accounted for less than 72.9 percent of total packaged alfalfa and clover seed. Firms in the under 1,000,000 pounds, 3,000,000 to 4,999,999 pounds, and 15,000,000 pounds and over volume-groups packaged 13.0 to 24.4 percent of these seeds in 2 1/2-bushel bags made of seamless cotton.



Table 6.--Number of wholesale dealers cleaning and recleaning specified amounts of small-seeded-legume seeds and grass seeds

| Seed          | Total<br>plants<br>cleaning | Plants cleaning  |              |             | Plants recleaning |              |             | Total<br>plants<br>recleaning |
|---------------|-----------------------------|------------------|--------------|-------------|-------------------|--------------|-------------|-------------------------------|
|               |                             | Less<br>than 1/3 | 1/3 -<br>2/3 | Over<br>2/3 | Less<br>than 1/3  | 1/3 -<br>2/3 | Over<br>2/3 |                               |
| Alfalfa       | 35                          | 15               | 10           | 10          | 5                 | 5            | 4           | 14                            |
| Red clover    | 44                          | 6                | 4            | 34          | 14                | 3            | 6           | 23                            |
| Alsike clover | 25                          | 11               | 7            | 7           | 4                 | 2            | 5           | 11                            |
| Sweetclover   | 32                          | 12               | 8            | 12          | 6                 | 2            | 5           | 13                            |
| Ladino clover | 7                           | 6                | 1            | 0           | 1                 | 1            | 1           | 3                             |
| White clover  | 10                          | 5                | 3            | 2           | 2                 | 0            | 2           | 4                             |
| Lespedeza     | 16                          | 1                | 1            | 14          | 4                 | 3            | 1           | 8                             |
| Timothy       | 43                          | 4                | 8            | 31          | 8                 | 5            | 5           | 18                            |
| Ky. bluegrass | 12                          | 3                | 0            | 9           | 2                 | 0            | 0           | 2                             |
| Ryegrass      | 2                           | 1                | 1            | 0           | 0                 | 1            | 1           | 2                             |
| Orchardgrass  | 10                          | 3                | 2            | 5           | 1                 | 1            | 4           | 6                             |
| Bromegrass    | 18                          | 3                | 6            | 9           | 1                 | 2            | 2           | 5                             |
| Sudangrass    | 11                          | 5                | 4            | 2           | 1                 | 1            | 0           | 2                             |
| Tall fescue   | 13                          | 5                | 4            | 4           | 2                 | 2            | 4           | 8                             |

Only in the 15,000,000 pounds and over group were any sizeable quantities of alfalfa and clovers packed in 100- to 112-pound bags.

As in the case of alfalfa and clovers, although to a lesser extent, most timothy is packaged in bushel-size bags of osnaburg material (table 8). The variation between firms in different volume-groups in the proportion of timothy seed packaged in bushel bags was greater than in the case of alfalfa and clovers. Twenty-four percent of the timothy packaged by firms handling less than 1,000,000 pounds per year was put in bushel bags, while 82.2 percent of the firms in the 5,000,000 to 14,999,999 pounds per year group used this size container. Firms in the smallest volume-group bagged most of their timothy seed--46.1 percent--in 100- to 112-pound bags. Wholesale dealers in the

Table 7.--Percentage distribution of sales of alfalfa and clover seeds by size of container, principal bagging material and volume groups

| Pounds handled            | 100-112 pounds |            | 1/2 bushels |           | 2 bushels |           | 1 bushel |           | Other |           | Total |          |       |
|---------------------------|----------------|------------|-------------|-----------|-----------|-----------|----------|-----------|-------|-----------|-------|----------|-------|
|                           | Pct.:          | Material:  | Pct.:       | Material: | Pct.:     | Material: | Pct.:    | Material: | Pct.: | Material: |       |          |       |
| Under                     |                |            |             |           |           |           |          |           |       |           |       |          |       |
| 1,000,000                 | 1/             | 3,519,834  | 2.1         | Cotton    | 18.7      | Seamless  | 1.7      | Seamless  | 73.9  | Osnaburg  | 3.6   | Seamless | 100.0 |
| 1,000,000 -               |                |            |             |           |           |           |          |           |       |           |       |          |       |
| 2,999,999                 |                | 15,191,751 | 0.2         | Osnaburg  | 5.9       | Seamless  | 1.2      | Osnaburg  | 92.5  | Osnaburg  | 0.2   | Osnaburg | 100.0 |
| 3,000,000 -               |                |            |             |           |           |           |          |           |       |           |       |          |       |
| 4,999,999                 | 2/             | 21,636,109 | 1.4         | Cotton    | 24.4      | Seamless  | 0.0      | ---       | 72.9  | Osnaburg  | 1.3   | Osnaburg | 100.0 |
| 5,000,000 -               |                |            |             |           |           |           |          |           |       |           |       |          |       |
| 14,999,999                |                | 66,923,825 | 4.4         | Cotton    | 2.3       | Seamless  | 0.2      | Seamless  | 93.1  | Osnaburg  | 0.0   | ---      | 100.0 |
| 15,000,000 and over       |                | 69,546,642 | 13.6        | Osnaburg  | 13.0      | Seamless  | 0.0      | ---       | 73.4  | Osnaburg  | 0.0   | ---      | 100.0 |
| Industry weighted average |                |            | 4.3         |           | 13.2      |           | 0.4      |           | 81.5  |           | 0.6   |          | 100.0 |

1/ Data are from only 16 wholesale dealers.

2/ Data are from only 10 wholesale dealers.

Table 8.--Distribution of sales of timothy by size of container and volume-group

| Pounds handled            | Timothy   | 100-112 pounds   |                  |                  | 2 1/2 bushels    |                  |                  | 1 bushel         |                  |                  | Other | Total |
|---------------------------|-----------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------|-------|
|                           |           | Percent:Material | Percent:Material | Percent:Material | Percent:Material | Percent:Material | Percent:Material | Percent:Material | Percent:Material | Percent:Material |       |       |
| Under 1,000,000           | 954,515   | 46.1             | Cotton           | 26.2             | Seamless         | 24.0             | Osnaburg         | 3.7              | Seamless         | 3/               | 100.0 |       |
| 1,000,000 - 2,999,999     | 2,815,733 | 6.2              | Seamless         | 12.6             | Seamless         | 41.2             | Osnaburg         | 40.0             | Cotton           | 3/               | 100.0 |       |
| 3,000,000 - 4,999,999     | 5,364,306 | 25.0             | Seamless         | 42.5             | Seamless         | 32.2             | Osnaburg         | 0.3              | Osnaburg         |                  | 100.0 |       |
| 5,000,000 - 14,999,999    | 9,381,695 | 4.2              | Seamless         | 9.6              | Seamless         | 82.2             | Osnaburg         | 4.0              | Seamless         | 3/               | 100.0 |       |
| 15,000,000 and over       | 6,490,900 | 45.4             | Osnaburg         | 9.5              | Seamless         | 45.1             | Osnaburg         | 0.0              | ---              |                  | 100.0 |       |
| Industry weighted average |           | 21.4             |                  | 25.9             |                  | 42.6             |                  | 10.1             |                  |                  | 100.0 |       |

1/ Data are from only 14 wholesale dealers.

2/ Data are from only 10 wholesale dealers.

3/ Packed principally in 125-pound bags.



largest volume-group put out approximately the same amount of timothy seed in 100- to 112-pound bags as in bushel bags--45 percent. Only in the 1,000,000 to 2,999,999 pound per year volume-group was any sizeable amount--40 percent--of timothy seed sold in 125-pound bags.

Over 96 percent of the lespedeza seed packaged by dealers handling over 1,000,000 pounds of seed a year was put in 100- to 112-pound bags, principally of burlap material, with the remaining 4 percent going into 50-pound bags. However, firms in the smaller volume-group put only 21 percent of their lespedeza in 100- to 112-pound bags, principally of jute material, while 79 percent of their seed was packaged in 50-pound bags, principally of burlap material. Approximately 86.5 percent of the lespedeza seed handled by wholesalers in the North Central Region was packed in 100- to 112-pound bags, with the remaining 13.5 percent going into 50-pound bags.

