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Packaged Rose Plant Industry of Texas

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Rose growing in Texas is concentrated in Smith, Van Zandt, Gregg, Cherokee, Harrison and Upshur counties with Smith county producing about 85 percent of the crop. Commercial production began in 1905 when budded plants replaced the own-rooted types. The climate and the sandy loam soils of the East Texas area are conducive to rose production. Two years are needed to grow a bush to marketable size. To produce 1 acre of bushes per year, a farmer needs 5 acres of land with 2 acres in production and 3 in cover crop rotation. Cuttings are planted in the late fall and winter to produce the understock. They are budded the next summer, grown for another year and harvested the following fall as 2-year bushes. The bushes removed from the field in the fall are stored through the winter under controlled temperature and humidity conditions until the selling season in the spring.

The rose industry began increasing rapidly during the mid-twenties. By 1931 there were 81 licensed wholesalers (growers and shippers) located in the State. There were 298 licensed wholesalers by 1949 and in 1956 this had decreased to 240. At the same time, shippers increased their volume to take care of the increased production.

In the mid-forties the distribution pattern of rose bushes began to change from bare root bushes handled by retail nurseries to individually packaged plants distributed not only through retail nurseries, but also through volume market outlets. This trend has continued and today a large majority of all the rose bushes produced in Texas are sold as packaged roses. During this time, the percentage of packaged roses sold increased to more than 50 percent of the total volume of Texas roses.

This change in rose marketing has brought about many changes in handling procedures which have added to the cost of processing and distribution. In addition to increasing management and selling costs, it has increased labor requirements, cold storage facilities, packaging materials, distinctive packages, shipping cartons and special tools and equipment.

Competition among the processors has contributed also to the present economic status of the rose industry, especially for the larger accounts. This has tended to keep the price of packaged roses at a minimum. All of these factors have brought about a greater need for better management and more efficient processing and distribution procedures.

Objectives of this study are: (1) To determine the present economic status of the packaged wholesale rose industry, (2) To determine methods for marketing and distribution of roses and (3) To determine the specific areas in which research work is needed.

Procedures

Twenty-four wholesale packaged rose plant companies in the Tyler rose producing area were contacted during the summer of 1959. These firms had a volume of more than 90 percent of the Texas packaged rose industry. Information was obtained through personal interviews from 79 percent of the companies who represented more than 85 percent of the volume of roses packaged. Data were obtained for the 1956-57, 1957-58 and 1958-59 seasons. Questionnaires were mailed to each packaged rose wholesale company in advance of a personal visit and were used as guides during the interviews.

Presentation of Data

MANAGEMENT

Approximately 26 percent of the firms in the rose package industry have been in business for 10 years or less, while 58 percent have been in business for more than 20 years. Approximately 53 percent of the package rose firms have another business. This sometimes supplements or competes with the packaged rose business. The estimated volume of business has varied from year to year but has increased each year since 1956. In 1956 slightly more than $4,500,000 were received for 11,100,000 packaged bushes. In 1957, 12,236,000 bushes were sold for $4,868,000. In 1958, 15,161,000 bushes were sold for $5,468,000. This represents the volume of business done by participants in the study, Table 1. The participants in this study handled 60 to 70 percent of all the roses produced in Texas in 1956-58. This is based on the production and sales of roses reported by the Texas Crop and Livestock Reporting Service.

Business under individual ownerships accounted for about 48 percent and partnerships about 26 percent; the rest were corporations and cooperatives.

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The average land value amounted to about $15,000, average building about $24,000, equipment $37,000 and cold storage almost 82,000 cubic feet per business establishment, although not all companies had cold storage units available. The use of cold storage vaults provides a smoother packing operation because employees can be employed steadily and thus reduce overtime; the overtime developed in trying to complete packing an order. Then the roses could be packaged and returned to storage until needed for shipment. The cold storage allows the digging of more plants in the fall, thus reducing winter injury, maintains dormant conditions and quality and helps during the preparation for shipment.

