result of desiccation during the dry months of the winter. This species should be tested further.

Cordia superba Cham., a native of Brazil, was received from the Atkins Garden, Cienfuegos, Cuba, and planted in 1953. It did not grow well, and died within four years. Dieback and chlorosis were evident, indicating the occurrence of minor element deficiencies. With special care, this species probably could be made to succeed in this area, because Menninger (2) considered it to be suitable for cultivation at Stuart, Florida.

SUMMARY

Over the past 30 years, 11 species of Cordia have been tested at the Sub-Tropical Experiment Station for adaptation to the limestone soils of South Florida, for use as ornamentals. *Cordia angiocarpa* A. Rich., *C. lutea* Lam., and *C. sebestena L.* are beautiful trees, well adapted to cultivation in this area. *C. glabra Cham.*, *C. leucosebestena* Grieseb., *C. myxa* L., and *C. obliqua* Willd. grow well in South Florida, but are not attractive enough to be considered as ornamentals. *C. abyssinica* R. Br., *C. globosa* H.B.K., *C. subcordata* Lam., *and C. superba* Cham. have not yet received an adequate trial, and should be tested further

LITERATURE CITED

1. Eggeling, W. J. 1940. The Indigenous Trees of the Uganda Protectorate. The Government Printer, Entebbe, Uganda.

8. Menninger, E. A. 1955. The Geiger tree and its relatives in Florida. Natl. Hort. Mag. 34: 159-162.

CHANGES IN THE MARKETING OF FOLIAGE PLANTS

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Sales of Florida foliage plants have increased 540 percent in the last 12 years, from $2,000,000 in 1949 (2) to $12,773,000. Although the area devoted to the production of foliage plants increased, the gross value of sales in 1961 was only slightly higher than the $12,625,000 reported by the Census of Agriculture in 1959 (3). When plants purchased and resold by growers are excluded, the sales value of plants grown in Florida in 1961 was $11,105,000.

This paper relates preliminary findings of a research project on the marketing practices of Florida foliage plant growers. Data on acreages, market outlets, methods of transportation and other aspects of foliage plant industry practices were obtained from a stratified sample of growers in the summer of 1962. On the basis of acreages cultivated, growers were classified into the following four groups: small—.01 to .99 acres; medium—1.0 to 4.99 acres; large—5.0 to 9.99 acres; and very large—10.0 acres and over. Most of the data collected in the survey pertained to the calendar year 1961. Comparisons are made with a prior study done in 1957 (1).

In this study three geographic production areas were delineated. The two primary groupings were the central area, which includes Lake, Orange and Seminole counties, and the southern area composed of Broward, Dade and Palm Beach counties. All growers located in counties other than these six were included in the category of "other areas." These divisions were the same as those in the 1957 study of the foliage plant industry.

ACREAGE AND GROWERS

The 719 acres in foliage plants in 1962 represented a rise from 485 acres in 1956. The 1961 figure was 679 acres. Of the total area in foliage plant culture this year, 204 acres are open land, 438 acres are shaded and 77 acres are devoted to greenhouses. Of the area in greenhouses, 52 acres are covered by glass and 25 acres by glass substitutes. Data on the 1962 acreages in various areas and grower size groups are contained in Table 1.

The total number of foliage plant growers in Florida increased from 180 in 1957 to 234 in 1962. Of the growers currently in the industry, 19 have ten acres or more in foliage plants. The 135 small growers average less than one-third acre in plants. The remaining 79 growers each have between one and ten acres.

The 19 growers with ten or more acres operated 61 percent of the acreage devoted to commercial foliage plants in Florida. This group, combined with the 15 growers with from five to ten acres, cultivated 74 percent of the acreage in foliage plants. Less than 15 percent of the growers controlled three-fourths of Florida's foliage plant acreage and had two-thirds of all sales (Table 2).

The number of growers in the central area

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TABLE 1.--Number of foliage plant growers and acres cultivated, by grower size groups and areas 1962

Size Group	Area							
	Central		Southern		Other		All Areas	
	Acres	Growers	Acres	Growers	Acres	Growers	Acres	Growers
	Number	Number	Number	Number	Number	Number	Number	Number
Small	19	65	9	15	16	56	44	136
Medium	79	39	30	10	35	15	144	64
Large	60	9	36	6	0	0	96	15
Very Large	154	9	256	9	25	1	435	19
All	312	122	331	40	76	72	719	234

increased from the earlier year to the latter, while a decrease took place in the southern area. The number of growers in "other areas" increased by a third.