Dealers packed 92 percent of their bromegrass seed in 50-pound bags with an additional 8 percent going into 100- to 112-pound bags. There was little difference in the proportion of bromegrass packed in 50-pound bags between different volume-groups. The proportion of bromegrass packed in 100- to 112-pound bags exceeded 9 percent only in the 3,000,000 to 4,999,999 pounds per year volume-group where a figure of 16 percent was attained.

Tall fescue and orchardgrass seed, like both bromegrass and lespedeza, is packed principally in either 100- to 112-pound or 50-pound bags. Fifty-five percent of the dealers packed these seeds in 100- to 112-pound bags, with a low of 32 percent in the 1,000,000 to 2,999,999 pound volume-group, and a high of 74 percent in the 15,000,000-pounds and over group. Use of the 50-pound bag for bromegrass varied from a low of 26 percent in the largest volume-group to a high of 68 percent in the 1,000,000 to 2,999,999 pound volume-group and averaged 45 percent for all dealers. Tall fescue and orchardgrass were grouped together since they are normally handled in the same manner for bagging purposes.

#### Reprocessing processed seed

As seed in storage may drop in germination, it is often blended with seed of higher germination before it is sold. Twenty-seven dealers reported that they reprocessed seed because of loss of germination. Fourteen of the 27 reprocessed between one-half of 1 percent and 4 percent of their seed for this reason, while 6 firms similarly reprocessed between 5 and 9 percent of their seed. Reprocessing of 10 percent of their seed in order to raise germination levels was performed by 6 other firms and one firm reported that it had reprocessed 25 percent.

When processed seed shrinks in storage, dealers must open the container, replace the amount that has been lost, and rebag the seed. Many firms handling over 1,000,000 pounds reported that shrinkage of processed seed was of some significance. Grasses were most frequently mentioned as the type of seeds which suffered the greatest shrinkage and some firms allowed extra weight to compensate for loss. Most firms said shrinkage was particularly noticeable during hot weather and during the first few weeks after harvest. Therefore, they did not process seed until cooler weather or until they felt it had thoroughly dried out. Two firms said shrinkage of processed seed was significant only when seed was held for a year. Only one wholesale firm in the under

1,000,000 pounds per year volume group reported any shrinkage in processed seed.

Because the size of an individual seed crop varies considerably from year to year and many seedsmen do not have storage facilities to handle the volume in a peak year, some dealers make use of temporary outside storage. Eleven of the 17 firms using this type of storage facility stored less than 25 percent of their seed in these facilities, while 4 firms put 25 to 50 percent of their seeds in this type of storage. Only 2 firms used temporary outside storage for more than half their seed, and one of these firms had a very small annual volume.

#### Other processing operations

In addition to cleaning and recleaning seed, most wholesale dealers blend seeds to obtain a desired quality and also prepare mixtures of seeds for special purposes. Fifty of the firms reported that they blended to obtain a uniform quality, while 49 said they prepared one or more special mixtures. Thirty-four firms were offering a pasture seed mixture; 48 put out a lawn seed mixture.

Twenty-nine dealers rebagged grass and legume seed, putting the seed into smaller containers that would be more acceptable to consumers, while 26 firms scarified seed when the number of hard seeds in a lot exceeded certain proportions. Twenty firms treated or inoculated seed as a disease-preventive, and 4 firms stained seed as a means of identifying its origin.

### SALES

Grass and legume seed are sold both under a brand name or symbol and as unbranded seed. For purposes of obtaining information on sales outlets, it was necessary to break down these seeds into a branded and an unbranded category. Branded and unbranded seeds generally move through different sales channels.

The proportion of grass seed and small-seeded-legume seed sold under a brand name or symbol may vary considerably from year to year, and does differ considerably between dealers in the same year. Some dealers handle only branded seed, while others handle only unbranded seeds. However, most dealers handle both branded and unbranded forms.

#### Sales channels

Grass seed. Approximately 70 percent of the branded grass seed sold by wholesale dealers moved to retail outlets. Most seed moving to the retail trade went to independent retailers, while only a small portion was distributed by the wholesale dealers' own retail outlets (table 9). Sales of branded grass seed through company-owned outlets were large only in the smallest volume-group where 19.7 percent of the sales were made at retail, and the 5,000,000 to 14,999,999 pounds per year volume-group where 48.8 percent were made at wholesale. Sales to noncompany-owned wholesale outlets varied considerably by volume-groups, with the 3,000,000 to 4,999,999 pounds per year volume-group distributing over 12 times as much through this outlet as the smallest volume-group.

Table 9.--Percentage distribution of sales of branded grass seeds  
by type of outlet and volume group

| Pounds<br>of<br>seed<br>handled | Total<br>for<br>volume-<br>group | Company-owned<br>outlets |                             |               |       | Noncompany-owned<br>outlets |                |       |       | Total<br>company<br>and non-<br>company-<br>owned |
|---------------------------------|----------------------------------|--------------------------|-----------------------------|---------------|-------|-----------------------------|----------------|-------|-------|---|
|                                 |                                  | Retail                   | Whole-<br>sale or<br>branch | Mail<br>order | Total | Retail                      | Whole-<br>sale | Total |       |   |
|                                 | Pounds                           | Pct.                     | Pct.                        | Pct.          | Pct.  | Pct.                        | Pct.           | Pct.  | Pct.  |   |
| Under<br>1,000,000              | 696,026                          | 19.7                     | 2.5                         | 0.0           | 22.2  | 74.6                        | 3.2            | 77.8  | 100.0 |   |
| 1,000,000 -<br>2,999,999        | 2,999,238                        | 6.3                      | 2.2                         | 0.0           | 8.5   | 81.0                        | 10.5           | 91.5  | 100.0 |   |
| 3,000,000 -<br>4,999,999        | 6,610,480                        | 0.2                      | 0.1                         | 0.0           | 0.3   | 60.2                        | 39.5           | 99.7  | 100.0 |   |
| 5,000,000 -<br>14,999,999       | 12,033,836                       | 5.2                      | 48.8                        | 2.9           | 56.9  | 37.6                        | 5.5            | 43.1  | 100.0 |   |
| 15,000,000<br>and over          | 20,944,600                       | 0.0                      | 5.6                         | 0.0           | 5.6   | 85.0                        | 9.4            | 94.4  | 100.0 |   |
| Industry<br>weighted<br>average |                                  | 2.7                      | 8.9                         | 0.4           | 12.0  | 67.4                        | 20.6           | 88.0  | 100.0 |   |

Unbranded grass seed is usually sold to wholesale outlets with the largest portion--69.3 percent--moving to noncompany-owned wholesale houses (table 10). Only 8.5 percent of the unbranded grass seed was sold through company-owned facilities.

Unbranded grass seeds were sold through a greater number of channels than branded. While branded grass seeds were sold principally to retailers and wholesalers, and to a lesser extent to mail-order houses, unbranded grass seeds were sold through each of these channels and to exporters. Sales to exporters accounted for 1.8 percent of the unbranded grass seed sold by wholesale dealers. The Bureau of the Census reported that 28 million pounds of grass seed was exported during 1954-1955. However, 22 million pounds of this seed was ryegrass which moved out through West Coast ports, principally Portland, Oreg., and was therefore not reported in the North Central Region operation. Apparently many firms in the North Central Region handled export transactions through a branch or subsidiary office outside of the region. Only three other grass seeds were exported in any quantity. Timothy, Kentucky bluegrass, and fescues, principally tall fescue, totaled 4 million pounds.

