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#### **Author**

Carman, Hoy F.

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**Department of Agricultural and Resource Economics  
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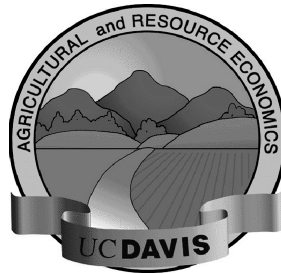
# **The California Nursery Industry, 2002-03: Value, Growth and Economic Impacts**

by

Hoy Carman

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**California Agricultural Experiment Station  
Giannini Foundation for Agricultural Economics**

**"THE CALIFORNIA NURSERY INDUSTRY, 2002-2003:  
VALUE, GROWTH AND ECONOMIC IMPACTS"**

by

**Hoy Carman\*\***

\*\*Hoy Carman is Professor of Agricultural and Resource Economics in the Department of Agricultural and Resource Economics, University of California, Davis, California.

**"The California Nursery Industry, 2002-2003: Value, Growth and Economic Impacts"**  
by  
**Hoy Carman<sup>1</sup>**

**INTRODUCTION**

The California nursery and floral industry is the largest in the United States, accounting for 22.2 percent of total 2002 U.S. receipts for nursery and floral production (USDA, 2003). The total value of California nursery and floral products grew from \$1.90 billion in 1992-1993 to \$3.31 billion in 2002-2003 (an increase of 74 percent). During the same time period, total California agricultural output grew from \$21.77 billion to \$30.64 billion (an increase of 40.7 percent). As a result, the nursery and floral share of California agricultural production grew from 8.7 to 10.8 percent while many other commodities remained stable or decreased. Within the state, total 2002 production of nursery products placed the nursery industry in third place (\$2.57 billion) and the floral industry in 11th place (almost \$730 million) among all California agricultural industries. When floral and nursery production are combined (\$3.31 billion), the industry ranks second among all California agricultural products, following the dairy industry, which was in first place with production value of \$3.79 billion in 2002 and it ranks ahead of the third place value of all grapes at \$3.16 billion. Commodities among the top ten in California that rank below floral and nursery products in terms of 2002-2003 value of production include (4) all cattle and calves, (5) lettuce, (6) almonds, (7) oranges, (8) alfalfa hay, (9) strawberries, and (10) cotton lint.<sup>2</sup>

Nursery and floral production is spread throughout California but is concentrated in the Southern and Central coastal counties. There were 11 counties with over \$100 million in nursery, flower and foliage production for 2002-2003. Coastal counties included in the top 11 include San Diego, Ventura, Orange, Monterey, Los Angeles, Santa Barbara, and San Mateo. There were only two Central Valley counties, San Joaquin and Kern, with production of more than \$100 million of nursery and floral products. Note that nine of the 11 counties with over \$100 million of nursery and floral production increased 2002-2003 value of production over the previous year. Two counties, Ventura and Santa Clara, had decreases. In contrast to most of California agricultural production, nursery and floral production is located in California's most populated counties. Almost 65 percent of California's 2003 population lived in the 11 counties with over \$100 million of nursery and floral production (Appendix Table 3).

California is the largest single market for lawn and garden products in the United States, accounting for 9.4 to 10.4 percent of total annual U.S. sales since 1997. The majority of California's nursery and floral products is sold to California consumers. Based on secondary sources, total 2002 California retail lawn and garden sales were estimated at \$8.958 billion and florist sales were almost \$1.00 billion for total estimated retail lawn, garden and floral product sales of over \$9.95 billion. The gross margin (retail sales minus cost of goods sold) on these sales was estimated at over \$3.7 billion.

The economic impacts of the nursery industry and lawn and garden retailing in California are dramatic and far-reaching. Overall, nursery and floral production and lawn and garden retailing contributed over \$10.49 billion to 2002 California output and were responsible for 171,571 jobs. Total value added attributed to California nursery and floral production and lawn and garden retailing was \$8.1 billion, while the labor income impact was almost \$5.0 billion.

