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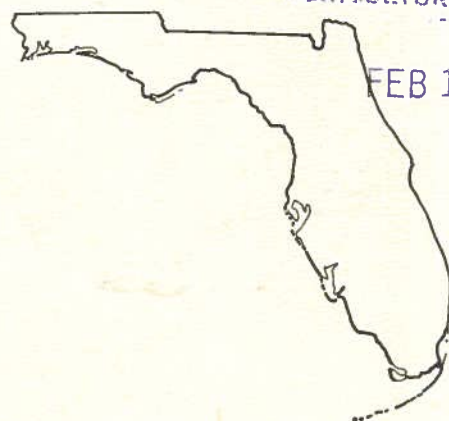
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**Economic Information
Report 115**

The Florida Bedding Plant Industry



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ABSTRACT

Bedding plants constitute an increasingly important segment of Florida's complex of ornamental industries. A survey of traditional bedding plant growers showed more than 33 acres in the culture of these plants in 1975. Sales were estimated at \$2.6 million in 1975, with a USDA report showing a rise to a \$4 million level in 1978. Fall and spring are the major marketing seasons for Florida bedding plants. The major outlets to which products are marketed were (1) chain and department stores and (2) garden centers and retail nurseries.

Key words: Bedding plants; bedding plants--Florida; marketing bedding plants.

FOREWORD

Appreciation is expressed to the bedding plant growers who made their records available for use in the study reported here. Thanks are extended to Dr. Fawzi A. Taha who, while serving as interim field assistant, collected most of the data which are analyzed in this report.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the integrity of the financial system and for the ability to detect and prevent fraud.

2. The second part of the document outlines the specific procedures that must be followed when recording transactions. This includes the requirement to use standardized forms and to ensure that all entries are clearly legible and properly dated.

3. The third part of the document discusses the role of internal controls in ensuring the accuracy of financial records. It highlights the importance of segregation of duties and the need for regular audits to identify and correct any discrepancies or errors.

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The first part of the report deals with the general situation of the country and the progress of the work during the year.

General Situation

The country has experienced a period of relative stability and progress during the year.

The main achievements of the year are the completion of the first phase of the project and the establishment of a permanent office.

The progress made during the year is due to the cooperation of the staff and the support of the government.

The results of the work are satisfactory and it is hoped that the second phase of the project will be completed soon.

The report concludes with a summary of the work done and a list of the documents and reports prepared.

THE FLORIDA BEDDING PLANT INDUSTRY

Cecil N. Smith, Willard T. Witte, and Marvin N. Miller

INTRODUCTION

Relatively little is known about the economic characteristics of the bedding plant segment of Florida's fast-growing ornamentals industry. Bedding plant growers propagate and sell flower, foliar (coleus, caladium, etc.), and vegetable plants used by homeowners and others for beautifying the landscape and for producing vegetables in home gardens.

This publication relates to economic activities of "traditional" bedding plant growers and not to growers who use the "Speedling" or related systems to produce seedling plants for use in commercial vegetable production. Information obtained from a group of growers of containerized vegetable transplants utilized in commercial production of truck crops is not reported in this publication.

Following requests by bedding plant growers in Florida for information on marketing practices, extent of the industry, resources used in production, and related economic factors, a list of all known commercial bedding plant growers in Florida was compiled in 1975. Visits were later made to commercial growers and data on economic aspects of the industry were recorded on survey forms. Several small growers could not be contacted or failed to cooperate; the estimates presented exclude data on their operations.

Data were tabulated and estimates made for value of sales, area in production, product mix, production expenses, and other attributes of

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Florida bedding plant growers. A preliminary report of findings was made in an earlier paper [3].

Beginning with the year 1976, the Crop Reporting Service of the U.S. Department of Agriculture began acquisition, publication, and analysis of data on area in production, number of producers, flats sold, average wholesale price, and value of sales at wholesale of (1) flowering and foliar and (2) vegetable bedding plants in 25 states. Comparative data for Florida and certain other states are presented in the U.S.D.A. report. This information is shown in summary form in the appendix to this report.

NATURE OF THE BEDDING PLANT BUSINESS

Bedding plant growers plan their operations to cater to a market which is seasonal in nature. Planning involves acquisition and management of the necessary seeds, soil mixes, watering apparatus, structures, equipment, and labor. Skilled management is necessary in planning and carrying out the manifold tasks involved in propagating bedding plants, growing them until ready for market, and then selling them.

Growers in Florida vary in size from one or two person operations to firms which employ 50 or more workers. The mix of plants grown and sold, the outlets to which they are marketed, the types of growing structures utilized, personnel practices in hiring labor, and many other practices vary greatly from grower to grower.

Production Area

More than 1,456,000 square feet--more than 33 acres--were devoted to the culture of traditional bedding plants in Florida in 1975 (Table 1). Some 37 percent consisted of open growing area (the major portion) or utilities, which include offices, machine sheds, shops, showroom and display areas, roadways, and soil mixing, storage, and related areas.

Table 1.--Area devoted to the culture of bedding plants in Florida, 1975

Type	Area		
	Sq. ft.	Acres	% of total
	-----No.-----		
Open growing area, utilities, ^a etc.	534,898	12.3	36.7
Fiberglass	440,955	10.1	30.3
Polyethylene	259,990	5.9	17.9
Lath	93,420	2.1	6.4
Saran	76,790	1.8	5.3
Cold frame	36,390	0.8	2.5
Glass	<u>13,600</u>	<u>0.3</u>	<u>0.9</u>
	1,456,043	33.3	100.0

^aIncludes offices, machine sheds, shops, showroom and display areas, roadways, and soil mixing, storage, and related areas.

Trends in Sales

Sales of traditional bedding plants by Florida growers rose from an estimated \$1,359,000 in 1971 to \$2,611,500 in 1975 and then to a level exceeding \$4 million in 1977 (Table 2). Data for the first five years were generated in the research study reported here, with the estimates for 1976, 1977, and 1978 coming from the Crop Reporting Service of the U.S. Department of Agriculture. Although the concepts in making the estimates were essentially the same, there may be differences in the two series due to variations in methods of data collection, definitions, and other factors.¹ For example, potted plants were included in overall sales in the University of Florida study.