Small-seeded legumes. Three-fourths of the branded small-seeded legume seeds sold by wholesale dealers moved to the retail trade, with the principal share taken by noncompany-owned retail outlets. Noncompany-owned wholesale



Table 10.--Distribution of sales of unbranded grass seeds by type of outlet and volume-group

| Pounds of seed handled    | Total for volume-group | Company-owned outlets |        |                 |        | Noncompany-owned outlets |        |                 |        | Total company and non-company |      |       |
|---------------------------|------------------------|-----------------------|--------|-----------------|--------|--------------------------|--------|-----------------|--------|-------------------------------|------|-------|
|                           |                        | Retail:               |        | Wholesale:      |        | Retail:                  |        | Wholesale:      |        |                               |      |       |
|                           |                        | sale or branch:       | order: | sale or branch: | order: | sale or branch:          | order: | sale or branch: | order: |                               |      |       |
|                           | Pounds                 | Pct.                  | Pct.   | Pct.            | Pct.   | Pct.                     | Pct.   | Pct.            | Pct.   | Pct.                          |      |       |
| Under                     |                        |                       |        |                 |        |                          |        |                 |        |                               |      |       |
| 1,000,000                 | 1,874,530              | 8.0                   | 2.0    | 0.0             | 0.0    | 10.0                     | 24.2   | 65.7            | 0.1    | 0.0                           | 90.0 | 100.0 |
| 1,000,000 - 2,999,999     | 5,718,810              | 2.6                   | 0.0    | 0.0             | 0.0    | 2.6                      | 40.4   | 57.0            | 0.0    | 0.0                           | 97.4 | 100.0 |
| 3,000,000 - 4,999,999     | 9,863,545              | 0.3                   | 2.4    | 0.0             | 0.0    | 2.7                      | 7.0    | 87.4            | 1.0    | 1.9                           | 97.3 | 100.0 |
| 5,000,000 - 14,999,999    | 27,065,660             | 3.0                   | 15.2   | 0.0             | 1.4    | 19.6                     | 20.6   | 58.2            | 0.8    | 0.8                           | 80.4 | 100.0 |
| 15,000,000 and over       | 44,358,483             | 0.0                   | 9.3    | 2.5             | 0.0    | 11.8                     | 21.4   | 64.7            | 0.8    | 1.3                           | 88.2 | 100.0 |
| Industry weighted average |                        | 1.6                   | 6.0    | 0.7             | 0.2    | 8.5                      | 20.4   | 69.3            | 0.7    | 1.1                           | 91.5 | 100.0 |

outlets were the second largest receivers of branded small-seeded-legume seeds, taking 9.5 percent of these seeds (table 11). Firms in the smallest volume-group sold 42.3 percent of their branded legume seed through their own retail outlets--more than twice the proportion of branded grass seed handled this way.

While sales of branded small-seeded-legume seed through company-owned mail order departments exceeded the proportion of branded grass seed sold by the same method, they amounted to only 0.7 percent. Sales of branded small-seeded-legume seed to noncompany-owned wholesale outlets reached a high of 20.4 percent in the 3,000,000 to 4,999,999 pound volume-group, while the next largest volume-group did not make any use of this outlet.

Table 11.--Percentage distribution of sales of branded small-seeded legume seeds by type of outlet and volume-group

| Pounds of seed handled    | Total for volume-group | Company-owned outlets |                      |            |       | Noncompany-owned outlets |            |       |       | Total company and non-company-owned |
|---------------------------|------------------------|-----------------------|----------------------|------------|-------|--------------------------|------------|-------|-------|-------------------------------------|
|                           |                        | Retail                | Whole-sale or branch | Mail order | Total | Retail                   | Whole-sale | Total |       |                                     |
|                           | Pounds                 | Pct.                  | Pct.                 | Pct.       | Pct.  | Pct.                     | Pct.       | Pct.  | Pct.  |                                     |
| Under 1,000,000           | 1,288,610              | 42.3                  | 6.0                  | 0.0        | 48.3  | 47.7                     | 4.0        | 51.7  | 100.0 |                                     |
| 1,000,000 - 2,999,999     | 11,680,419             | 4.5                   | 3.6                  | 0.0        | 8.1   | 87.1                     | 4.8        | 91.9  | 100.0 |                                     |
| 3,000,000 - 4,999,999     | 13,682,803             | 0.5                   | 0.2                  | 0.0        | 0.7   | 78.9                     | 20.4       | 99.3  | 100.0 |                                     |
| 5,000,000 - 14,999,999    | 44,877,172             | 5.2                   | 32.2                 | 3.5        | 40.9  | 59.1                     | 0.0        | 59.1  | 100.0 |                                     |
| 15,000,000 and over       | 38,449,318             | 0.0                   | 4.3                  | 0.0        | 4.3   | 86.0                     | 9.7        | 95.7  | 100.0 |                                     |
| Industry weighted average |                        | 3.7                   | 8.7                  | 0.7        | 13.1  | 77.4                     | 9.5        | 86.9  | 100.0 |                                     |

Only a small proportion (9.4 percent) of unbranded legume seeds are sold through company-owned outlets (table 12). This proportion is slightly more than the proportion of unbranded grass seeds sold through similar channels.

Sales to noncompany-owned wholesale outlets accounted for the largest single percentage of unbranded small-seeded legume seeds--68.9 percent. Non-company-owned retail outlets handled 20 percent of these seeds. Firms in every volume-group, except those in the 3,000,000 to 4,999,999 volume-group used this outlet for one-fifth or more of their sales. As with unbranded grass seed,

Table 12.--Percentage distribution of sales of unbranded small-seeded-legume seeds by type of outlet and volume-group

| Pounds of seed handled    | Total for volume-group |      | Company-owned outlets |        |            | Noncompany-owned outlets |        |           | Total company and non-company-owned |       |      |       |
|---------------------------|------------------------|------|-----------------------|--------|------------|--------------------------|--------|-----------|-------------------------------------|-------|------|-------|
|                           | Pounds                 | Pct. | Wholesale or branch   | Export | Mail order | Total                    | Retail | Wholesale | Mail order                          | Total | Pct. |       |
| Under 1,000,000           | 2,896,148              | 17.9 | 0.7                   | 0.0    | 0.0        | 18.6                     | 32.5   | 48.4      | 0.5                                 | 0.0   | 81.4 | 100.0 |
| 1,000,000 - 2,999,999     | 4,154,819              | 12.7 | 0.0                   | 0.0    | 0.0        | 12.7                     | 28.1   | 59.2      | 0.0                                 | 0.0   | 87.3 | 100.0 |
| 3,000,000 - 4,999,999     | 9,906,513              | 2.2  | 2.5                   | 1/     | 0.0        | 4.7                      | 4.5    | 90.7      | 1/                                  | 0.0   | 95.2 | 100.0 |
| 5,000,000 - 14,999,999    | 27,511,833             | 0.8  | 5.7                   | 0.0    | 0.6        | 7.1                      | 36.0   | 52.8      | 0.7                                 | 3.4   | 92.9 | 100.0 |
| 15,000,000 and over       | 38,380,748             | 0.0  | 11.1                  | 0.9    | 0.0        | 12.0                     | 19.5   | 65.2      | 1.2                                 | 2.1   | 88.0 | 100.0 |
| Industry weighted average |                        | 4.3  | 4.8                   | 0.2    | 0.1        | 9.4                      | 20.0   | 68.9      | 0.5                                 | 1.2   | 90.6 | 100.0 |

1/ Less than 0.1.



unbranded small-seeded-legume seed moved through a greater number of channels than did branded small-seeded-legume seed. Export sources accounted for 1.4 percent of total unbranded small-seeded-legume seed sales. The Bureau of the Census reported that exports of small-seeded-legume seeds during 1954-1955 reached 21 million pounds, with alfalfa seed accounting for 11 million pounds. The majority of this seed was produced in the Far West and no doubt moved out of ports in that section of the country. In addition, 10 million pounds of clovers, other than alsike clover, were exported. As was the case with grass seed, a number of the firms reporting in this survey exported small-seeded-legume seeds through branch outlets in sections of the country other than the North Central Region.

### Sales areas

Methodology. In reporting the data on sales areas, 41 of the 59 participating dealers reported on the basis of individual seeds, while the remaining 18 provided data for "all grass seeds" and "all small-seeded-legume seeds." Together, the 7 major grass seeds and 7 major small-seeded-legume seeds accounted for 94 percent of the seed handled by dealers in the survey. An additional 2 percent of the seed could readily be classified as either grass seed or small-seeded legume seed, since it had been listed in one of these categories. The remaining 4 percent for which no breakdown was available was allocated between grass seed and small-seeded-legume seed in the same proportions as the previously mentioned 2 percent which had been listed by type of seed. The results of this method of allocation are only slightly different between sales areas from the results obtained by using the major grass seeds or major small-seeded-legume seeds by themselves. This is what would be expected when 96 percent of the total seed lent itself to classification, since the remaining 4 percent could do little to change the pattern of sales distribution by areas.