GROWER RELATIONSHIP

The individual-owned companies of the packaged rose plant industry grow 20 percent or more of their plants. Eight percent of the growers received all of their income from roses while none received less than 60 percent of their income from roses. It was estimated that an average of approximately 85 percent of the grower's income is derived from roses. The close working relationship between grower and management is excellent in that over 64 percent of the growers sell all of their roses to one packingshed.

HARVESTING PROCEDURE

Five percent of the firms had a harvesting operation that started in the fall and ended as late as June. Five percent estimated that the first harvest in the fall usually began between September 1-15, 26 percent started their harvesting operations between September 16-30 and the remainder began in October and November. The last harvest date ranged from December 15-31 for 5 percent of the respondents and between April 1-15 for about 37 percent. Digging time depended on the amount of available cold storage space and volume of bushes handled during the shipping season. The harvest peak was between November and January.

TABLE 2. DISTRIBUTION OF ROSE BUSH PURCHASES FROM GROWERS BY GRADE

Grade number	Patented	Standard name
	— — — Percent — — —	
Jumbo's[1]	0.7	7.0
No. 1's	70.0	32.0
No. 1½'s	19.2	21.6
No. 2's	5.4	34.7
Canned	1.6	0.7
Unaccounted for	3.1	4.0
Total	100.0	100.0

[1]Extra large U. S. Grade No. 1.

TABLE 1. ESTIMATED VOLUME OF BUSINESS FOR PACKAGE ROSE WHOLESALERS, TYLER AREA

Year	USDA Horticultural specialties estimated production[1]	Business in study	
		Bushes sold	Amount
	Number of bushes	Number	Dollars
1958	21,557,000	15,161,102	$5,468,463
1957	19,950,000	12,236,915	4,868,216
1956		11,123,325	4,581,935

[1]Nursery products, production and sales in 10 selected states, Crop Reporting Board, Agricultural Marketing Service, USDA. SpCr 6-2 (1957, 58, 59)

SALES PROCEDURE

When asked the first sale date in the fall, 11 percent replied between September 15-30 and 78 percent said between October 1-15. When asked their last sale date, 83 percent said they had continuous sales from fall through spring which continued until late May or the middle of June. Thirty-two percent indicated February as the peak month, 63 percent March and 5 percent April.

TYPES OF ROSES

Varieties

HYBRID TEA roses[1] are the result of cross pollinating the old Hybrid Perpetual roses with Tea roses. They have the sturdy growing characteristics of the Hybrid Perpetual, and the recurrent blooming characteristics of the Tea rose. The Hybrid Tea is generally grown for garden use and blooms almost continuously from early spring to late fall. There are several thousand varieties of Hybrid Tea roses now being grown and new ones are being introduced each year.

POLYANTHA roses are low-growing plants with the cluster-flowering habit and are used chiefly for borders and mass planting.

FLORIBUNDA roses are taller than Polyanthas with somewhat larger blooms but have the same clustering blooms as found in the Polyanthas.

GRANDIFLORA roses are the newest rose classification. These roses grow with the cluster-blooming habits of the Polyantha and Floribunda, have somewhat longer stems, and a bud form similar to the Hybrid Tea.

CLIMBERS grow long canes that will completely cover a trellis, fence or any surface used as a support or background.

PILLARS grow taller than Hybrid Teas but do not ramble as much as Climbers. They are usually

[1]All varieties accepted by the American Association of Nurserymen.

planted against a pillar, wall, or some other surface for support.

On the average there were 49 patented roses and 82 standard name roses packaged by packingsheds. The average number packaged per packingshed was estimated as about 116,000 patented bushes, and 811,000 standard name varieties.

GRADES

The specified standards apply only to field-grown, 2-year roses sold either bare root, individually wrapped and packaged, or in cartons.

All grades[2] of roses must have a well-developed root system and have proportionate weight and caliber according to grade and variety. Roses are graded by size, number and length of canes. Proper consideration should be given these characteristics, depending on grade and variety.

Rose bushes that do not meet these standards for individual grades are defined as culls.