In order to show the actual growth pattern of the Florida bedding plant industry with the effect of inflation removed, the sales data were converted into terms of 1978 dollars. The growth rate from one year to another is also presented in terms of constant dollars. Despite growth

¹Names of operators and data supplied by cooperators to the Crop Reporting Service are not made available to university researchers or other agencies and individuals.

Table 2.--Estimated sales of Florida growers producing traditional bedding plants, 1971 to 1978^a

Year	Actual	Adjusted		
		Value ^b	Index (1971-75 avg. = 100)	Change in sales ^b
	-----Dollars-----	No.	Percent	
1971	1,359,400	2,499,000	89	---
1972	1,476,800	2,595,000	93	4
1973	1,672,900	2,598,000	93	c
1974	2,455,000	3,209,000	114	24
1975	2,611,500	3,124,000	111	-3

1976 ^d	2,428,000	3,209,000	114	3
1977 ^d	2,225,000	2,398,000	85	-25
1978 ^d	4,049,000	4,049,000	144	69

^a1971 to 1975 estimates made from University of Florida study; 1976, 1977, and 1978 data from U.S. Department of Agriculture [4].

^bIn terms of 1978 dollars, with the sales value each year adjusted by the Index of Producer Prices (All Commodities) with 1978 = 100. (This was formerly known as the Index of Wholesale Prices.)

^cLess than 1 percent.

^dData presented are the sum of sales of (1) flowering and foliar and (2) vegetable bedding plants.

in constant dollars over the eight-year period of 62 percent, year to year changes ranged from -25 to 69 percent.

GROWER CHARACTERISTICS

Widespread differences in ownership characterized traditional bedding plant enterprises in Florida. Larger producers tended to be organized as corporations and smaller producers as proprietorships or partnerships. However, only two of the 19 businesses were in the last category. Most firms were involved in an additional business other than bedding plants. Most such involvement was related to ornamental horticulture production and/or sales.

The average grower spent roughly 55 percent of his time raising bedding plants. Some growers produced bedding plants only in their spare time while several operators worked full-time the year round in this endeavor. About half of the growers, previous to their entry into the bedding plant business, had been connected with firms that dealt with ornamental horticulture.

Growing Area

In 1975 Florida had 1,456,000 square feet--more than 33 acres--devoted to the production of bedding plants. The largest single category of this space was open area (used primarily for growing purposes), followed by fiberglass structures, polyethylene structures, lathhouses, saranhouses, cold frames, and glasshouses (Table 1, p. 3). In addition, growers reported another acre in utility, office, shop, storage, and soil mix areas.

In recent years (prior to 1975), additional areas were constructed in fiberglass, polyethylene, and saranhouses. Additional expansion had also taken place in open growing areas. The recent expansion, i.e., within the last year prior to the 1975 survey, had amounted to 4.8 acres. This constituted 14.6 percent of the 1975 production space.

At the time of the survey, an expansion of about 1.5 acres had already been planned for the following year in fiberglass, saran, and polyethylene structures. This represented an increase of about 4.6 percent of 1975 acreage.

Information for 1976 and 1977 on the growing area as well as other characteristics of the flower and foliar and also the traditional vegetable segments of the bedding plant industry, not only in Florida, but also elsewhere in the nation, is contained in the appendix. The Crop Reporting Service breaks data down into (1) flowering and foliar and (2) vegetable bedding plants.

Product Mix

Although chiefly producers of flowering bedding plants, the 19 Florida firms also produced some vegetable bedding plants, ferns, and other products. Flowers and flowering plants made up over half of the value of plants sold

by Florida bedding plant growers in 1974 (Table 3). Vegetables accounted for more than a third with the remainder allocated among ferns, hanging baskets, and potted plants.

Table 3.--Estimated product group sales mix of traditional bedding plant growers in Florida, 1974

Product	Value	
	Dollars	Percent
Flowers	1,363,000	55.5
Vegetables	901,000	36.7
Ferns	100,000	4.1
Hanging baskets	42,000	1.7
Potted plants	49,000	2.0
Total	2,455,000	100.0

Although no breakdown of the kinds of different plants produced was obtained, it is of interest to note that flowering bedding plants include celosia, geraniums, gerbera daisy, impatiens, marigold, petunia, salvia, snapdragon, and others. Foliar plants include asparagus fern, alternanthera, caladium, coleus, dusty miller, and others. (In this study flowering and foliar plants are included together as "flowers" or "flowering bedding plants.") Vegetable types embrace broccoli, cabbage, cauliflower, herbs, pepper, tomatoes, etc.

Plant Containers

Plastic flats and cell-packs were the largest single container types used in producing and marketing bedding plants in Florida. Seventeen of the 19 growers reported some use of plastic flats; however, most of the product was marketed in cell-packs. Cell-packs, in which plants are grown in separated cells divided into units of six or some other number, are commonly used in conjunction with plastic flats. Some growers used market-packs, i.e., small community containers similar in size to the cell-pack except that individual "cells" for each plant are absent. Three-fourths of the growers also reported some plants marketed in pots.

There was no definite preference among growers for number of plants per flat. Numbers from 12 plants per flat through 72 plants per flat were used; however, many growers opted for the latter. In this survey, eight of the 19 growers reported use of 72s with six firms using 48s. Over half of the flats produced by these firms were 72s, while over 17 percent were 48s.

Ten of the firms surveyed also produced some hanging baskets. Hanging basket production was limited as only 23,000 baskets were reported.

Potted plant production was reported by 15 of the 19 growers. More than 200,000 four-inch pots were raised while over 100,000 smaller ports were produced (Table 4). Five-to-six inch potted plants were also grown (53,700 pots reported).