Grass seed. Slightly over 62 percent of the total grass seed sold by wholesale dealers remained in the North Central States (fig. 2 and table 13). However, as the volume of seed handled increased, dealers sold proportionately less grass seed in this area. Firms handling less than 3,000,000 pounds per year sold almost all of their grass seed in this area with most of the remainder going to either the Middle Atlantic and New England States (area 1) or to the Plains and Mountain States (area 4). Dealers handling 3,000,000 pounds and over per year sold some grass seed in every geographic area. Sales in the South and Southeast (area 3) by dealers handling 15,000,000 pounds and over per year reached a high of 25.8 percent.

With the exception of ryegrass, 60 percent or more of each of the major grass seeds was delivered in the North Central States (area 2). The second largest proportion of ryegrass delivered--34.3 percent--went to the South and Southeast (table 14). Table 14 also shows the quantity of seed handled by firms reporting delivery destinations. Timothy seed was not delivered to either areas 5, 6, or 7. The second largest proportion of Kentucky bluegrass went to area 1, the Middle Atlantic and New England States. Both areas 1 and 3 received more than 7 percent of the orchardgrass seed shipped by North Central Region dealers. Area 4 received 13.6 percent of the brome grass seed and 16.4 percent of the Sudan grass seed shipped, both of which were the second largest proportions delivered to any area. The second largest delivery area for tall

# GRASS AND SMALL-SEEDED LEGUME SEED DELIVERED TO VARIOUS GEOGRAPHIC AREAS

By Wholesalers in North Central Region

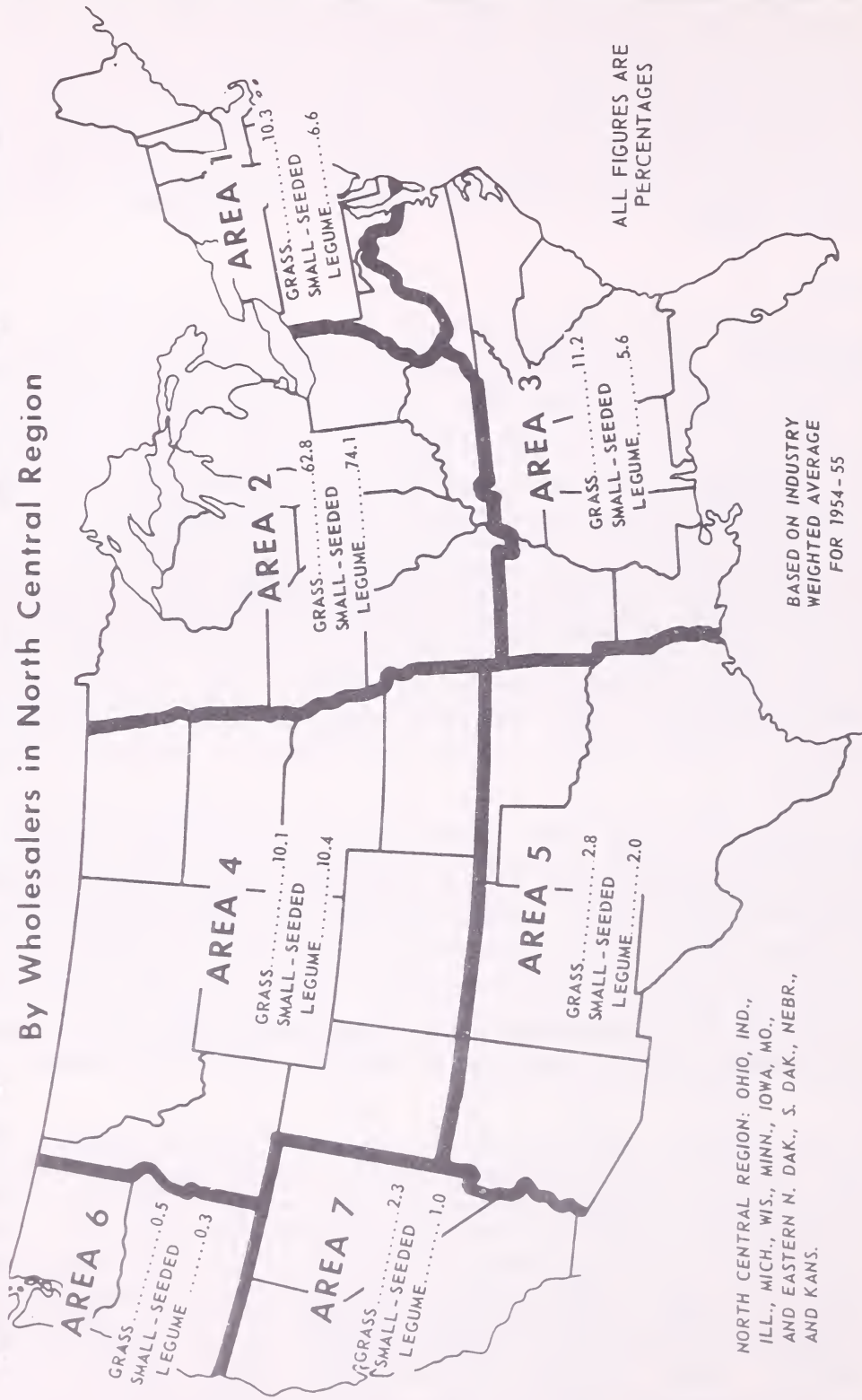


Figure 2

Table 13.--Percentage distribution of deliveries of grass seed by geographic areas and volume-groups

| Pounds of seed handled    | Total volume of grass seed | Area |      |      |      |      |      |      | Total |
|---------------------------|----------------------------|------|------|------|------|------|------|------|-------|
|                           |                            | 1    | 2    | 3    | 4    | 5    | 6    | 7    |       |
|                           | Pounds                     | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct.  |
| Under 1,000,000           | 2,570,556                  | 2.1  | 93.2 | 1.6  | 3.0  | 0.1  | 0.0  | 0.0  | 100.0 |
| 1,000,000 - 2,999,999     | 8,718,048                  | 6.5  | 86.1 | 0.0  | 7.4  | 0.0  | 0.0  | 0.0  | 100.0 |
| 3,000,000 - 4,999,999     | 16,289,442                 | 15.5 | 64.7 | 6.8  | 10.7 | 0.8  | 0.5  | 1.0  | 100.0 |
| 5,000,000 - 14,999,999    | 38,873,792                 | 7.6  | 58.4 | 11.8 | 16.5 | 3.5  | 0.7  | 1.5  | 100.0 |
| 15,000,000 and over       | 63,617,754                 | 9.5  | 41.8 | 25.8 | 8.6  | 7.3  | 0.8  | 6.2  | 100.0 |
| Industry weighted average |                            | 10.3 | 62.8 | 11.2 | 10.1 | 2.8  | 0.5  | 2.3  | 100.0 |

fescue seed was area 1 where 21.6 percent of this seed was shipped.

Small-seeded-legume seed. Almost three-quarters of the seed of small-seeded legumes delivered by North Central Region dealers went to seed dealers in the North Central States (fig. 2 and table 15). The practice of selling less seed in the North Central States (area 2) as the size of the firm increased was noticed to a lesser extent than in the case of grass seed. Firms handling less than 3,000,000 pounds of seed per year did not deliver any small-seeded legume seed to the Southwest (area 5), Nevada-California (area 7), or Pacific Northwest (area 6). Small-seeded legume seed deliveries by firms handling 3,000,000 pounds per year or more were made to every area except that no deliveries were made by the 3,000,000 to 4,999,999 pound volume-group to the Pacific Northwest (area 7).