Hybrid Tea and Hybrid Perpetuals

GRADE No. 1 should have three or more strong canes, two of which are to be 18 inches and more, with the exception of a few of the light-growing types, which are to have three or more canes, two of which are to be 16 inches and more and one cane to be 18 inches and more branched not higher than 3 inches above the bud union.

GRADE No. 1½ should have two or more strong canes, to be 15 inches and more with the exception of a few of the light-growing types, which are to have two canes 13 inches and more, branched not higher than 3 inches above the bud union.

GRADE No. 2 should have two or more strong canes 12 inches and more, with the exception of a few light-growing types which are to have two or more canes, 10 inches and more, branched not higher than 3 inches above the bud union.

Floribunda Roses

GRADE No. 1 should have three or more strong canes, two of which are to be 15 inches and more with the exception of a few light-growing types, which are to have three canes, two of which are to be 13 inches and more, branched not higher than 3 inches above the bud union.

GRADE No. 1½ should have two or more strong canes, to be 14 inches and more with the exception of a few of the light-growing types, which are to have two strong canes 12 inches and more, branched not higher than 3 inches above the bud union.

GRADE No. 2 has no grade recognized.

[2]As recognized by American Nursery Association.

TABLE 3. DISTRIBUTION BY PERCENT OF VARIOUS TYPES OF ORGANIZATIONS OR AGENCIES PURCHASING ROSES

Types of organizations	Percent of sales
Retail nursery and sales yards	27.2
Grocery chains	24.0
Dime stores	17.3
General merchandising stores	10.2
Large nursery wholesale district	9.8
Individuals	6.1
Others	5.4
Total	100.0

Polyantha and Baby Roses

GRADE No. 1 should have four or more canes, all to be 12 inches and more and branched not higher than 3 inches above the bud union.

GRADE No. 1½ should have three or more canes, all to be 10 inches and more and branched not higher than 3 inches above the bud union.

GRADE No. 2 has no grade recognized.

Climbing Roses

GRADE No. 1 should have three or more strong canes, 24 inches and more and branched not higher than 3 inches above the bud union or crown.

GRADE No. 1½ should have two strong canes, each 18 inches and more and branched not higher than 3 inches above the bud union or crown.

About 70 percent of the patented rose plants sold were grade No. 1, 19 percent grade No. 1½ and the remainder were grown to saleable size in cans or other containers. Plants of patented varieties below grade No. 1½ cannot be sold. For the standard name varieties, the No. 2's are the most prevalent type with about 35 percent, closely followed by No. 1's with 32 percent and the remainder No. 1½'s. The distribution of rose bush purchases by growers by grade is shown in Table 2.

It is estimated that there is a 50 percent loss from the time rose cuttings, commonly referred to as sticks.

TABLE 4. DISTRIBUTION OF ROSE SALES BY VARIOUS METHODS

Method of selling	Percent of methods
Company salesmen	37.8
Mail	34.7
Telephone	13.6
Standing orders	8.5
Other	4.4
Wire	1.0
Total	100.0

TABLE 5. PERCENTAGE DISTRIBUTION OF SALES BY SALE TYPE

Type of sale	Percent
Credit	79.9
Cash	16.2
Contract	3.9
Total	100.0

are placed in the ground for rooting until the plants are packaged. The loss is distributed approximately as follows:

20 percent loss of cuttings, failure to root properly,

50 percent loss in budding, buds fail to set and grow,

30 percent loss due to breakage, including wind damage and mechanical damage, during cultivation and digging.

The number of culls varies from year to year according to the weather and growing conditions. Forty-two percent of the participants said that their culls ranged between 3 and 7 percent while one-third of the processors said that the number of cull bushes returned or destroyed ranged between 8 and 12 percent. Participants, asked how they handled unsaleable plants in their operation, reported that they burned or destroyed them, sold them to cull merchants or returned them to the grower.

MARKETING DISTRIBUTION

The major sales of the organizations or agencies purchasing roses were to chain stores and retail nursery sales yards. Other sales outlets included dime stores, general merchandising stores and large nursery wholesalers. Percentage distribution of the various organizations or agencies purchasing roses from respondents is indicated in Table 3. Roses are sold mainly by mail, by company salesmen and by standing order, Table 4. Selling on credit is important in this business, Table 5. This requires additional capital and thus increases operation costs.