Table 4.--Volume of potted plants, by sizes, reported sold by Florida bedding plant producers, 1974

Size	Growers		Pots sold	
	<u>No.</u>	<u>No.</u>	<u>No.</u>	<u>Percent</u>
2	2	10,000		2.7
3-3 1/2	7	91,800		25.2
4	9	209,400		57.4
5-6	7	53,700		14.7
Larger	1	N.A.		--
Total	--	364,900		100.0

Some bulk sales of vegetable plants, in which no flats or other containers were used, were also reported.

Plant Production by Flat Size

Nearly 37 million plants were reported grown by Florida bedding plant producers in 1974 (Table 5). The vast majority of these plants were produced in the 72-cell flat, i.e., in each plastic flat (ca. 11" x 22") containing 12 packs of six cells each in which individual plants were grown.

Table 5.--Number of plants produced in various sizes of flats by traditional bedding plant producers in Florida, 1974

Plants per flat	Flats produced		Plants produced	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
12	7,500	1.2	90,000	0.2
18	1,133	0.2	20,394	0.1
24	15,133	2.5	363,192	1.0
32	4,333	0.7	138,656	0.4
36	56,000	9.1	2,016,000	5.5
42	6,000	1.0	252,000	0.7
48	104,833	17.1	5,031,984	13.6
55	2,000	0.3	110,000	0.3
60	30,000	4.9	1,800,000	4.9
72	<u>386,200</u>	<u>63.0</u>	<u>27,086,400</u>	<u>73.4</u>
Total	613,132	100.0	36,908,626	100.0

While 63 percent of the number of flats produced consisted of the 72-size, 73 percent of the total number of bedding plants sold were grown in this size. Only three other sizes--the 48 (8 x 6 or 12 x 4), 36 (6 x 6), and 60 (10 x 6)--accounted for as much as 5 percent of the number of bedding plant flats marketed in 1974. The remaining six flat sizes for which grower sales were reported accounted for less than 3 percent of the plants sold.

PRODUCTION INPUTS

Expenses

Labor represented the largest single expense for growers, with this item costing 15.7 percent of sales (Table 6). Flats, packs, and other containers (not counting pots) followed at 8.7 percent of gross sales dollars. Soil media and seed were next in order, with 3.9 percent and 3.8 percent of sales, respectively. Other costs items each represented 2.2 percent or less of gross sales.

Industry averages showed that larger growers (sales of \$100,000 or more) typically experienced costs two to three times those of the smaller growers for each expense category. This was not the case, however, for pottery and water expenses. More of the smaller growers specialized in sales of potted

Table 6.--Selected expenditures by Florida firms selling traditional bedding plants, 1975

Item	Industry expenditures		Avg. expenditures per firm	
			All firms	Firms with sales of less than \$100,000
	Dollars ^b	% of total sales	Dollars ^b	Dollars
Labor	390,188	15.7	20,536	10,121
Flats, packs, etc.	216,798	8.7	11,410	2,569
Soil media	96,543	3.9	5,081	3,008
Seeds	94,688	3.8	4,984	2,177
Depreciation	55,962	2.2	2,945	1,707
Pots	51,610	2.1	2,716	2,855
Labels	33,725	1.4	1,775	296
Fertilizer	25,265	1.0	1,330	570
Electricity	24,852	1.0	1,308	352
Pesticides	19,287	0.8	1,015	162
Heating	12,275	0.5	646	231
Fumigants	2,852	0.1	150	73
Water	255	a	13	20
Miscellaneous	31,735	1.3	1,670	1,901

^aLess than 0.1 percent.

^bTotals are not shown as not all items of expense were included in the survey.

plants than larger growers. Some of the smaller growers (about 15.4 percent of them) relied on public water sources and therefore incurred charges while larger growers typically depended on internal sources of supply from wells.

The average grower spent 42.5 percent of his sales dollars on these expenses. Larger growers were much more cost efficient as they averaged only 36.6 percent of sales for these expenses while smaller growers allocated 64.1 percent of sales income for these expenses.

Structures

The most prevalent structures utilized in bedding plant culture were fiberglass, polyethylene, lath, and saran (Table 1, p. 3). Of the 921,000 square feet--21 acres--in various types of structures for bedding plants, nearly half were of fiberglass. Polyethylene made up 29 percent of the

structures and lath and saran 10 and 8 percent, respectively. The remainder consisted of cold frames and glass structures.

Equipment

The number and types of equipment used in the industry vary greatly. The only item of equipment that all growers had in common was a sprayer, with 1.9 units being the average utilized (Table 7).

Table 7.--Equipment used by selected traditional bedding plant growers in Florida, 1974

Item of equipment	Total firms using	Avg. units by using firms
	<u>No.</u>	<u>No.</u>
Sprayer	19	1.9
Truck/van	18	2.1
Pump	17	2.2
Trailer/cart	15	5.0
Tractor	14	2.1
Front-end loader	7	1.0
Fertilizer injector	7	1.7
Concrete mixer	6	1.2
Soil mixer	6	1.0
Elevator/conveyor	3	2.0
Pot/flat filler	3	1.0
Fork lift	2	5.0
Soil handling equipment	1	1.0

Trucks or vans (usually for delivery) were reported by 18 of the firms surveyed. There was an average of 2.1 units per firm.

Pumps were reported by 17 of the firms studied. With an average of 3.8 horsepower, 2.2 pumps were utilized in the typical bedding plant operation. Fertilizer injection systems and water supply were the chief uses of the pumps.

Fifteen firms reported the use of trailers or carts. Of the firms using this equipment, the average firm had five. This was biased, however, as the larger producers had a much heavier reliance on carts and trailers. Excluding the larger producers, the average firm used just over two carts and/or trailers.

The other largely used piece of equipment was the tractor. Fourteen firms reported using 29 tractors, giving an average use of just over two tractors per firm.

Media

Growers were by and large using soilless mixes for their bedding plants (Table 8). While over half of the growers were preparing these mixes on the premises, about a third were using commercially prepared (premixed) mixes which contained no soil. A few growers used topsoil mixes.