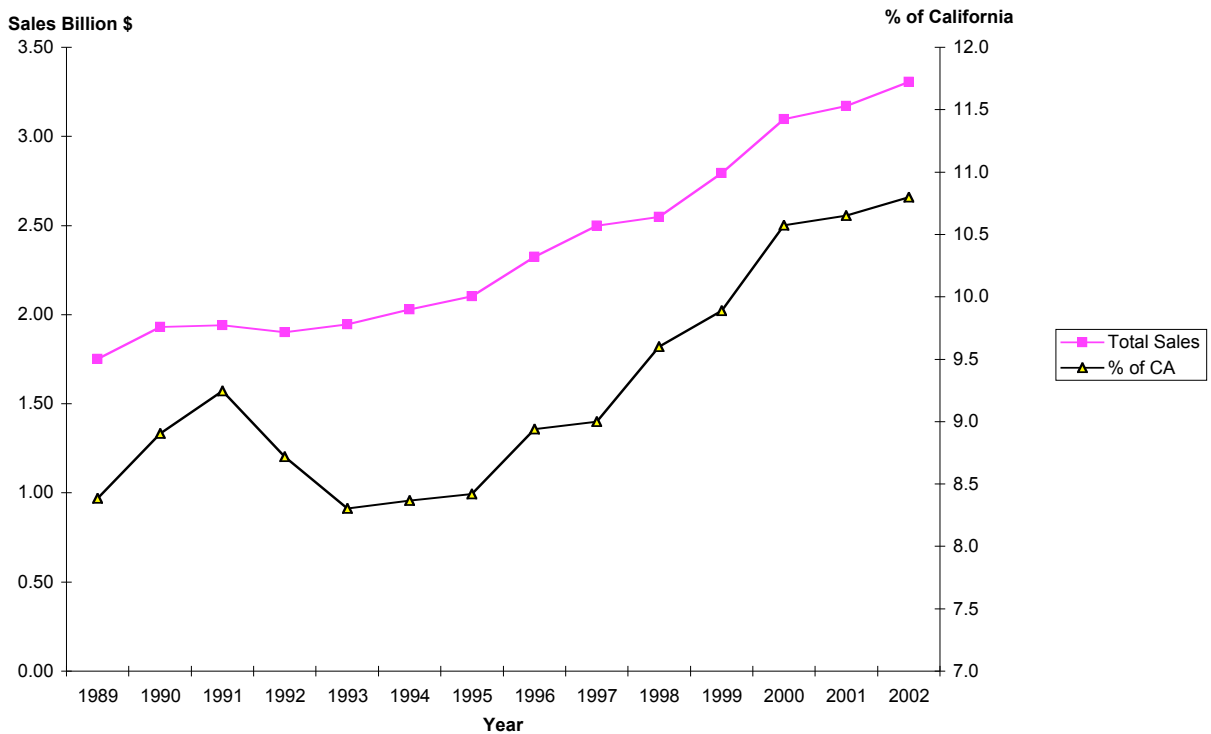
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<sup>1</sup> Research support was provided by a grant from California Polytechnic University Foundation of San Luis Obispo, California, with funding from the California Association of Nurseries and Garden Centers Endowment.

<sup>2</sup> These rankings, based on value of production, are from California Agricultural Statistics Service, Summary of County Agricultural Commissioners' Reports. They differ slightly from rankings based on sales shown in Appendix Table 1.

This report assembles the latest available statistics on the value, growth and economic impacts of the nursery industry and lawn and garden retailing in California.<sup>3</sup> Changes in the value of production for the nursery industry relative to California's total agricultural output are shown over time. Data on production by county and crops produced are also presented. Also included are data on retail sales and estimated margins. A regional economic model is used to trace the direct, indirect and induced multiplier effects of California nursery and floral production and lawn and garden retailing through the California economy.

**Figure 1. California Nursery and Floral Product Sales, Farm Value, and as a Percent of Total California Agriculture**



### Growth of the California Nursery Industry

As noted, production of the California nursery and floriculture industry has grown significantly over time, both in relation to other states and to the rest of California agriculture. Total U.S. cash receipts from floriculture and nursery crops grew from \$9.853 billion in 1994 to \$13.796 billion in 2002 (Table 1, USDA, 2003).<sup>4</sup> At the same time, California's share of U.S. grower cash receipts from floriculture and nursery crops grew from 20.2 percent in 1994 to 22.2 percent in 2002 (Table 3, USDA, 2003). California's 2002 share was almost double that of the next largest state, Florida, with 11.8 percent of U.S. grower sales. Other states in the top five included Texas (9.7 percent), North Carolina (6.1 percent) and Oregon (5.1 percent).