TABLE 6. DISTRIBUTION OF VARIOUS METHODS USED TO SHIP PACKAGED ROSES

Method of shipment	Percent of methods
Truck-common carrier	55.3
Own trucks	24.3
Railway express	6.9
U. S. mail (parcel post)	5.4
Rail freight	5.0
Customers' own transportation	1.9
Over the counter	1.2
Total	100.0

TABLE 7. AVERAGE WEIGHT PER PACKAGE AND ROSE BUSH BY VARIOUS GRADES AND NUMBER IN PACKAGE

Number and grade	Average weight per pack
Single Jumbo	3.00
No. 1 Single	2.50
No. 1½ Single	2.00
No. 2 Single	1.30
No. 1 (2 Pack)	3.25
No. 1½ (2 Pack)	2.20
No. 2 (2 Pack)	1.58
No. 1 (3 Pack)	3.62
No. 1½ (3 Pack)	3.12
No. 2 (3 Pack)	2.80
No. 1½ (5 Pack)	4.80
No. 2 (5 Pack)	3.40

Methods used to ship packaged roses have changed drastically during the past few years. Rail express shipments have decreased to about 7 percent, *while common carrier trucks handle most shipping*, Table 6.

The average weight per bush decreases with a decrease in grade size, Table 7, which indicates that lighter plants make up the lower grades. None of the companies packaged their entire output in single rose packages. The number of roses per package is shown in Table 8, one rose bush per package represents 27 percent of the volume. A bare root rose plant is one that is placed in a shipping container with a minimum amount of moisture-retaining material—for example, shingle toe—placed on the roots to keep the plant in good condition while it is in transit. Eight percent of the bare root roses are sold five to a package and 27 percent have as many as 20 per package. Ten bare root roses to a package represent 62 percent of the bare root sales. The number of roses sold in the various types of packages is shown in Figure 1. Sixty-six percent of the roses are packaged, 33 percent unpackaged and the rest grow in cans.

TABLE 8. DISTRIBUTION NUMBER OF ROSES IN A PREPACKAGE AND BARE ROOT PACKAGE

Number per package	Packaged roses	Bare root roses
	— — — — Percent — — — —	
1	26.6	
2	21.9	
3	26.6	
4	1.5	
5	23.4	7.7
6		3.8
10		61.6
20		26.9
Total	100.0	100.0