Seventy-six percent or more of each of 6 of the 7 major small-seeded-legume seeds delivered by North Central dealers went to purchasers in these same States (area 2). The second largest proportion of lespedeza, 38.6 percent, went to area 3 (table 16). Table 16 also shows the quantity of seed handled by plants reporting delivery destinations. Alfalfa seed deliveries were not too heavy in any region, other than area 2, as was the case with alsike clover and white clover. Area 1 was the second largest receiver of red clover, taking 15.2 percent of the deliveries of that seed, while 17.7 percent of the sweet-clover shipped from the North Central Region went to area 4. Area 3 took



Table 14.--Distribution of deliveries of the principal grass seeds by geographic areas

| Seeds         | : Volume handled :<br>:by firms report-:<br>: ing delivery :<br>: destination : | Area <u>1/</u> |             |             |             |             |             |             | : Total<br>: |             |
|---------------|---|----------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
|               |   | 1              | 2           | 3           | 4           | 5           | 6           | 7           |              |             |
|               |   | <u>Pounds</u>  | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u>  | <u>Pct.</u> |
| Timothy       |   | 18,641,950     | 18.9        | 78.5        | 1.0         | 1.6         | 0.0         | 0.0         | 0.0          | 100.0       |
| Ky. bluegrass |   | 7,313,676      | 15.6        | 73.8        | 2.1         | 4.9         | 0.1         | 0.1         | 3.4          | 100.0       |
| Ryegrass      |   | 24,738,968     | 4.8         | 47.6        | 34.3        | 1.9         | 7.3         | 0.5         | 3.6          | 100.0       |
| Orchardgrass  |   | 3,386,626      | 13.9        | 70.3        | 7.2         | 4.6         | 0.9         | 0.4         | 2.7          | 100.0       |
| Bromegrass    |   | 9,703,701      | 1.6         | 83.2        | 0.1         | 13.6        | 1.0         | 0.0         | 0.5          | 100.0       |
| Sudangrass    |   | 8,362,334      | 4.6         | 62.7        | 5.8         | 16.4        | 3.9         | 0.2         | 6.4          | 100.0       |
| Tall fescue   |   | 2,368,449      | 21.6        | 68.4        | 3.6         | 2.5         | 2.6         | 0.1         | 1.2          | 100.0       |

1/ See map, fig. 2.

16.6 percent of the Ladino clover shipped, while no area, other than the North Central, received more than 3.8 percent of this seed.

The monthly distribution of deliveries of the principal grass and small-seeded-legume seeds by wholesale dealers is given in appendix tables 20 and 21.

#### Transportation out of plants

As in the case of hauling seeds into dealers' plants, but not to the same extent, most seeds--38.7 percent--are shipped out by railroad (table 17). However, with the exception of the largest volume-group, firms in the other volume-groups used contract or licensed motortrucks to the greatest extent. Out-shipments of seeds by firms in volume-groups handling less than 3,000,000 pounds of seeds per year were almost equally divided between railroad, company trucks, and contract or licensed trucks. Less than 20 percent of sales were shipped in company trucks by firms in volume-groups handling 3,000,000 to 15,000,000 pounds and over per year, while contract and licensed trucks and railroads accounted for three-quarters of these firms' shipments. More than 6 percent of the seeds shipped were picked up by retailers, wholesalers, and purchasers other than farmers. Firms in the 1,000,000 to 2,999,999 pounds per year volume-group had 15.8 percent of their sales picked up by nonfarm customers.

#### Merchandising practices

Wholesale seedsmen used both newspaper ads and direct mail as their primary advertising methods. Of secondary importance to many dealers were radio,

Table 15.--Percentage distribution of deliveries of small-seeded-legume seed by geographic areas and volume-groups

| Pounds of seed handled    | Total volume of small-seeded legume seed | Area        |             |             |             |             |             |             | Total       |
|---------------------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                           |  | 1           | 2           | 3           | 4           | 5           | 6           | 7           |             |
|                           | <u>Pounds</u>                            | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> |
| Under 1,000,000           | 4,184,758                                | 2.5         | 96.3        | 7.0         | 4.2         | 0.0         | 0.0         | 0.0         | 100.0       |
| 1,000,000 - 2,999,999     | 15,835,238                               | 6.1         | 83.2        | 1.2         | 9.5         | 0.0         | 0.0         | 0.0         | 100.0       |
| 3,000,000 - 4,999,999     | 23,588,510                               | 7.6         | 74.2        | 6.7         | 10.7        | 0.4         | 0.4         | 0.0         | 100.0       |
| 5,000,000 - 14,999,999    | 71,453,241                               | 5.3         | 66.8        | 6.1         | 14.2        | 7.1         | 0.3         | 0.2         | 100.0       |
| 15,000,000 and over       | 75,662,768                               | 8.0         | 67.9        | 7.7         | 8.9         | 2.3         | 0.5         | 4.7         | 100.0       |
| Industry weighted average |  | 6.6         | 74.1        | 5.6         | 10.4        | 2.0         | 0.3         | 1.0         | 100.0       |

Table 16.--Distribution of deliveries of the principal small-seeded legume seeds by geographic areas

| Seed          | Volume handled by firms reporting delivery destination | Area        |             |             |             |             |             |             | Total       |
|---------------|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|               |  | 1           | 2           | 3           | 4           | 5           | 6           | 7           |             |
|               | <u>Pounds</u>  | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> | <u>Pct.</u> |
| Alfalfa       | 83,133,029   | 5.2         | 83.2        | 1.3         | 6.4         | 0.9         | 0.3         | 2.7         | 100.0       |
| Red clover    | 23,018,861   | 15.2        | 79.7        | 2.9         | 2.2         | 0.0         | 0.0         | 0.0         | 100.0       |
| Alsike clover | 5,712,966  | 4.7         | 92.1        | 0.2         | 3.0         | 0.0         | 0.0         | 0.0         | 100.0       |
| Sweetclover   | 17,583,382   | 3.1         | 77.6        | 0.2         | 17.7        | 0.4         | 1.0         | 0.0         | 100.0       |
| Ladino clover | 2,347,452  | 3.8         | 76.0        | 16.6        | 1.4         | 0.3         | 0.3         | 1.6         | 100.0       |
| White clover  | 1,063,647  | 8.9         | 78.5        | 4.3         | 2.8         | 0.3         | 0.2         | 5.0         | 100.0       |
| Lespedeza     | 8,380,358  | 3.4         | 52.4        | 38.6        | 1.4         | 4.2         | 0.0         | 0.0         | 100.0       |

Table 17.--Percentage distribution of grass and legume seeds shipped from plants by type of carrier and volume-groups

| Pounds of seed handled    | Rail    | Company truck | Contract or licensed truck | Farmers' truck | Other <u>1/</u> | Total   |
|---------------------------|---------|---------------|----------------------------|----------------|-----------------|---------|
|                           | Percent | Percent       | Percent                    | Percent        | Percent         | Percent |
| Under 1,000,000           | 26.5    | 25.1          | 38.3                       | 8.1            | 2.0             | 100.0   |
| 1,000,000 - 2,999,999     | 25.3    | 28.5          | 29.0                       | 1.4            | 15.8            | 100.0   |
| 3,000,000 - 4,999,999     | 36.6    | 15.0          | 42.0                       | 1.4            | 5.0             | 100.0   |
| 5,000,000 - 14,999,999    | 36.6    | 19.6          | 40.0                       | 1.8            | 2.0             | 100.0   |
| 15,000,000 and over       | 57.8    | 1.6           | 35.5                       | 0.0            | 5.1             | 100.0   |
| Industry weighted average | 38.7    | 16.0          | 37.3                       | 1.5            | 6.5             | 100.0   |

1/ Picked up by purchasers other than farmers.

television, and trade papers. A number of firms stated that they used 3 and 4 different promotional techniques. The type of advertising policy followed depended, of course, on the segment of the trade with which they were dealing. Magazines, dealers' meetings, and gifts to dealers were also mentioned as promotional mediums that were used.

Forty-three firms reported that they spent some amount on advertising and brand promotion, while 6 firms said they did not advertise. Of the firms that made expenditures for advertising, 24 spent from 1.0 to 2.9 percent of their sales dollar for this purpose, while 11 firms spent less than 1 percent of their sales dollar in this manner. Six firms paid out from 3 to 5 percent of their sales dollar for promotional work, while 2 additional firms spent between 5 and 10 percent of their sales dollar for advertising.

#### Trade barriers

Varying State seed laws were cited by most dealers as the major barrier to domestic seed movement. Many States are at variance as to what constitutes noxious weeds and the proportion of these seeds that should be allowed. Lack of an interagency certification program, prejudices for locally grown seeds, and poor enforcement of seed laws which created unfair competition were also mentioned as trade barriers to seed movement.