<sup>3</sup> This report uses 2002-2003 fiscal year data to update a more comprehensive study by Carman and Rodriguez that was based on 2001-2002 data series.

<sup>4</sup> Note that USDA reported cash receipts for the California nursery and floriculture industry are slightly less than the total value of California nursery and floral production reported by California Department of Food and Agriculture (CDFA). We use the CDFA data for the remainder of this report.

The value of floral products has remained rather stable over the last decade, while nursery products have increased. The total value of California nursery and floral products grew from \$1.75 billion in 1989 to \$3.31 billion in 2002 (an overall increase of 89 percent). The growth over time is shown in Figure 1. Total output dipped slightly from 1991 to 1992 and then grew steadily from \$1.938 billion in 1992. Total output increased 70.8 percent from 1992 through 2002 while real output (total revenue adjusted for price changes measured by the consumer price index) increased 35.8 percent. Also shown in Figure 1 is the nursery and floriculture industry's annual share of total California agricultural production. Note that nursery and floriculture's share of total agricultural output increased from 1989 through 1991, dropped to 8.3 percent in 1993, and then steadily increased to 10.8 percent of total California agricultural output in 2002. Total California agricultural output grew steadily from \$21.77 billion in 1992 to \$30.636 billion in 2002, with the only pause in year-to-year growth occurring in 1998. However, the 11-year growth of 40.7 percent for total agricultural output was less than the nursery growth of 70.8 percent, resulting in an increased share of total output for the nursery industry (Appendix Table 2).

**Table 1.**  
**California Production of Nursery, Flowers, and Foliage in 2001 and 2002 Top 15 Counties With 2002 Share of State Total**

<b>County</b>	<b>2001 Value of Production (\$1,000)</b>	<b>2002 Value of Production (\$1,000)</b>	<b>2002 Share of State Total (%)</b>
<b>Top 11 Counties</b>			
San Diego	855,139	879,126	26.56
Orange	218,833	232,096	7.01
Monterey	178,564	218,679	6.61
Ventura	223,368	214,245	6.47
Riverside	138,371	183,074	5.53
Los Angeles	172,046	177,117	5.35
Santa Barbara	131,419	149,263	4.51
San Mateo	136,613	144,035	4.35
Santa Clara	150,265	122,755	3.71
San Joaquin	99,224	119,072	3.60
Kern	114,599	115,383	3.49
San Luis Obispo	91,128	97,377	2.94
Stanislaus	68,960	85,889	2.59
Tulare	65,175	70,463	2.13
Santa Cruz	75,025	61,004	1.84
<b>Top 15 County Total</b>	<b>2,718,729</b>	<b>2,869,578</b>	<b>86.69</b>
<b>Rest of State</b>	<b>452,346</b>	<b>440,521</b>	<b>13.31</b>

*Source: California Agricultural Statistics Service, Summary of County Agricultural Commissioners' Reports, 2002, 2003.*

## **Location of Production**

Nursery products and/or flowers and foliage are produced in 55 of California's 58 counties but production tends to be concentrated in Central Coast and South Coast counties.<sup>5</sup> There were 11 counties with over \$100 million in nursery, flower and foliage production in 2002 (Figure 3). Seven of the 11 counties border the Pacific Ocean and Santa Clara County has a coastal type climate. Note that San Joaquin and Kern counties are the only Central Valley counties in the top 11. As shown in Table 1, San Diego County dominates the industry with over 26.5 percent of total production. The next five counties, Orange, Monterey, Ventura, Riverside and Los Angeles combine for 30.97 percent of total California production. The remaining five counties account for 19.66 percent of production. As shown, the 11 counties with production over \$100 million, accounted for over \$2.55 billion (77.19 %) of California's 2002 nursery, flower and foliage production. There were nine California counties with population exceeding 1 million persons in 2003. Five of these counties (Los Angeles, Orange, San Diego, Santa Clara, and Riverside) were among the largest nursery and flower producers (Appendix Table 3). The 11 largest nursery and flower producing counties accounted for almost 65 percent of California's 2002 population.