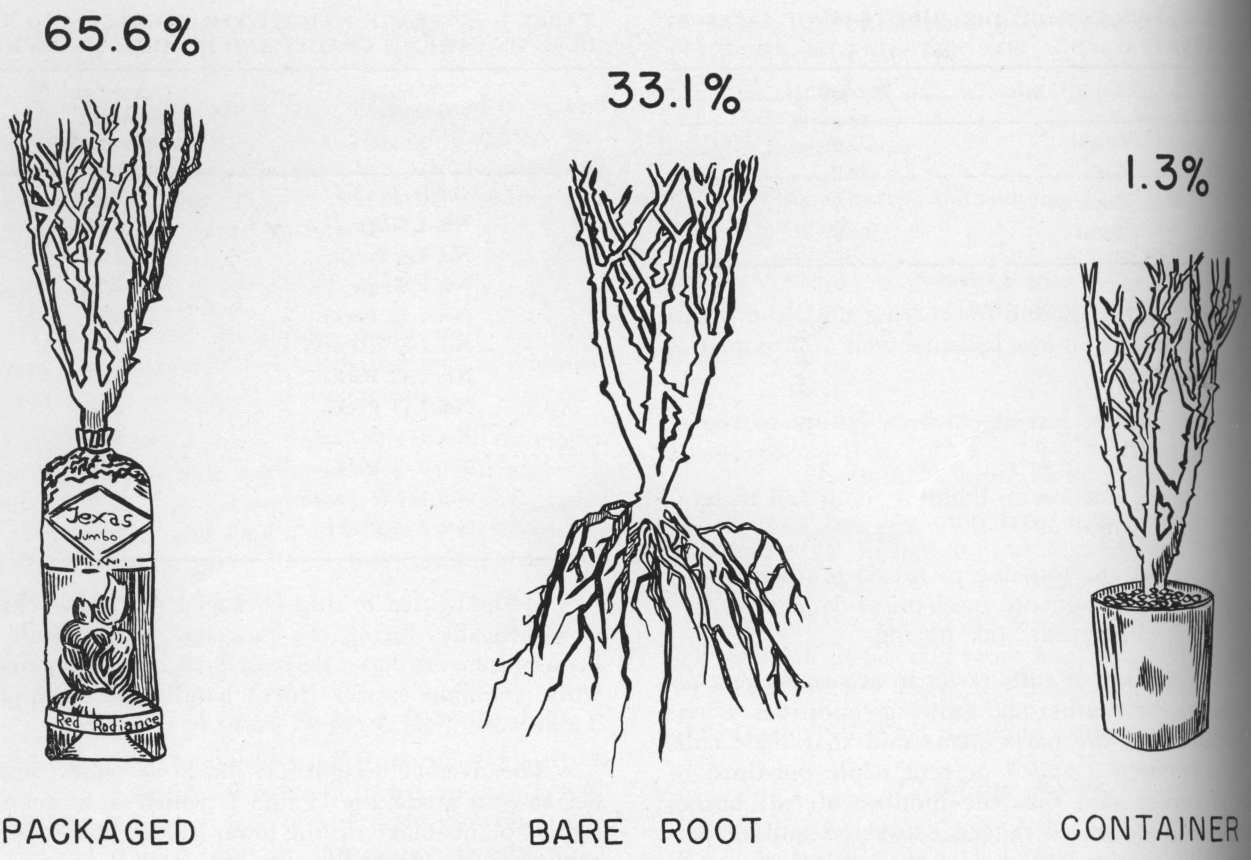

Figure 1. Distribution of rose sales by type of package.

The type of packing material used to protect the roots for packaged and bare root roses varies, Table 9. Shingle toe represents about 39 percent of the packing material for packaged roses and 27 percent for bare root roses. Cane pulp is very popular with the packaged roses, Table 9.

Twenty-six percent of the companies reported that they did not wax all of their roses; 10 percent waxed all their rose bushes while 64 percent waxed all of the packaged rose bushes.

Seventy-one percent of the shipping containers used are cardboard cartons, followed by burlap, wooden boxes and waterproof bags, Table 10. Seventy-nine percent of the companies reported that they had one size of box to package their roses, 10 percent had two and 10 percent three different sizes.

TABLE 9. DISTRIBUTION OF PACKING MATERIAL TYPES USED FOR PROTECTING THE ROSE ROOTS

Type of packing material	Package	Bare root	Total
		Percent	
Shingle toe	38.7	27.3	34.0
Cane pulp	22.6	9.1	17.0
Sawdust	12.9		7.5
Polyethylene	6.5	31.8	17.0
Sphagnum moss	16.1	9.1	13.2
Peat moss	3.2	9.1	5.7
Hay		9.1	3.8
Burlap		4.5	1.8
Total	100.0	100.0	100.0

ASSISTANCE TO GROWER

The assistance given to the grower by the companies on production practices varies with growers and packingsheds. Sixteen percent reported recommending fertilizer types and 13 percent recommended specific field spacing. Information about fertilizer, insects, diseases and recommended time to dig the bushes represented the major assistance to the growers. The companies also assist the growers by recommending the number and variety of plants and the price to be paid. The control over the plant af-

TABLE 10. DISTRIBUTION OF SHIPPING CONTAINER TYPES

Type of material used for shipping container	Percent
Cardboard cartons	70.9
Burlap	12.5
Wood boxes	8.3
Waterproof paper	8.3
Total	100.0