## Changes in sales methods and practices

Sixty percent of those dealers responding to the question on changes in sales methods and practices said that no changes had taken place in this activity between 1945 and 1955. However, over a quarter of those firms indicating that changes in sales methods and practices had taken place said the practice of selling seeds on consignment was more prevalent now than in 1945. Selling seeds to retailers on consignment protects the retailer from market declines and forces the wholesale dealer to assume all of the risk of price changes. Many dealers felt that the rise in consignment selling is due to an increasing number of wholesalers in the trade and the resulting increase in competition. Another change in sales practices reported by several dealers was the demand of retailers and other small dealers for prices on a "prepaid basis" rather than the older method of quoting seed prices less freight charges.

The necessity of having better territory coverage through more distribution points was also cited as a change brought on in the last 10 years. Two dealers said that distribution of seeds generally starts earlier than it did in the past, with less "fill-in" sales being made by truck in the spring. Direct selling from producing areas to consumption areas was considered by some to be the major change that has taken place.

About the same proportion of dealers--93 percent--expressed some opinion on changes in sales methods and practices since 1945 as had expressed an opinion on changes in purchasing methods and practices since that year. However, only about half of the firms not answering either question failed to express an opinion on both changes in purchase methods and practices, and changes in sales methods and practices.

## CERTIFIED SEED

Certified seed is seed that has been grown and harvested in accordance with the regulations established by a certifying agency. These agencies vary by States and each one has its own requirements for the certification of seed. The certification program does not extend into all grass seeds and small-seeded-legume seeds, and the degree of participation by farmers in programs for those seeds where certification exists varies considerably with each type of seed.

A history of previous crops grown on the land, proximity to other crops, and other pertinent facts, are checked by an inspector from the certification agency. Additional field inspections are made during the growing season and harvesting of the seed crop must follow a prescribed method. The seed processing plants must be inspected and approved before they qualify to process certified seed. Once certified seed is packaged, the container cannot be opened. If the container is opened the seed can no longer be called certified unless a local certification agency working under a prior arrangement with the original certification group recertifies the seed.

Alfalfa seed was handled in greatest volume under the certification program. The volume of alfalfa seed was over three times as great as the certified seed ranking next in volume. A relatively high proportion--32.4 percent--of alfalfa seed was certified (table 18). Only Ladino clover with a much

smaller poundage exceeded alfalfa in the proportion of total that was certified, 70 percent. Ranger is the principal variety of alfalfa which is certified, while Buffalo ranks second. Only a small proportion of red clover seed is handled as certified seed. The principal variety of this seed that is certified is Kenland. Amounts of certified seed of alsike clover, sweetclover, white clover, and lespedeza handled by dealers were negligible (table 18).

Table 18.--Total volume of individual grass seeds and small-seeded-legume seeds handled and proportion of each that is certified

| Seed               | Total handled | Proportion of total certified |
|--------------------|---------------|-------------------------------|
|                    | <u>Pounds</u> | <u>Percent</u>                |
| Alfalfa            | 105,680,205   | 32.4                          |
| Red clover         | 32,081,843    | 3.6                           |
| Alsike clover      | 7,252,347     | <u>1/</u>                     |
| Sweetclover        | 28,666,654    | 0.8                           |
| Ladino clover      | 3,283,555     | 70.0                          |
| White clover       | 1,278,157     | <u>1/</u>                     |
| Lespedeza          | 14,249,782    | <u>1/</u>                     |
| Timothy            | 26,125,149    | 0.0                           |
| Kentucky bluegrass | 15,836,582    | 0.0                           |
| Ryegrass           | 27,474,568    | 22.2                          |
| Orchardgrass       | 6,703,076     | 2.0                           |
| Bromegrass         | 16,161,201    | 1.2                           |
| Sudangrass         | 13,958,702    | 12.8                          |
| Tall fescue        | 6,691,449     | 12.8                          |

1/ Less than 0.1 percent.

As in the case of the legume seeds, the leading grass seed handled by dealers in the study was largely certified. The volume of ryegrass handled was only slightly larger than the volume of timothy, but 22.2 percent of the

ryegrass handled was certified (table 18). No large quantity of timothy seed is certified. Both tall fescue and Sudangrass had the same proportion of their volume certified--12.8 percent--while only small amounts of orchardgrass and bromegrass were handled as certified seed. Most Kentucky bluegrass is not certified, even though the volume moving in commercial channels is large.

#### Changes in demand, purchases, and sales

Forty-seven of the 53 dealers reporting on changes in demand for certified seed between 1950 and 1955 said that demand had increased, while the remaining 6 firms stated that the demand for these seeds had remained the same. No firm reported a decrease in demand.

Changes in the proportion of seeds purchased as certified seed between 1950 and 1955 ranged from a decrease of 95 percent in tall fescue to an increase of 1,000 percent in perennial ryegrass. As might be expected, alfalfa was the certified seed most frequently mentioned as having large increases in purchases. The increases between 1950 and 1955 ranged from 15 to 700 percent, with most dealers purchasing an average of 75 to 100 percent more certified alfalfa seed than they had 5 years ago. Large quantities of certified alfalfa seed were not available prior to World War II.

Tall fescue seed was most often mentioned as the certified seed in which decreases in purchases took place, while one firm stated that its purchases of certified sweetclover seed had dropped 50 percent. Certified Ladino clover purchases were increased by many firms between 1950 and 1955, while two firms reported decreases in purchases of this seed. Certified varieties of ryegrass, bromegrass, Sudangrass, and red clover were listed by many firms as seeds in which purchases had been increased between 1950 and 1955. The proportion of total seed handled that is certified seed is given in table 19. This table also shows the proportion of both grass seed and small-seeded-legume seed that is certified.

Only a few firms reported any decrease in sales of certified seeds, as compared with their purchases. An indication of the quantity of certified seed that is being sold as noncertified seed is the difference that exists between purchases and sales of certified seeds. Apparently, most dealers sell their certified varieties of grass seeds and small-seeded-legume seeds as unbranded certified seeds or as branded certified seeds. The former would be seed that carried only the tag or other identification of the certification agency, while the latter would include those certified seeds sold both under the dealer's own name or trademark and the certification agency's tag. Therefore, it would appear that very little of the certified grass seed and small-seeded-legume seed handled by dealers in the survey was being sold as noncertified seed.

The general practice of selling certified seed in dealers' own branded bags is borne out by statements regarding the effect of certified seed on promotion and advertising of branded seed. Many wholesale dealers stated that the "Blue Tag" of certifying agencies invalidates the brand name and that many purchasers will buy exclusively on a price basis. While a number of smaller dealers reported that certified seeds had not impaired the effectiveness of their brand promotional work, medium and large dealers did not agree. Most of these latter dealers stated that they either packed or contracted for the



Table 19.--Proportion of certified seed sold unbranded and branded, number of firms handling certified seed, and proportion of each class of seed that is certified, by volume-group

| Pounds of seed handled    | Firms handling certified seed | Proportion certified |                     |         | Proportion of all certified seed sold |         | Total   |
|---------------------------|-------------------------------|----------------------|---------------------|---------|---------------------------------------|---------|---------|
|                           |                               | Grass                | Small-seeded legume | Total   | Unbranded                             | Branded |         |
|                           | Number                        | Percent              | Percent             | Percent | Percent                               | Percent | Percent |
| Under 1,000,000           | 17                            | 6                    | 15                  | 11      | 76                                    | 24      | 100     |
| 1,000,000 - 2,999,999     | 11                            | 8                    | 20                  | 16      | 47                                    | 53      | 100     |
| 3,000,000 - 4,999,999     | 10                            | 5                    | 15                  | 11      | 49                                    | 51      | 100     |
| 5,000,000 - 14,999,999    | 12                            | 4                    | 18                  | 13      | 54                                    | 46      | 100     |
| 15,000,000 and over       | 3                             | 12                   | 23                  | 18      | 10                                    | 90      | 100     |
| Industry weighted average |                               | 7                    | 18                  | 14      | 38                                    | 62      | 100     |

packing of certified seeds in their own branded bags as a means of maintaining brand consciousness in the market. Several dealers felt that as long as certified seeds were readily available to all buyers, they could cope with the problem of merchandising of seeds under a brand name.