There were four counties with nursery, flower and foliage production in the range of \$50 to \$100 million. These four counties, San Luis Obispo, Stanislaus, Tulare and Santa Cruz accounted for 9.50 percent of total 2002 production. Overall, 15 counties produced 86.69 percent of California's total 2002 nursery, flower and foliage crops. Among these top 15 counties, nursery and floral crops were number one in value of production in San Diego, Orange, Los Angeles, Santa Clara and San Mateo counties.

Nursery, flower and foliage crops are very important agricultural products for several California counties that are not among the 15 largest value producers discussed above. For example, nursery crops are listed as the number one commodity in terms of gross value of production for five counties that are not included in the top 15. These counties include Alameda (\$14.2 mil), Contra Costa (\$35.4 mil), Del Norte (\$12.9 mil), Humboldt (\$35.3 mil), and Solano (\$38.8mil).

## **Crops Produced**

California nursery, flower and foliage producers market a tremendous variety of plant materials ranging from cut flowers, potted flowering plants, flower seeds, bedding and garden plants, bulbs, and ornamentals to fruit and nut trees and strawberry plants. Buyers include consumers, landscape contractors, institutions, and agricultural producers. The most recent data available indicate that the gross value of plant materials produced by the California nursery, flower and foliage industry in 2002-2003 totaled over \$3.3 billion. Values for the various categories of nursery products are shown in Table 2. Note that the value of cut flowers and cut greens increased 1.7 percent from 2001-2002 to 2002-2003, while flower seeds and Christmas trees both decreased. For nursery products, significant year-to-year increases in the value of (1) bulbs, corm, roots and tubers, (2) bedding plants, (3) rose plants, (4) woody, deciduous and evergreen ornamentals, (5) herbaceous perennials, and (6) turf and sod, were much greater than the decreases in other products, providing a 4.8 percent year-to-year increase for all nursery products.

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<sup>5</sup> The gross value of nursery, flower, and foliage production by county is in Appendix Table 2. Note that the County Agricultural Commissioners' Reports do not include nursery and flower sales for seven counties that do have producers listed in the CDFA 2003 Directory: Nurserymen and Others Licensed to Sell Nursery Stock in California. These counties and the number of producers include Colusa (1), Imperial (10), Kings (2), Modoc (3), Plumas (3), Tuolumne (6), and Yuba (5).

**Table 2.**  
**Wholesale Value of California Nursery Products by Major Categories 2001-2002 and 2002-2003**

<b>Floral Products</b>	<b>2001/2002 Value</b>	<b>2002/2003 Value</b>
Cut Flowers and Cut Greens	\$359,810,600	365,944,700
Flower Seeds	6,074,100	4,775,700
Christmas Trees	10,304,900	9,636,300
<b>Floral Products Total</b>	<b>376,189,600</b>	<b>\$380,356,700</b>
<b>Nursery Products</b>		
Potted Plants and Flowering Foliage	\$631,386,400	628,212,900
Bulbs, Corm, Roots and Tubers	35,712,300	38,961,600
Flowering Propagative Materials	75,700,800	71,976,600
Bedding Plants	480,438,100	509,310,000
Rose Plants	54,062,000	61,047,000
Woody, Deciduous and Evergreen Ornamentals	823,255,600	941,488,700
Herbaceous Perennials	36,175,500	39,134,900
Turf and Sod	56,724,700	74,853,100
Nursery Stock Other Than Ornamentals	598,606,600	561,484,100
<b>Nursery Products Total</b>	<b>\$2,792,062,000</b>	<b>\$2,926,468,900</b>
<b>Grand Total</b>	<b>\$3,168,251,600</b>	<b>\$3,306,825,600</b>

*Source: California Department of Food and Agriculture. Value of Nursery Products, Fiscal Year 2002/2003. CDFA Nursery Program, Nursery Advisory No. 8-2003, September 25, 2003.*

### **Marketing Channels**

The distribution of California floral and nursery product sales varies by product. A survey of California flower growers conducted in 2000 found that 59 percent of California produced flowers were sold in California, 40 percent were shipped to other states and 1 percent was exported to other countries (Prince and Prince). The spatial distribution of California nursery product sales, based on industry estimates, is approximately 79 percent in California, 20 percent shipped to other states, and 1 percent exported to other countries.