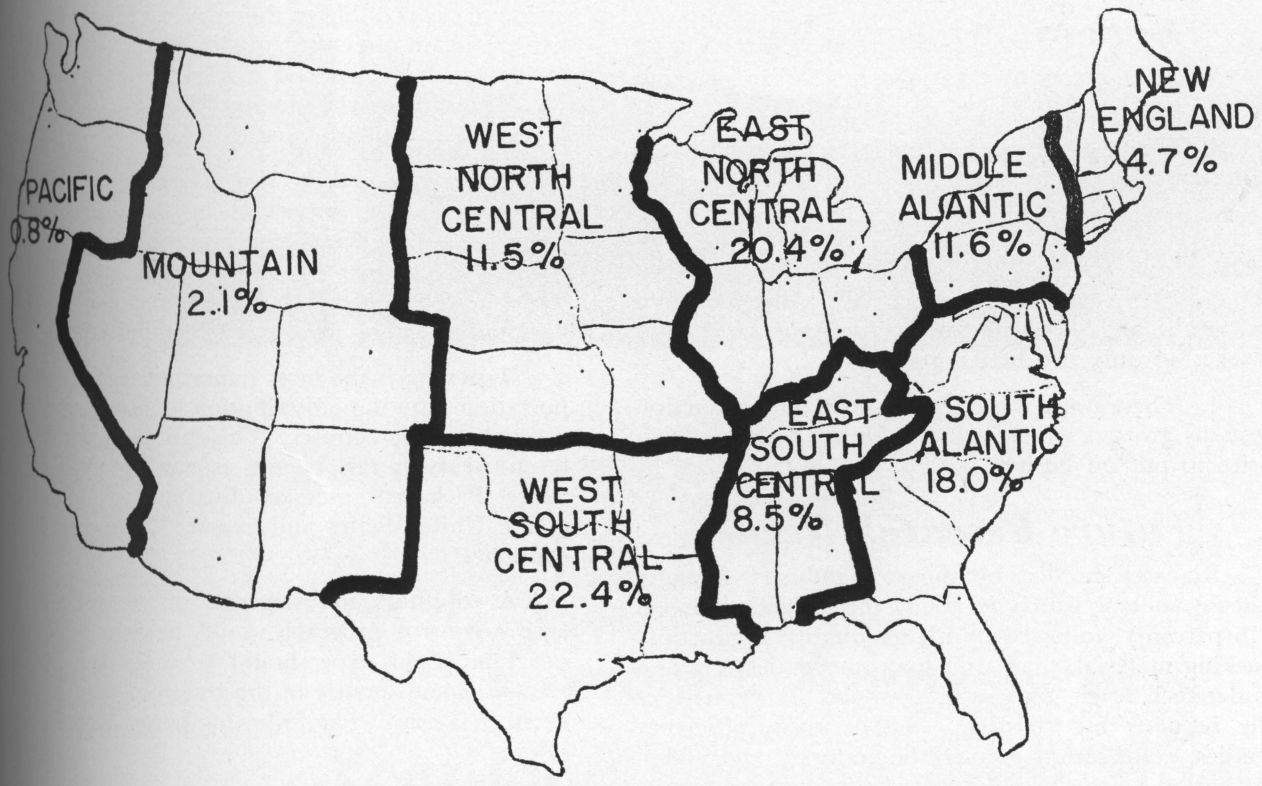

Figure 2. Percent distribution of sales of packaged roses to various areas.

ter it is sold is small; 68 percent said they had no control, 5 percent used a 14-day guarantee and about 5 percent each used a shipping guarantee, first-season retail guarantee, distribution points, size of order and handling or procedures.

TABLE 11. **AVERAGE DISTRIBUTION OF EXPENSES FOR PACKAGING ROSES, TYLER AREA, 1956-57, 1957-58, 1958-59 SEASONS**

	— — — Percent — — —	
Total labor cost		37.9
Labor	16.5	
Hourly payroll	9.6	
Monthly payroll	4.3	
Management	7.5	
Packing material		22.5
All other expenses		39.6
Miscellaneous expenses	18.8	
Rent-occupancy	6.7	
Delivery	5.8	
Direct expenses	3.5	
Indirect expenses	3.0	
Advertising	1.0	
Bad debts	0.8	
Commission	[1]	
Total		100.0

[1]Less than 0.03 percent

DISTRIBUTION AREAS

Sales are made in all sections of the country. The leading sales areas are the West South Central with 22 percent of the total, the East North Central with 20 percent, South Atlantic 18 percent and the West North Central with 9 percent of the total as shown in Figure 2. Few sales were made in the New England, Rocky Mountains and the Pacific areas.