SALES AND DISTRIBUTION

The rise of $1,060,000 in first sales by growers of foliage plants from 1956 to 1961 was accompanied by shifts in the relative positions of producing areas (Table 3). Sales increases of 69 percent in the "other areas" and 60 percent in the central area exceeded the 11 percent increase for all Florida growers. The decline in the southern area was 35 percent. On a statewide basis, average sales per acre fell from $20,700 in 1956 to $16,354 in 1961.[1]

TABLE 2.--Proportion of growers, acres cultivated and sales by grower size groups and areas, 1961

Area	Proportion of Growers	Proportion of Acres	Proportion of Sales
	Percent		
Central[a]			
Small Growers	53.3	6.1	13.4
Medium Growers	31.9	25.3	18.4
Large Growers	7.4	19.2	23.9
Very Large Growers	7.4	49.4	44.3
All Growers	100.0	100.0	100.0
Southern[b]			
Small Growers	37.5	2.7	10.4
Medium Growers	25.0	9.1	7.3
Large Growers	15.0	10.9	10.6
Very Large Growers	22.5	77.3	71.7
All Growers	100.0	100.0	100.0
Other[c]			
Small Growers	77.8	21.1	23.8
Medium Growers	22.2	78.9	76.2
Large Growers	0	0	0
Very Large Growers	d	d	d
All Growers	100.0	100.0	100.0
All Areas			
Small Growers	58.1	6.1	13.5
Medium Growers	27.4	20.0	20.0
Large Growers	6.4	13.4	18.1
Very Large Growers	8.1	60.5	48.4
All Growers	100.0	100.0	100.0

[a]Lake, Orange and Seminole Counties.

[b]Broward, Dade and Palm Beach Counties.

[c]All counties not included in the central and southern areas.

[d]Since there is only one grower in this size group, data on his operation have been placed in the medium size group so as not to divulge information given confidentially.

Foliage plants in 1961 were shipped principally to five market outlets—variety stores, 26 percent; out-of-state greenhouse operators, 32 percent; retail florists, 15 percent; brokers, 16 percent; local growers, 7 percent; and all other outlets, 4 percent (Table 4). The most notable change from 1956 to 1961 was the decline in sales through jobbers. In 1956 they handled 8 percent of total sales. However, the growers interviewed reported no sales through jobbers in 1961. Marketings to retail florists, greenhouse operators, variety stores and brokers showed increases.

Growers in the central area sold primarily to greenhouse operators and variety stores in 1956. Although these remained the major outlets in 1961, substantial increases were registered in marketings to retail florists and brokers.

Most important outlets in the southern area

[1]Excludes value of plants purchased by growers and then resold.

TABLE 3.--Estimated Florida foliage plant sales by areas, 1956 and 1961

Area	1956		1961	
	Total Sales		Total Sales	
	Dollars	Percent	Dollars	Percent
Central	4,208,485	42	6,740,654	61
Southern	5,267,747	52	3,398,083	31
Other	569,422	6	965,765	8
All Areas	10,045,654	100	11,104,502	100

TABLE 4.--Outlets through which Florida foliage plants were marketed, 1956 and 1961

Market Outlets	1956				1961			
	Central Area	Southern Area	Other Areas	All Areas	Central Area	Southern Area	Other Areas	All Areas
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Variety stores	17	28	21	23	29	18	29	26
Greenhouse operators (out of state)	27	30	12	28	29	42	25	32
Retail florists	12	3	4	7	16	9	24	15
Grocery stores	2	14	3	8	2	3	2	2
Department stores	1	a	0	a	2	a	a	1
Retail (place of business)	0	a	25	2	a	0	4	1
Local growers	16	4	16	10	8	6	2	7
Brokers	12	16	13	14	14	22	14	16
Jobbers	12	5	6	8	0	0	0	0
Others	1	a	0	a	0	0	0	0
	100	100	100	100	100	100	100	100

[a]Less than 1 percent.

were greenhouse operators and variety stores in 1956. The two major types of buyers in 1961 had become greenhouse operators and brokers.

Principal outlets of growers in the "other areas" in 1956 consisted of variety stores and retail sales at the place of business. But in 1961, primary outlets had shifted to variety stores, greenhouse operators and retail florists.

Of the total sales of foliage plants by growers in 1961, 14 percent were made to Florida buyers. Most sales to buyers in Florida were made to other growers. Such sales totaled $1,668,000. Buyers then used these plants, in combination with their own, to fill orders. A portion of the sales made to Florida buyers was to outlets catering to final consumers.

The Southeast and the Northeast each were destinations for a fourth of all Florida foliage plants marketed in 1961. Distribution to other areas was as follows: Mid-West, 22 percent; Southwest, 8 percent; West, 3 percent; and exports, 3 percent. These data are illustrated in Figure 1.

Growers in the central area shipped primarily to the Southeast, and those in the southern area mainly to the Northeast. Most plants shipped by growers in the "other areas" went to Florida destinations.

Foliage growers in all areas shipped most of their plants by truck. Of all shipments, 40 percent went by commercial truck, 28 percent by railway express, 13 percent by growers' truck and 12 percent by air freight. The principal reason, other than speed and cost, for shipping plants by the particular method used was customer's preference. The proportion of total shipments made by various methods in 1956 was as follows: railway express, 49 percent; air freight, 28 percent; truck, 21 percent; and parcel post, 2 percent.

Philodendron cordatum remains the most important foliage plant grown in Florida. However, it appears that the market for this plant is now approaching a saturation point. Many growers reported having been forced either to throw away large quantities of cordatum or to sell these plants at very low prices.