### **Retail Sales**

Several sources were utilized to develop the best possible estimates for this study. Partial data on retail floral and nursery product sales in California are available from government statistics. There are private data collection efforts and consultant reports that include retail sales that we will utilize and reference where appropriate.

The California State Board of Equalization publishes sales data by type of retail outlet but not by product line. There are annual retail sales data for florists and farm and garden supply stores, two types of stores that tend to specialize in floral and nursery products. There are also aggregate sales data for large multi-product retailers such as food stores, hardware stores, and general merchandise stores, but it is not possible to determine the share of floral and nursery product sales. Lacking more detailed retail data, industry members have developed their own rules-of-thumb for estimating total retail sales. One such estimate has simply doubled the reported sales for florists (based on the growing importance of



**Table 3.**  
**Statewide Taxable Sales by California Retail Florists and Farm and Garden Supply Stores, 1997 – 2002**

YEAR	FLORISTS	FARM and GARDEN	TOTAL
	-----thousand dollars-----		
1997	816,185	1,936,173	2,752,358
1998	843,978	1,967,564	2,811,542
1999	921,774	1,961,504	2,883,278
2000	983,396	2,060,713	3,042,436
2001	988,022	2,059,040	3,047,062
2002	998,781	2,135,472	3,134,253

Source: California State Board of Equalization.

flower sales by supermarkets) and farm and garden stores (based on the growth in floral and nursery sales by large retailers such as Home Depot, Lowe’s, Wal-Mart, Target, Price-Costco, and others that are not included). Retail sales reported by California florists and farm and garden supply stores for the five-year period 1997 through 2002 are shown in Table 3. Note that combined sales for the two types of stores shown in Table 3 increased from \$2.75 billion in 1997 to over \$3.13 billion in 2002. There were 5,474 sales tax permits for retail florists on July 1, 2002, up from 5,338 sales tax permits for July 1, 2001. The number of permits for farm and garden stores also increased from 3,711 on July 1, 2001 to 3,834 on July 1, 2002.

**Table 4**  
**Estimated Annual U.S. and California Lawn and Garden Retail Sales, 1997 – 2002**

YEAR	UNITED STATES	CALIFORNIA	CALIFORNIA
	-----million dollars-----		% of U.S.
1997	76,500	7,896	10.32
1998	79,100	8,154	10.31
1999	81,700	8,422	10.31
2000	84,600	8,798	10.40
2001	88,400	9,193	10.40
2002	94,900	8,958	9.44

Source: Nursery Retailer, Feb./March or March/April Issues, 1998 - 2003.

The *Nursery Retailer* publishes estimates of annual lawn and garden retail sales by state and also has an annual ranking of America’s 100 largest nursery retailers. California is the largest single market for lawn and garden products in the United States, accounting for 9.4 to 10.4 percent of total annual sales since 1997 (Table 4). Estimated 2002 California lawn and garden sales totaled \$8.958 billion out of the U.S. total of \$94.9 billion (Morey, p. 57). For the total U.S., the estimated total sales composition for the product lines carried by lawn and garden stores were: green goods, 40.0 percent; equipment and tools, 23.3 percent; chemicals and fertilizers, 16.9 percent; and lawn furniture, accessories and tree trim, 19.8 percent (Morey, p. 53).

## Market Shares

The location of consumer purchases of floral and nursery products have changed significantly over time in response to changes in the structure of retailing, competition in local markets and growing consumer demand. Greenidge, in a 1995 *Nursery Retailer* article (p. 52), listed three major lawn and garden products distribution channels with estimated 1994 market shares. The channels and shares were hardware/hardlines with 20.8 percent; garden centers/nurseries with 39.1 percent; and mass marketers/chain stores with 40.1 percent of the total market.<sup>6</sup> In 2002, only eight years later, the growth of “big box” home centers such as Home Depot and Lowe’s in the hardware category had increased its share to 47.8 percent of the total market. The independent sector’s share (garden centers, nurseries, and farm stores) decreased slightly to 38.1 percent; and, warehouse clubs, chain stores and mass merchandisers share (Wal-Mart and K-mart are the largest) plunged to 14.1 percent (Morey, 2003, p. 56). These changes in market share, while dramatic, are not surprising given the rapid growth in numbers of big box stores and typical sales of lawn, garden and nursery items in these stores. National data for example, estimate 2002 lawn and garden sales in the average Home Depot store at \$5.0 million annually while sales in the average Lowe’s store averaged \$5.1 million annually (Morey, Morey and Morey, 2003).