Table 8.-- Soil media utilized by traditional bedding plant growers in Florida, 1975

Type mix or media	Growers using
	<u>Percent</u> ^a
<u>Type mix</u>	
Premix ^b	31
Soilless mix ^c	53
Topsoil mix	16
No response	5
<u>Type media</u>	
Peat	53
Commercial	32
Perlite	21
Sand	21
Sawdust	16
Vermiculite	11
Manure	5
No response	16

^a Percentages do not add to 100 because growers may be using more than one type of mix or medium.

^b Premix is considered here as a commercially prepared mix purchased from a supplier. It may or may not contain soil.

^c Soilless mix is considered here as a mix with no soil prepared on the premises.

^d Topsoil mix is considered here as a mix with some soil prepared on the premises.

Over half of the growers used some peat in their mix. Other substances used include perlite, sand, sawdust, vermiculite, and soil. One grower reported using some manure.

Soil Sterilization²

Growers in the survey varied greatly in the methods utilized for sterilizing growing media. Five growers reported the use of chemical sterilants; two used raw steam and one aerated steam. Although several growers still used electric cookers for soil sterilization, some had turned to other methods because of the increasing cost of electricity. Several growers mentioned that no sterilization was used and/or needed because the media in use was naturally sterilized or was sterilized by the manufacturer. Still others reported the use of fungicidal drenches.

Seed Procurement

Thirteen of the 19 growers in the survey reported bulk seed purchases. An equal number reported seed purchases in small lots; hence some growers purchased seed in both manners. Growers who normally purchase in bulk are sometimes forced to buy in small quantities if shortages occur or when they need to obtain small lots of specific varieties. Several growers reported trouble in obtaining seeds of specific varieties in any amount. This problem was often noted for petunia varieties.

Three-fourths of the growers reported a need for some seed storage. Refrigerators or coolers were the most common seed storage location reported for 11 of the 19 growers. Six purchased seeds only in the planting season whereas two kept the seeds in an air conditioned house.

Labor

The equivalent of 180 man-years was devoted to the culture and marketing of bedding plants in Florida in 1974 (Table 9). Of this quantity,

²Soil sterilization is a term commonly used in the bedding plant and related industries for what is in actuality a soil pasteurization process.

Table 9.--Labor utilized by traditional bedding plant growers in Florida, 1974

Type labor	Time employed		
	Workers	Man-months	Man-years
	No.	No.	No.
Full-time hired ^a	138	1,390.5	115.9
Part-time hired	83	613.5	51.1
Owner or manager	14.5	105.5	8.8
Unpaid family	10	56.0	4.7
Total	245.5	2,165.5	180.5

^aIncluding foreman.

nearly two-thirds consisted of full-time hired labor; more than a fourth was part-time hired workers. The remaining 7 percent of the time worked consisted of contributions by owners or managers and unpaid family labor.

Personnel Policies

Length of Service of Labor.--Seven growers noted that all their employees had been with them for two or more years. Five reported 25 percent or fewer of their employees as having been on the job for this length of time. Approximately half of all the full-time workers had been with their employers for two or more years. Some employers stated that, due to local labor supply and demand conditions, it was necessary to provide higher wages or fringe benefits in order to attract and retain good workers.

Promotion Schedules.--Five of the 19 bedding plant firms--for the most part the largest ones--had promotion schedules for their employees. These had various provisions:

"Raise wages to keep good workers."

"Raise wages if a good job is done."

"According to production."

"Evaluate at end of 90 days and raise wages if satisfactory; also, at end of year."

"After trial period, give two automatic promotions, with further adjustments based on merit."

Fringe Benefits.--Among the fringe benefits provided workers of bedding plant firms were paid vacations, accident and health insurance, profit sharing, and bonuses.

Of the 19 firms surveyed, the number providing various fringe benefits was as follows:

Paid vacations	9
Accident and health insurance	5
Profit sharing	2
Bonuses	4

MARKETING PRACTICES

Marketing Season

Fall and spring are the major marketing seasons for Florida bedding plants. The following are the approximate amounts of Florida-grown bedding plants marketed in various seasons: fall--35 percent; winter--20 percent; and spring--45 percent. This pattern sets Florida apart from most of the rest of the country. However, the seasonal sales pattern of sales in north Florida resembles that of the rest of the country more than that in central and south Florida.

Substantial variation occurs between growers in their marketing patterns. Three growers marketed no plants in the fall, but all sold plants during a portion of the winter, with the winter-spring period being one marketing season. Four growers marketed plants in the summer, with proportions of yearly sales ranging from 5 to 10 percent.

Market Outlets

The two major outlets of traditional bedding plant growers in Florida were (1) chain and department stores and (2) garden centers and retail nurseries. Each of these purchased approximately 40 percent of the bedding plants sold by Florida growers in 1974 (Table 10).

The next two most important outlets were hardware stores and other growers. Each of these accounted for 6 percent of all sales made by growers.

Table 10.--Market outlets to which traditional Florida bedding plant growers sold their output, 1974

Outlet	Proportion of total sales
	<u>Percent</u>
Chain and department stores	40.4
Garden centers and retail nurseries	38.9
Hardware stores	6.1
Other growers	5.9
Jobbers	1.0
Contract buyers	0.7
Florists' shops	0.4
Agents	0.2
Grocery stores	0.2
Other	<u>5.8</u>
Total	100.0

Jobbers and contract buyers each purchased 1 percent of growers' bedding plant supplies. Agents and grocery stores each bought less than a half of 1 percent of the industry output.

Prices

When analyzing price data it is essential to remember that the data collected refer to the entire mix of all sizes of flats and not to any standard size. The data presented in Table 11 should be used only as a general gauge, noting that the average price data do not reflect plant numbers, sizes, quality, or varietal differences.