A greater variety of plant species and genera is now produced than was the practice a few years earlier. Some growers now sell over 200 different kinds of plants. Because of the complexity of the types of plants grown and different record keeping practices by various growers, sufficient data to estimate the relative position of various groups of plant materials were not acquired in the field survey.

Grower Marketing Problems

Foliage plant growers are now faced with many marketing ploblems. A very obvious one relates to the competition from artificial foliage plants for the buyers' dollar. Many variety stores and other retail outlets devote much more space to artificial foliage than to living foliage. Some retailers are reported to have stopped handling live plants altogether.

Another marketing problem relates to the maltreatment of plants by personnel in the retail

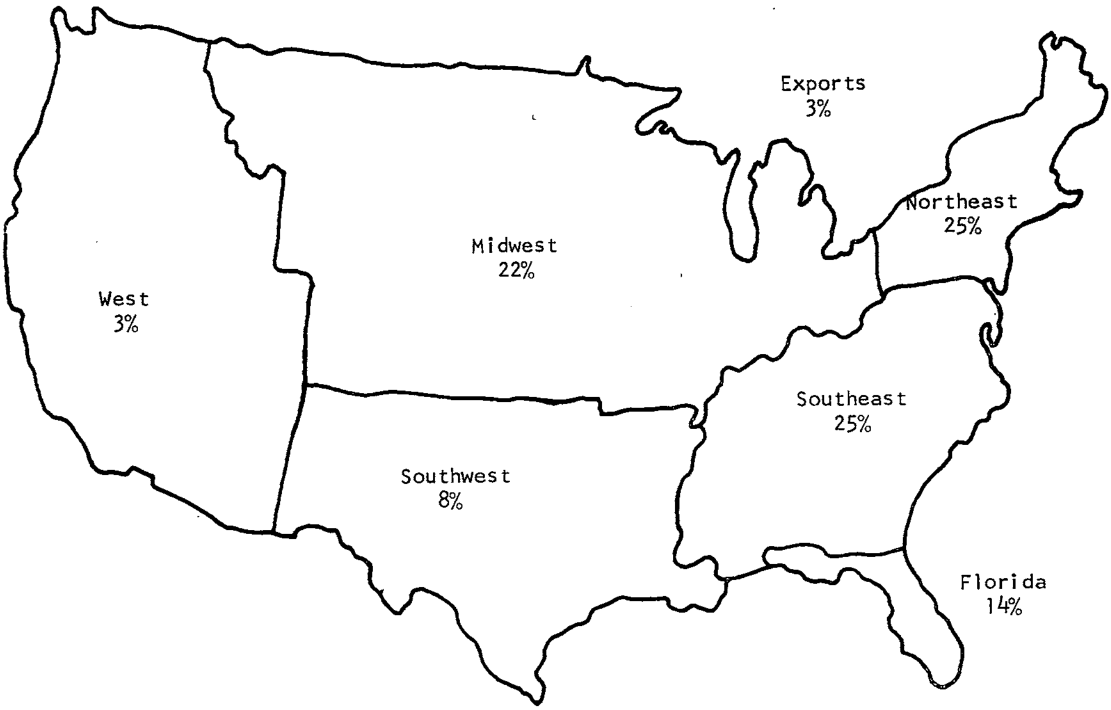

Figure 1.--Market distribution of Florida foliage plants, 1961.

outlets selling foliage plants. As a result, plants displayed in stores often deteriorate in quality. Many problems remain to be settled in developing a coordinated marketing program. How can retail store personnel be informed as to the proper care and display of live foliage plants? Is it a problem for growers to handle individually or one for the industry as a whole?

Another problem is quality control at the grower level. Complaints were registered that low quality plants sold by some growers have tended to injure the reputation of the entire Florida foliage plant industry. A number of growers expressed opinions that the adoption and acceptance of grades and standards is a necessary step for forward progress in the industry.

An apparent overproduction of foliage plants in the past several years has characterized the industry. Prices have been depressed for many types of plants at certain periods; at times some plants have been dumped, since no market for them could be found. Many growers feel that overproduction will continue to be a problem for which no possible solution exists. Others think that the surplus could be sold with better market distribution. The promotion of foliage plants through advertising, news stories, the production and distribution of point of sales material and service calls on dealers and retailers also offer an opportunity to expand sales. But experience with other products indicates that a promotion program must also be accompanied by endeavors of growers to establish and follow standards of quality.

The major problem overshadowing all others appears to be a lack of organized cooperative action among foliage plant growers. Cooperative efforts of growers and handlers to work together could result in better plants, stimulated consumer demand, higher incomes to growers, workers and handlers and an over-all boost to the economy of Florida.

LITERATURE CITED

1. Nicholls, Charles A., Smith, Cecil N. and Brooke, Donald L. **A Survey of the Florida Foliage Plant Industry.** Fla. Agr. Exp. Sta. Bul. 615, 1959.

2. U. S. Bureau of the Census. **U. S. Census of Agriculture: 1950. Vol. V, Special Reports, Part 1, Horticultural Specialties.** Washington: Government Printing Office, 1952.

3. ________. **U. S. Census of Agriculture: 1959. Vol. V, Special Reports, Part I, Horticultural Specialties.** Washington: Government Printing Office, 1962.