Retail florists are not included in the store types or total sales figures reported in Table 4. In addition, *Nursery Retailers’* independent sector (garden centers, nurseries, and farm stores) as discussed above undoubtedly includes more retailers than counted by the California State Board of Equalization in the farm and garden supply store category shown in Table 3. Retail florists have faced competition and loss of market share to other store types, especially supermarkets. We do not have market share data over time but we do have estimates of 2001 California floral market shares by type of retail outlet provided to us by The American Floral Endowment (AFE).

The AFE collects detailed data on retail flower sales from a national consumer panel and uses this panel data to develop timely detailed sales estimates for use by its subscribing members. Sales data are collected for three major types of flower products; cut flowers, flowering and greenhouse plants, and

**Table 5.**  
**Estimated Market Shares of Various Retail Store Types for Sales of Flower Products in California, 2001**

<b>Flower Product</b>	<b>Florist Shop</b>	<b>Garden Center</b>	<b>Discount Chain</b>	<b>Home Imprmnt/ Hardware</b>	<b>Super-market</b>	<b>Warehouse/ Price Club</b>	<b>Other Store</b>
	-----market share percent-----						
Cut Flowers	47.4	0.6	0.7	0.2	25.9	8.3	16.9
Flowering and Greenhouse Plants	12.7	19.0	6.7	20.9	20.5	3.4	16.8
Outdoor Garden/Bedding	0.7	39.5	7.8	37.4	2.6	0.4	11.6

*Source: From sales estimates provided by The American Floral Endowment, Glen Carbon, IL.*

<sup>6</sup> Greenidge noted that garden centers, nurseries, and farm stores had about 60 percent of the market in 1980.

outdoor garden and bedding plants. These three floral product categories accounted for 43, 23, and 32 percent, respectively, of estimated total 2001 California retail flower sales. The importance of the various retailers varies significantly by flower product category.

The dominant outlets for cut flowers were florist shops with a 47.4 percent market share, followed by supermarkets with a 25.9 percent share (Table 5). Home improvement/hardware stores, supermarkets and garden centers each retailed about one-fifth shares of flowering and greenhouse plants. Garden centers and home improvement/hardware stores had the dominant market shares for outdoor garden and bedding plants in California.

### Retail Margins

Gross profit margins (sales revenue minus cost of goods sold) vary across retail store types and among stores within a given type because of factors such as firm size, location, services provided, product mix, product perishability, and competitive conditions. Estimates of gross margins are an essential component for deriving estimated economic contributions of California’s floral and nursery industry. Estimated gross margins and 2002 retail sales are shown in Table 6. Gross margins range from a low of 30 percent for the largest volume retailers (hardware/home centers) to a high of 50 percent for retail florists. Note that these are estimated averages for the categories, with individual stores within a category ranging above and below the estimate. The weighted average retail gross margin is 37.5 percent. Total 2002 California retail lawn and garden sales were estimated at \$8.958 billion and florists sales were almost \$1.00 billion for total estimated retail lawn, garden and floral product sales of almost \$10.0 billion (Table 6).

**Table 6.**  
**Estimated Percentage Gross Margin for Floral and Nursery Products by Retail Store Type, Estimated Total Floral and Nursery Sales and Total Margin, California, 2002**

Retail Store Type	Gross Margin	2002 Retail Sales	Total Margin
	%	\$ million	\$ million
Hardware/home centers	30.0	4,281.924	1,284.5772
Independent farm/garden	45.0	3,412.998	1,535.8491
Chain/warehouse	33.0	1,263.078	416.8157
Florists	50.0	998.781	499.3905
<b>TOTAL</b>	<b>37.5</b>	<b>9,956.781</b>	<b>3,736.6325</b>

*Source: Gross margin estimates provided by members of California Association of Nurseries and Garden Centers; retail sales estimates are from Nursery Retailer and California State Board of Equalization (Tables 3 and 4).*

### ESTIMATED ECONOMIC IMPACTS

California’s floral and nursery sector is closely intertwined with other sectors of the state’s economy, and changes in flower and nursery production have ripple effects throughout the state. Each dollar earned in the floral and nursery sector stimulates economic activity in the form of jobs, income and output. The effects of changes in floral and nursery production on total economic activity are estimated through multipliers developed from input-output models. For this study, we use the IMPLAN system developed by the U.S. Forest Service/U.S. Department of Agriculture to estimate economic input-output

models for individual California counties and the state.<sup>7</sup> The input-output models provide detailed economic multipliers for greenhouse/nursery production and retailing as well as all other sectors of the California economy. A brief description of the IMPLAN system is included as Appendix Table 4.