Distribution Area

Most Florida bedding plant growers distribute their product within the bounds of the metropolitan areas in which they are located or to market areas within a radius of 50 to 75 miles from their production facilities. A few of the larger growers make sales to buyers in the Atlanta area, other points in the Southeast, and to markets as far distant as Texas and Ohio.

Table 11.--Average prices for sales of bedding plants, pots, and hanging baskets by Florida bedding plant growers, 1974

Type container	Content or size	Price	
		Median	Average
		<u>Dollars</u>	<u>Dollars</u>
Flats	Flowers	3.60	3.54
	Vegetables	3.50	3.34
	Ferns	5.15	6.97
Pots	2"		.15
	3"-3 1/2"		.28
	4"		.59
	5"-6"		1.40
Hanging baskets	6"		1.70
	8"		2.90
	All		3.42

Competition

Small and medium-sized growers reported competition in most areas of Florida from larger in-state bedding plant producers who distribute their bedding plants throughout many of the states's markets. Also, in certain areas, competition came from bedding plant growers located in other states.

Many of the smaller and medium-sized growers reported that their prices were higher than those of the distant larger competitors who marketed plants in their local areas, but that they managed to sell their plants and retain customer goodwill due to high quality plants and service to buyers.

Overall, the average grower interviewed in the survey marketed \$130,982 in merchandise in 1974. If sales of the six largest growers are excluded, the average grower marketed \$49,612 in merchandise.

Marketing Problems

The bedding plant growers interviewed were asked the question, "What do you feel are the major problems in servicing your market?"

A listing of the responses made to the query follows:

<u>No. growers</u>	<u>Responses</u>
4	Heavy traffic slows down deliveries
4	No marketing problem if you have good quality
3	Rising costs of inputs, especially gasoline
2	Competition tough; prices too cheap
1	Slow driver
1	Shelves sometimes fall off in transit
1	Plants fail to arrive in good condition
1	It takes too much time to get plants inspected on delivery
1	Buyers need education so as to know more about plants and seasons
1	Need competent employees
1	Too much competition from chain stores
1	Plants have to be dumped because grower has to keep them rather than customer

Transportation Practices

Nearly 87 percent of the value of traditional bedding plants grown in Florida in 1974 was shipped in growers' trucks. Most growers run delivery routes in which they carry plants to their customers. Buyers' trucks hauled 11 percent, with the remaining 2 percent transported by hired trucks.

Dumping

The average amount of flower bedding plants produced which were dumped by the 19 growers was 6.4 percent. However, the range reported varied from none by two growers to as much as 25 percent by one operator. Two other growers reported the proportion dumped as 10 percent or more.

Dumping of vegetable plants on the average was a percentage point less, with 5.4 percent of the overall supply being dumped. Three growers reported no dumping of vegetables; three reported dumping of 10 percent or more.

Market Expansion

Of 19 traditional Florida bedding plant growers responding to the question, "Do you work with any of the following to encourage sales expansion?", 53 percent reported working with extension agents and 47 percent

with garden clubs (Table 12). Newspaper garden editors, civic groups, and television garden broadcasters were next in importance.

Table 12.--Responses to question, "Do you work with any of the following to encourage sales expansion?" by 19 Florida bedding plant growers, 1975

Agencies or groups	"Yes" responses	
	No.	Proportion reporting ^a
Extension agents	10	53
Garden clubs	9	47
Newspaper garden editors	7	37
Civic groups	4	21
Television garden broadcasters	3	16
Financial institutions	1	5
4-H, FFA, other school groups	1	5
Garden authors (books)	1	5
Radio announcers	1	5

^aOf 19 growers, five (26 percent) reported no type of activity to encourage sales expansion. Some growers reported two or more types of promotion activity; thus the total of the proportion reporting exceeds 100 percent.

The number of growers who worked with financial institutions, school groups (4-H, F.F.A., etc.), authors of garden books, and radio announcers in efforts to expand sales of bedding plants was one in each instance. Five growers--26 percent of the total--noted that they worked with none of these groups in sales expansion efforts.

It should be recognized that the market expansion activities carried out by growers may vary greatly in their relations with one type of agency or group in comparison with another. Too, one grower may cooperate or utilize an agency differently from another.

In designing the questionnaire utilized in the study it was visualized that the inclusion of extension agents as an agency or group working with growers to expand markets would relate to that function alone and not to the function of education. However, it is believed that some growers delineating extension agents as involved in sales expansion may have thought in terms of their overall educational effort rather than that of efforts to expand the value of product marketings.

Promotional Activities

When asked the open end question, "What do you do to promote consumer interest and sales expansion?", a variety of responses ensued. They ranged from growing quality plants to garden club visits to making brochures and booklets available to customers.

Reponses included the following:

1. Grow quality plants
2. Try to have new varieties
3. Make model ads
4. Assist regular customers with newspaper ads
5. Run ads in papers in season
6. Quality control
7. Visit garden clubs and be on program
8. Share poster with seed company and distribute
9. Replace "young lost plants with new plants"
10. Provide a good delivery service
11. Advertise free counseling to buyers of all phases of growing bedding plants
12. Make brochures and booklets about bedding plants available to customers

SUMMARY

Bedding plants constitute an increasingly important segment of Florida's vast ornamental horticulture industries. An economic study was made in 1975 to ascertain various economic characteristics, including extent of the industry, resources used in production, marketing practices, and related factors.

Nearly 1.5 million square feet--more than 33 acres--of land were devoted to the culture of traditional bedding plants in Florida in 1975. Nearly a third of this area was in fiberglass structures and almost 18 percent under polyethylene cover. Sales were estimated at \$2.6 million in 1975; a USDA report indicated a level in excess of \$4 million in 1977.

Of the 613,000 flats produced in 1974, the 72-plant flat size was the most popular. That size accounted for 63 percent of the number of flats and 73 percent of all plants produced.

Labor, with 180 man years used in bedding plant culture and marketing in 1974, represented the largest single expense item for growers. Labor costs amounted to 16 percent of sales. Items of equipment in most common

usage were sprayers, trucks or vans, pumps, trailers or carts, and tractors. Growers are generally using soilless mixes as growing media.