Sales of certified seed under brand name

Of the total certified grass seed and small-seeded-legume seed sold as either unbranded certified seed or branded certified seed, approximately 62 percent was sold as branded certified seed (table 19). Firms handling under 1,000,000 pounds of seed per year sold only 24 percent of their seeds as branded certified seed, while firms handling 15,000,000 pounds and over sold 90 percent of their seeds in this form. Dealers in every volume group between 1,000,000 and 15,000,000 pounds sold almost the same proportion of seed in branded certified form as in the unbranded certified form.

Cost of handling

Twenty-three of the 38 dealers reporting on costs of handling stated that the cost of handling certified seeds was no greater than handling noncertified seeds. Approximately two-fifths of those who said that their handling costs

were increased when seeds were certified put the increase in cost at 5 percent, one-fifth said the cost increased between 6 and 10 percent, and another one-fifth said the increase in cost was 2 percent or less. Two of the remaining firms said handling certified seed had increased their costs 25 to 30 percent, respectively, and another dealer said his handling costs had increased because of certification but did not specify the amount.

### SEED MARKETING PROBLEMS

The problems of operating a business where orders for the commodity are received in the summer and fall, priced in November and December, and delivered in February at a competitive price, are numerous. Essentially, it is a question of maintaining a complex marketing system the year round for a highly seasonal operation.

Almost a third of the dealers in the survey did not indicate whether they had problems resulting from marketing seed. One-fifth of them, mostly small firms, stated that they had no seed marketing problems.

The seed marketing problem mentioned most frequently dealt with the distribution of seed by farmers, truckers, local auctions, and country merchants. Many wholesale dealers felt that lack of enforcement of State seed laws made it possible for these sources to sell untested seed that a wholesale dealer would not handle. Seed moving in local channels has a price advantage because it does not receive costly processing and has little or no freight cost.

Many dealers thought that the trend toward selling seeds on consignment, which was the principle change in sales practices noted in the last 10 years, constituted a marketing problem because it encourages a service type of operation where little capital is needed and, consequently, many under-financed dealerships are created. One dealer said that central markets were needed to set the basis for seed prices. Another considered the variance in results of tests made by commercial and State laboratories as a marketing problem.

## APPENDIX

Since considerably more variation can exist between years in the location of seed production areas and in the monthly movement of these seeds than might be found in seed-marketing channels, methods and practices, the sources of seeds and the monthly movement of seeds are discussed in the Appendix rather than in the main body of the report.

The following material describes those aspects of seed marketing which are determined more by conditions outside than inside of the seed trade. While some of the areas where seeds were purchased in 1954 are continual suppliers, it should not be inferred that the same volume of seeds is obtained regularly from these same areas. Neither should the data on monthly movement of seed receipts or deliveries be considered as representative of any seed crop other than that handled in 1954-1955.

### Principal sources of seeds handled in 1954-55

Small-seeded legumes. Almost two-thirds of the 39 firms reporting their principal source of alfalfa listed California as the principal source. Three-quarters of the dealers who named California as their principal source purchased between one-fourth and one-half of their total alfalfa seed there. Most of the remaining firms buy more than half of their alfalfa there. South Dakota and Kansas were also the principal sources of alfalfa for several other dealers. However, only 23 percent of the alfalfa seed produced in the United States during 1954 was raised in the North Central States, while California alone accounted for 38 percent of the total alfalfa seed production.

One-fourth of the 37 dealers reporting on the principal source of alsike clover listed Idaho as the principal source for this seed. Three different sources--Minnesota, Oregon, and Canada--were each listed by one-fifth of the dealers as their principal source. One-half of the dealers using these 4 sources purchased more than 50 percent of their alsike clover at these sources. Approximately 52 percent of the alsike clover seed produced was grown in Oregon and Idaho.

California was the principal source of Ladino clover for almost all seed dealers, while several mentioned Idaho. Ninety percent of the Ladino clover was produced in California.

Almost all of the North Central States were listed as the principal States from which red clover seed was obtained, with no individual State supplying a predominant share. Slightly more than three-fourths of this seed was produced in the North Central States.

Minnesota and Canada were the principal sources of sweetclover seed for two-thirds of the dealers. Most dealers using these 2 sources received more than 75 percent of their total sweetclover seed from these sources. Over one-fifth of this seed produced came from Minnesota, while the North Central States together provided three-fifths of the sweetclover seed produced.

Idaho was the principal source of white clover seed for most dealers. Wisconsin and New Zealand were also mentioned by several others as the



principal sources. Idaho alone accounted for 40 percent of white clover seed production.

Two-thirds of the dealers reporting their principal source of lespedeza seed listed Missouri as the principal source, while several others named Illinois and Indiana. Production of lespedeza seed in the North Central States was 43 percent of the national production; however, Missouri alone accounted for 34 percent of the total production.

Grass seed. Missouri and Iowa were most frequently reported as the principal sources of Kentucky bluegrass seed. South Dakota and Minnesota were the principal sources for many other dealers. Eighty-five percent of the Kentucky bluegrass seed produced in 1954 came from the North Central States. South Dakota and Missouri together accounted for almost half of the total national production.

The principal sources of bromegrass for most dealers were Nebraska, Kansas, and Canada. No bromegrass was produced outside the North Central States during 1954, while three-fourths of the total produced was raised in Nebraska and Kansas.

Kentucky was the principal source of tall fescue seed for most dealers, while a slightly smaller number listed Oregon as the principal source. These 2 States accounted for 45 percent of total tall fescue seed production in 1954.

Missouri and Denmark were the principal sources of orchardgrass seed for two-thirds of the dealers. However, Missouri, the only orchardgrass seed-producing State in the North Central States, contributed only one-fourth of the total national supply.

All the ryegrass seed was supplied by Oregon, which is the only State producing this seed commercially.

California and Texas were the principal sources of Sudangrass seed named by over three-fourths of the dealers. Only 8 percent of the Sudangrass seed produced came from the North Central States. California supplied 35 percent and Texas produced 24 percent.

Production of timothy seed in the North Central States was 98 percent of the total production. Iowa and Missouri together produced 68 percent of the total national production. Three-fifths of the dealers made these 2 States their principal sources.

#### Monthly distribution of receipts and deliveries in 1954-55

Tables 20 and 21 show the monthly distribution of both receipts and deliveries for grass and legume seeds. The number of firms reporting on monthly movement and the volume handled by these firms are also given. The largest number of firms reporting on monthly receipts was 31. Not over 27 firms reported on deliveries.

Table 20.--Monthly distribution of receipts and deliveries of small-seeded-legume seeds by wholesale dealers, 1954-1955