OPERATION COSTS

Operating costs are fairly consistent within the Texas rose industry. Most firms have high labor costs. These represent as much as 50 percent of total expenses and 35 percent of total operation costs. Costs are an operation phase which should be examined by the individual firm. All firms appear to have excessive expenditures, which could be controlled by better management practices. Generally, each firm has one specific area of operation that is more difficult to control than others. Better management practices should give a greater return on the investment and more efficient operation.

Labor represents about 38 percent of the cost, packing material 22 percent, and other expenses 40 percent over a 3-year average, Table 11. Labor costs may be broken down as follows: regular labor, 16 percent; management, 7.5 percent; monthly payroll, about 4.3 percent; and hourly payroll, about 9.6 percent.

General Observations

The following observations were made during the study.

1. There was a lack of cooperation within the industry.

2. There was a general desire of members to make improvements in the industry.

3. There was a general need to adhere to present grades and standards and to use fewer culls, thus marketing only the better grades.

4. There were very few records on production costs by growers which led to inability to know what price to put on bushes.

Future Research Needs

Research needed by the rose industry includes disease control which is about the biggest problem (16 percent), followed by higher quality production, packing material, plant life span, merchandising and understock, each representing about 10 percent of the requests for research. Labor costs, efficiency studies, cooperation among the industry and standardization of the product were other requests made.

Concerning marketing problems, 20 percent said stabilization of prices was the most important; 16 percent, lack of uniform grade; 13 percent, lack of cooperation within the industry; and approximately 13 percent represented cull bushes on the market. Labor, overproduction and standardization were other problems mentioned.

Conclusions

Labor is the largest expense in the packaging of roses; therefore, the best opportunity for cost reduction is more efficient utilization of labor force. Some phases of the packaging operation would lend themselves to contract work by teams of employees. By utilizing teams and paying on piece work, each team member would be more concerned with team efficiency, thus perhaps reducing the overall cost.

The second highest cost item is packing material. The large number of grades, sizes and number of roses per package leads to confusion and to time-consuming efforts to pack, label, box and invoice. Some standardization as well as a reduction of different items or pack types and sizes would not only reduce packaging material costs but also reduce labor costs of handling.

Rose processors are concerned with the production of high quality rose bushes and offer as much assistance as possible to the grower. However, a high percentage of the roses produced and packaged are of low grades. Some of this is caused by the many small producers who do not have the skill or time necessary to produce quality bushes.

Chain stores, dime stores and general merchandising stores are important in the distribution of packaged roses. Retail nurseries and sales yards represent only 27 percent of packaged rose purchases. This shows how other businesses are taking over the distribution from the established industry.

Trucking is the most important method of transportation in the distribution of packaged roses throughout the country. This represents a change in recent years as rail express is now lower in importance. Packaged roses are distributed to all sections of the United States and exported to several foreign countries.

A voluntary industry-wide production and marketing control program would be very helpful. A program of this type should be aimed at raising the standards and quality of the roses produced and marketed in Texas. The following points should be considered.

Control the grades marketed by prohibiting the sale of culls. This might be accomplished if the processors purchased the culls for a small fee and then destroyed them.

Control the number of rose packs. Table 6 lists 12 different packs by grade and number of bushes per package. An industry self-analysis could point up a number of packs that might be eliminated.

Encourage production and cultural practices that would produce a large number of U. S. No. 1 grade and fewer culls.

Encourage better marketing control by a uniform starting and finishing time for digging and shipping.

Encourage closer cooperation among growers and among shippers and between the two groups for keeping and maintaining adequate production cost records.

Acknowledgments

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