Fall and spring are the primary marketing seasons for Florida bedding plants. The approximate volumes marketed in various seasons were as follows: fall--35 percent; winter--20 percent; and spring--45 percent.

The major outlets to which traditional bedding plant growers in Florida marketed their products were (1) chain and department stores and (2) garden centers and retail nurseries. Each type of outlet purchased approximately 40 percent of the bedding plants sold by growers in 1974.

Most growers distributed their products within the bounds of the metropolitan areas in which they were located or to market areas within a radius of 50 to 75 miles from their production facilities. A few of the larger growers made sales to buyers in the Southeast and Midwest.

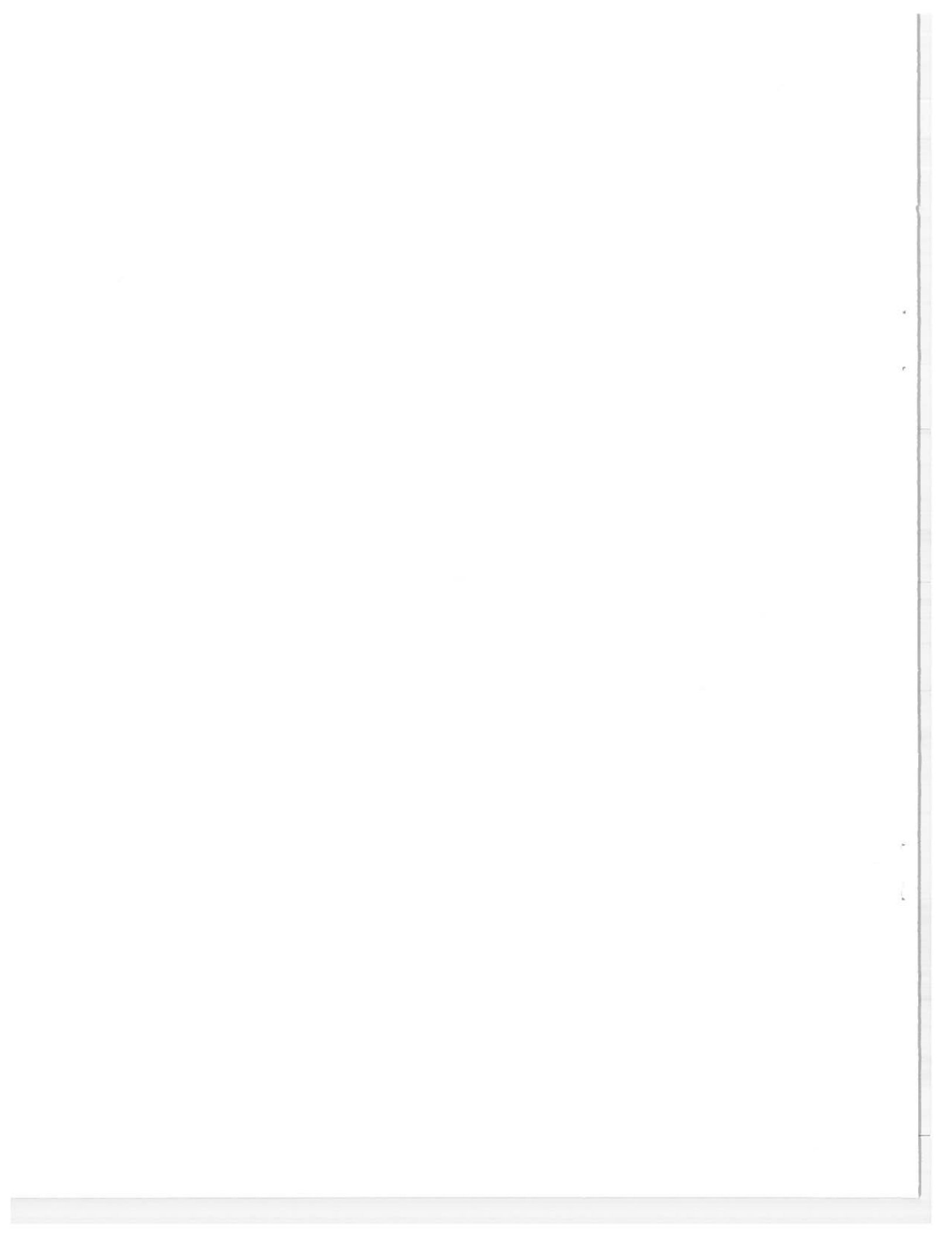
Nearly 75 percent of Florida bedding plants (in terms of value) was shipped in growers' trucks. The remainder was shipped in buyers' trucks and hired trucks.

With opportunities to expand business, growers are carrying out various promotion and other market expansion activities to achieve higher sales and profits. Available evidence indicated that larger firms were both relatively more efficient and profitable than firms with less than \$100,000 in annual sales.

BIBLIOGRAPHY

- [1] Jarvesoo, Elmar. "Economic Importance of the Bedding Plant Industry in the Bedding Plant Industry in the Northeast." Paper presented at Northeast Regional Meeting of the American Society for Horticultural Science, Amherst, MA, 23 Jan. 1976, pp. 6.
- [2] Smith, Cecil N. "The Southern Bedding Plant Industry," Proceedings of SNA Research Conference 23 (1978). McMinnville, TN: pp. 133-138.
- [3] Smith, Cecil N., Will T. Witte, and Fawzi A. Taha. "Some Economic Aspects of the Bedding Plant Enterprise in Florida," Proceedings of the Florida State Horticultural Society 88 (1976), pp. 549-551.
- [4] U.S. Crop Reporting Board. Floriculture Crops: Production Area and Sales, 1977 and 1978. Washington: U.S. Department of Agriculture, Mar. 1979, pp. 27.