| Seed          | Firms  | Seed handled | 1954 |      |      |      |       |      |      |      |      |      |      |       | 1955 |      | Total |       |
|---------------|--------|--------------|------|------|------|------|-------|------|------|------|------|------|------|-------|------|------|-------|-------|
|               |        |              | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | April | May  | June |       | July  |
|               | Number | Pounds       | Pct. | Pct. | Pct. | Pct. | Pct.  | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct.  | Pct. | Pct. | Pct.  | Pct.  |
| Alfalfa       |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 31     | 77,918,555   | 0.1  | 0.6  | 4.8  | 8.6  | 12.5  | 27.6 | 19.1 | 14.6 | 5.2  | 3.1  | 2.3  | 1.0   | 0.1  | 0.2  | 0.1   | 100.0 |
| Deliveries    | 27     | 68,838,070   | ---  | .1   | 3.9  | 5.8  | 2.6   | 4.9  | 11.0 | 20.6 | 19.0 | 16.2 | 10.6 | 2.5   | ---  | .8   | 2.0   | 100.0 |
| Red clover    |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 31     | 23,526,720   | ---  | .2   | 3.0  | 14.9 | 27.6  | 26.4 | 14.2 | 7.0  | 4.9  | 1.5  | .2   | .1    | ---  | ---  | ---   | 100.0 |
| Deliveries    | 27     | 19,633,679   | ---  | ---  | 1.1  | 4.7  | 5.2   | 8.4  | 10.2 | 21.0 | 22.3 | 16.0 | 6.6  | .5    | ---  | 1.2  | 2.8   | 100.0 |
| Alsike clover |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 29     | 4,878,505    | ---  | .2   | 3.7  | 11.4 | 9.2   | 17.0 | 28.1 | 18.4 | 6.7  | 3.1  | 1.7  | .3    | ---  | ---  | .1    | 100.0 |
| Deliveries    | 24     | 3,611,314    | ---  | ---  | .2   | 1.3  | 1.6   | 6.5  | 10.8 | 22.7 | 23.3 | 18.3 | 13.6 | 1.1   | ---  | ---  | .6    | 100.0 |
| Sweetclover   |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 31     | 19,316,371   | ---  | .5   | 7.3  | 12.5 | 21.1  | 15.7 | 15.9 | 13.0 | 5.6  | 4.0  | 3.7  | .1    | .5   | ---  | .1    | 100.0 |
| Deliveries    | 26     | 12,895,156   | ---  | .2   | .1   | 1.8  | 4.0   | 6.7  | 13.7 | 20.3 | 18.9 | 15.3 | 16.5 | 2.1   | .1   | ---  | .3    | 100.0 |
| ladino clover |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 25     | 2,507,057    | ---  | 1.5  | ---  | 6.6  | 8.8   | 15.7 | 19.0 | 14.8 | 12.1 | .4   | .2   | ---   | ---  | ---  | .2    | 100.0 |
| Deliveries    | 22     | 2,058,353    | ---  | ---  | 3.7  | 7.0  | 5.9   | 4.7  | 13.1 | 21.4 | 17.6 | 12.7 | 8.3  | .2    | 3.2  | ---  | .4    | 100.0 |
| White clover  |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 21     | 894,017      | ---  | ---  | 8.6  | 14.9 | 14.8  | 6.7  | 20.5 | 17.5 | 2.2  | 1.0  | .3   | .2    | ---  | 1.2  | .5    | 100.0 |
| Deliveries    | 18     | 715,903      | ---  | ---  | 3.5  | 6.8  | 6.6   | 7.1  | 5.8  | 13.7 | 9.8  | 10.0 | 9.3  | 6.4   | 6.7  | 3.1  | 2.8   | 100.0 |
| Ispedeza      |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      | 14     | 11,382,375   | ---  | ---  | ---  | ---  | ---   | 24.1 | 42.3 | 14.7 | 3.3  | .4   | 1.7  | .2    | ---  | ---  | ---   | 100.0 |
| Deliveries    | 11     | 7,555,407    | ---  | ---  | ---  | ---  | .2    | 1.0  | 12.6 | 35.1 | 24.1 | 15.2 | 11.1 | .4    | ---  | ---  | .3    | 100.0 |
| Total         |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts      |        | 140,423,600  | .1   | .5   | 4.5  | 9.7  | 17.0  | 26.4 | 17.8 | 13.1 | 5.2  | 2.7  | 2.0  | .6    | .1   | .1   | .1    | 100.0 |
| Deliveries    |        | 115,307,882  | ---  | .2   | 2.7  | 2.6  | 3.0   | 5.5  | 11.3 | 21.6 | 20.0 | 15.9 | 10.7 | 1.9   | .1   | .7   | 1.8   | 100.0 |

Table 21.--Monthly distribution of receipts and deliveries of grass seeds by wholesale dealers, 1954-1955

| Seed           | Firms  | Seed handled | 1954 |      |      |      |       |      |      |      |      |      |      |       | 1955 |      | Total |       |
|----------------|--------|--------------|------|------|------|------|-------|------|------|------|------|------|------|-------|------|------|-------|-------|
|                |        |              | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | April | May  | June |       | July  |
|                | Number | Pounds       | Pct. | Pct. | Pct. | Pct. | Pct.  | Pct. | Pct. | Pct. | Pct. | Pct. | Pct. | Pct.  | Pct. | Pct. | Pct.  | Pct.  |
| Timothy        |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 28     | 18,445,262   | ---  | 4.2  | 39.4 | 28.7 | 12.8  | 5.9  | 4.2  | 3.0  | 1.1  | 0.4  | 0.3  | ---   | ---  | ---  | ---   | 100.0 |
| Deliveries     | 24     | 13,323,091   | ---  | .1   | 6.1  | 11.6 | 6.2   | 3.2  | 8.4  | 19.4 | 19.1 | 14.9 | 8.4  | 1.6   | ---  | ---  | ---   | 1.0   |
| Ky. bluegrass: |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 24     | 11,019,751   | ---  | 18.5 | 51.0 | 8.6  | 2.9   | 4.1  | 1.0  | 3.9  | 1.1  | .5   | .3   | 5.6   | .5   | 2.0  | ---   | 100.0 |
| Deliveries     | 22     | 5,386,920    | ---  | ---  | 1.4  | 13.2 | 10.8  | 9.9  | 11.2 | 15.7 | 9.3  | 8.0  | 4.9  | 2.1   | 2.6  | 0.1  | .4    | 100.0 |
| Ryegrass       |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 24     | 24,639,690   | 1.3  | 3.4  | 2.3  | 11.9 | 18.2  | 13.1 | 11.5 | 11.1 | 3.1  | 5.2  | 3.1  | 1.7   | .6   | ---  | ---   | 100.0 |
| Deliveries     | 22     | 22,307,628   | ---  | ---  | ---  | 8.5  | 12.5  | 19.0 | 6.6  | 17.1 | 8.0  | 3.6  | 5.8  | 1.8   | 1.5  | .8   | 1.0   | 100.0 |
| Orchardgrass   |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 20     | 4,267,010    | ---  | ---  | 1.6  | 15.0 | 23.1  | 11.3 | 16.2 | 6.6  | 2.7  | 1.2  | .4   | ---   | ---  | ---  | ---   | 100.0 |
| Deliveries     | 19     | 2,962,040    | ---  | ---  | ---  | 8.3  | 12.5  | 5.1  | 7.0  | 25.9 | 12.4 | 12.7 | 4.3  | 1.3   | .3   | ---  | 6.9   | 100.0 |
| Bromegrass     |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 29     | 7,929,714    | .4   | 1.3  | 8.0  | 17.8 | 17.1  | 10.1 | 9.7  | 11.5 | 6.6  | 2.4  | 1.2  | .8    | .7   | ---  | ---   | 100.0 |
| Deliveries     | 25     | 4,920,061    | ---  | ---  | .4   | 2.0  | 3.2   | 2.6  | 4.7  | 16.3 | 21.2 | 25.9 | 17.2 | 3.6   | .7   | .1   | .6    | 100.0 |
| Sudangrass     |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 24     | 8,725,465    | 11.5 | 3.5  | .7   | .4   | 5.3   | 7.1  | 12.6 | 11.1 | 9.3  | 7.6  | 2.4  | 5.4   | .7   | ---  | ---   | 100.0 |
| Deliveries     | 24     | 7,594,484    | ---  | .2   | .9   | ---  | ---   | ---  | 2.1  | 8.8  | 12.1 | 16.5 | 18.5 | 25.1  | 15.1 | .3   | .4    | 100.0 |
| Tall fescue    |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       | 18     | 5,260,553    | ---  | ---  | 16.5 | 21.0 | 20.0  | 3.9  | 3.2  | 13.8 | 1.3  | 2.5  | 1.1  | .4    | ---  | ---  | ---   | 100.0 |
| Deliveries     | 17     | 1,844,976    | ---  | ---  | .3   | 9.7  | 8.8   | 9.7  | 6.9  | 17.0 | 16.5 | 14.1 | 9.4  | 2.9   | 2.3  | ---  | ---   | 100.0 |
| Total          |        |              |      |      |      |      |       |      |      |      |      |      |      |       |      |      |       |       |
| Receipts       |        | 80,287,445   | 1.7  | 4.1  | 10.7 | 17.9 | 17.4  | 10.1 | 8.4  | 7.8  | 3.2  | 3.0  | 2.3  | 1.3   | .6   | ---  | ---   | 100.0 |
| Deliveries     |        | 58,339,200   | ---  | ---  | .3   | 6.8  | 9.6   | 10.4 | 6.7  | 16.8 | 12.8 | 10.9 | 8.9  | 5.0   | 2.9  | .4   | 1.1   | 100.0 |