APPENDIX



THE U.S. BEDDING PLANT INDUSTRY

As noted on page 3, the Crop Reporting Service of the U.S. Department of Agriculture in 1976 began the acquisition, analysis, and publication of data on the area in production, number of producers, flats sold, average wholesale price, and value of sales at wholesale of (1) flowering and foliar and (2) vegetable types of bedding plants in 25 selected states. Prior evidence, from the U.S. Department of Commerce Special Census of Horticultural Specialties and other sources, indicated that these 25 states accounted for 95 percent or more of the value of bedding plants marketed in the United States.

Only six Southern states--Florida, Texas, Georgia, North Carolina, Tennessee, and Virginia--are included in the group of states for which the U.S. Department of Agriculture releases estimates on the production and marketing of bedding plants.³ These six states in 1978 were reported to have 12 percent of the nation's producers, 12 percent of the production area, 12 percent of the flats sold, and 14 percent of the wholesale value of flowering and foliar bedding plants.

Bedding plant growers in the United States⁴ in 1978 had sales of more than \$129 million (Table A1). This represented a 37 percent rise from sales of \$94 million in 1976. Of the \$129 million in 1978, 75 percent consisted of flowering and foliar plants and the remaining 25 percent of vegetable types.

Although Texas and Florida ranked fifth and eighth in the nation in the total value of bedding plant sales in 1978, the six Southern states for which data were recorded accounted, as noted earlier, for only 14 percent of the total. On the other hand, California had much higher bedding plant sales than all six Southern states in 1977.

³ An earlier report of 1976 and 1977 developments is contained in [2].

⁴ Jarvesoo [1] in 1976 reported on the economic importance of the bedding plant industry in the Northeast.

Table A1.--Value of sales of all traditional bedding plants (flowering and vegetable) by growers in 25 states, 1976, 1977, and 1978

	Value of sales		
	1976	1977	1978
	-----\$1,000-----		
California	14,392	25,051	26,291
Michigan	13,922	14,809	16,770
Ohio	12,041	13,080	14,376
New York	6,829	6,858	8,870
Texas	3,514	4,388	5,778
Illinois	3,377	4,377	4,476
Pennsylvania	4,101	3,911	4,420
Florida	2,428	2,225	4,049
Wisconsin	2,659	2,549	3,837
North Carolina	2,004	2,142	3,616
Connecticut	2,348	2,612	3,525
Maryland	2,179	3,645	3,469
Massachusetts	3,967	3,752	3,293
Minnesota	2,505	3,984	3,289
Colorado	2,313	2,239	3,148
Washington	1,752	2,275	2,987
Missouri	2,718	2,817	2,637
Oregon	1,772	2,125	2,220
Virginia	1,599	1,929	2,169
New Jersey	1,437	2,142	2,156
Indiana	1,746	2,444	2,113
Tennessee	564	1,473	1,967
Georgia	1,189	2,165	1,712
Iowa	1,580	1,465	1,441
Kansas	406	519	576
Total	93,342	114,976	129,185

Source: Derived from [4].

Of the \$97 million in sales of flowering and foliar types of bedding plants in 1978, California was the leading state, followed by Michigan, Ohio, New York, Texas, Illinois, and Florida (Tables A2 and A3). Wholesale sales per producer averaged \$217,000 in Florida compared with \$370,000 in California and \$36,000 in the nation. No other state had average sales per producer in excess of \$100,000.

The \$6,040,000 of vegetable bedding plant sales (excluding field grown vegetable transplants for use in commercial vegetable production) in the South in 1977 made up 19 percent of the 25-state total marketings. The 265 growers in the South were 11 percent of the national number reported; average sales of \$24,000 per grower for the six Southern states were over 70 percent higher than the national figure of \$14,000 (Tables A4 and A5).

Table A2.--Flats sold, average wholesale price, and value of sales at wholesale of flowering and foliar types of bedding plants sold in selected states, 1976, 1977, and 1978

State	Flats sold			Wholesale price			Value of sales at wholesale		
	1976	1977	1978	1976	1977	1978	1976	1977	1978
	-----1,000 flats----			-----Dollars-----			-----\$1,000-----		
<u>Southern</u>									
Texas	500	578	743	4.40	3.90	4.83	2,200	2,254	3,589
Florida	532	740	813	3.18	2.34	3.73	1,693	1,732	3,032
North Carolina	343	350	633	3.70	3.95	4.12	1,269	1,383	2,608
Virginia	264	314	322	3.88	4.22	4.58	1,024	1,325	1,475
Georgia	239	487	339	3.54	3.53	3.80	846	1,719	1,288
Tennessee	103	235	283	3.54	3.75	4.45	364	881	1,259
<u>Subtotal or avg.</u>	1,981	2,704	3,133	3.58	3.46	4.23	7,397	9,294	13,251
<u>Other leading states</u>									
California	1,833	5,985	5,884	4.11	3.33	3.65	7,534	19,930	21,477
Michigan	3,475	3,583	3,852	2.95	3.05	3.31	10,251	10,928	12,750
Ohio	2,683	2,961	3,410	3.23	3.25	3.29	8,666	9,623	11,219
New York	1,233	1,268	1,442	3.78	3.74	4.25	4,661	4,742	6,129
Illinois	803	758	811	3.08	4.46	4.14	2,473	3,381	3,358
Maryland	680	481	620	2.38	6.42	4.87	1,618	3,088	3,019
<u>Subtotal or avg.</u>	10,707	15,036	16,019	3.29	3.28	3.27	35,203	51,692	57,952
Other 13 states	5,921	6,045	6,121	3.36	3.88	5.41	20,300	23,473	25,608
U.S.--25 states	18,609	23,785	25,273	3.38	3.55	3.83	62,880	84,459	96,811

Source: [4].

Table A3.--Number of producers, production area and average sales, at wholesale prices, per producer and per unit of production area, of flowering and foliar bedding plants sold in selected states, 1976, 1977 and 1978

State	Producers			Production area			Wholesale sales					
	1976	1977	1978	1976	1977	1978	1976	1977	1978			
	-----No.-----			1,000 sq. ft.			-----\$1,000-----			-----Dollars-----		
<u>Southern</u>												
Texas	28	38	47	1,262	1,550	1,200	79	59	76	.57	1.45	2.99
Florida	17	15	14	1,801	1,110	992	100	115	217	2.11	1.55	3.06
Georgia	79	95	66	453	956	544	11	18	20	.88	1.80	2.37
North Carolina	94	102	91	547	578	1,053	14	14	29	2.32	2.39	2.47
Virginia	36	42	40	474	531	575	28	32	37	2.80	2.50	2.57
Tennessee	29	50	51	169	458	507	13	18	25	2.16	1.92	2.48
<u>Subtotal or avg.</u>	283	342	309	3,706	5,183	4,871	26	30	43	2.00	1.79	2.72
<u>Other leading states</u>												
California	30	54	58	2,567	6,593	7,755	251	369	370	2.93	3.02	2.77
Michigan	285	336	319	6,380	5,854	6,651	36	33	40	1.61	1.87	1.92
Ohio	356	316	300	4,419	4,493	5,938	24	30	37	1.96	2.14	1.89
New York	331	353	354	1,992	2,002	2,357	14	13	17	2.34	2.37	2.60
Illinois	116	81	124	1,457	1,585	1,448	21	42	27	1.70	2.13	2.32
Maryland	51	53	52	1,188	796	768	32	58	58	1.36	3.88	3.93
<u>Subtotal or avg.</u>	1,169	1,193	1,207	18,003	21,323	24,917	30	43	43	1.96	2.07	2.33
Other 13 states	1,140	1,182	1,160	10,212	10,672	11,536	18	20	22	1.99	2.42	2.22
U.S.--25 states	2,592	2,717	2,676	31,922	37,178	41,324	24	31	36	1.96	2.27	2.34

Source: Derived from [4].

Table A4.--Number of producers, production area, and average sales, at wholesale prices, per producer and per unit of production area, of vegetable bedding plants sold in selected states, 1976, 1977, and 1978

State	Producers			Production area			Wholesale sales					
	1976	1977	1978	1976	1977	1978	1976	1977	1978			
	-----No.-----			1,000 sq. ft.			-----\$1,000-----			-----Dollars-----		
<u>Southern</u>												
Florida	10	8	9	231	299	299	50	62	113	2.16	1.65	3.40
Tennessee	26	47	45	94	327	266	8	13	16	2.12	1.81	2.66
Texas	20	32	45	574	896	845	66	67	49	2.29	2.38	2.59
Virginia	36	39	38	280	273	283	16	15	18	2.05	2.21	2.45
North Carolina	89	99	71	308	330	423	8	8	14	2.39	2.30	2.38
Georgia	70	61	57	198	251	180	5	7	7	1.73	1.78	2.36
<u>Subtotal or avg.</u>	251	286	265	1,685	2,376	2,296	15	18	24	2.18	2.12	2.63
<u>Other leading states</u>												
California	51	35	44	3,908	2,063	1,761	138	161	109	1.75	2.33	2.73
New York	301	333	316	974	1,012	1,164	7	6	9	2.23	2.09	2.35
Pennsylvania	143	131	154	740	575	655	9	10	10	1.80	2.17	2.26
Michigan	260	303	264	2,445	2,145	2,079	14	13	94	1.50	1.81	1.93
Ohio	342	298	261	1,836	1,665	1,681	10	12	9	1.84	2.08	1.88
Minnesota	64	127	99	399	555	369	12	9	11	1.85	2.00	1.83
<u>Subtotal or avg.</u>	1,161	1,227	1,138	10,302	8,015	7,709	16	14	14	1.76	2.11	2.19
Other 13 states	985	920	1,030	4,259	4,204	4,206	9	9	9	1.97	2.04	2.25
U.S.--25 states	2,397	2,433	2,363	16,246	14,595	14,211	13	13	14	1.86	2.09	2.28

Source: Derived from [4].

Table A5.--Flats sold, average wholesale price, and value of sales at wholesale of vegetable types of bedding plants sold in selected states, 1976, 1977, and 1978

State	Flats sold			Wholesale price			Value of sales at wholesale		
	1976	1977	1978	1976	1977	1978	1976	1977	1978
	<u>1,000 flats</u>			<u>Dollars</u>			<u>\$1,000</u>		
<u>Southern</u>									
Texas	296	441	493	4.44	4.84	4.44	1,314	2,134	2,189
Florida	136	184	272	3.67	2.68	3.74	499	493	1,017
North Carolina	196	182	274	3.75	4.17	3.68	735	759	1,008
Tennessee	57	165	167	3.49	3.59	4.24	199	592	708
Virginia	142	134	164	4.05	4.51	4.23	575	604	694
Georgia	94	125	113	3.65	3.57	3.75	343	446	424
<u>Subtotal or avg.</u>	921	1,231	1,483	3.98	4.08	4.07	3,665	5,028	6,040
<u>Other leading states</u>									
California	4,796	2,474	1,757	1.43	2.07	2.74	6,858	5,121	4,814
Michigan	1,288	1,281	1,237	2.85	3.03	3.25	3,671	3,881	4,020
Ohio	1,103	1,087	1,063	3.06	3.18	2.97	3,375	3,457	3,157
New York	589	551	651	3.68	3.84	4.21	2,168	2,116	2,741
Pennsylvania	421	290	344	3.17	4.31	4.30	1,335	1,250	1,479
Minnesota	168	282	188	4.40	3.93	3.59	739	1,108	675
<u>Subtotal or avg.</u>	8,365	5,965	5,240	2.17	2.84	3.22	18,146	16,933	16,886
Other 13 states	2,557	2,468	2,356	3.29	3.47	2.46	8,405	8,556	9,448
U.S.--25 states	11,843	9,664	9,079	2.55	3.16	3.57	30,216	30,517	32,374

Source: [4].