### Economic Multipliers

An IMPLAN model of the California economy was constructed. IMPLAN multipliers for California nursery production and retailing estimate three components of total change for the State. The estimated multipliers for California nursery production and lawn and garden retailing are in Table 7. The direct effects are for the initial change in nursery production or retailing; the indirect effects are changes in inter-industry transactions as supplying industries respond to increased demands from nursery production or retailing; and, induced effects are for changes in local spending that result from income changes in the directly and indirectly affected industry sectors. The sum of direct, indirect and induced effects is the total effects multiplier. We estimate Type SAM multipliers for output, employment, value-added and labor income.

**Table 7.**  
**Estimated IMPLAN Multipliers for California Nursery Industry**

Type/Sector	Direct Effects	Indirect Effects	Induced Effects	Total Effects
<b>OUTPUT</b>				
Nursery	1.0000	0.1646	0.3407	1.5053
Retail	1.0000	0.0999	0.3760	1.4759
<b>EMPLOYMENT (jobs/\$mil)</b>				
Nursery	19.9723	2.1496	3.4478	25.5696
Retail	18.4669	1.0159	3.8046	23.2874
<b>VALUE ADDED</b>				
Nursery	0.8084	0.1029	0.2120	1.1232
Retail	0.8816	0.0626	0.2339	1.1781
<b>LABOR INCOME</b>				
Nursery	0.4752	0.0657	0.1318	0.6727
Retail	0.5551	0.0393	0.1455	0.7399

Source: Minnesota IMPLAN Group (MIG), Inc., Stillwater, MN, 2003.

Lindall and Olson describe the IMPLAN multipliers (pg. 13-15). Type SAM multipliers are the direct, indirect, and induced effects where the induced effect is based on information in the social account matrix. This relationship accounts for social security and income tax leakage, institution savings, and commuting. Interpretation of the tabled multipliers follows:

- Output multipliers relate the changes in sales to final demand by one industry (nursery or retail) to total changes in output (gross sales) by all industries within the local area. An industry output multiplier of 1.50 would indicate that a change in sales to final demand of \$1.00 by the industry in question would result in a total change in local output of \$1.50.

<sup>5</sup> We use the IMPLAN PRO software licensed from MIG, Inc. and the associated databases for California. For a detailed description of the software and data see, *Implan Professional Social Accounting and Impact Analysis Software User's Guide, Analysis Guide and Data Guide, 2<sup>nd</sup> Edition*, 1997, MIG, Inc., Stillwater, MN. (<http://www.implan.com>)

- Labor income and employment multipliers relate the change in direct production to changes in labor income and employment within the local economy. For example, a labor income multiplier for a direct industry change of 1.75 indicates that a \$1.00 change in output in the direct industry will produce an employment income change of \$1.75 in the local economy. Similarly, an employment multiplier of 25.0 indicates that 25 jobs are created for each one million dollars of output by the industry.
- Value added multipliers are interpreted the same as labor income and employment multipliers. They relate changes in sales in the industry experiencing the direct effect to total changes in value added for the local economy. Value added includes employee compensation, proprietary income, other property type income, and indirect business taxes.

### Estimated Economic Impacts

The economic multipliers in Table 7 are combined with floral and nursery sales at the producer level and lawn, garden and floral retail gross margins to estimate total contributions of the industry to the California economy. Procedures and important assumptions used to estimate economic impacts follow. First, the direct effects multipliers of 1.0 for nursery and retail output are applied to the total 2002 wholesale value of California nursery products and gross margins for lawn and garden retailing. The total effects multiplier, which includes the indirect and induced output multipliers, is applied to the direct output to obtain total output. Second, the direct effects for employment, value added, and labor income are all derived from the direct output values.

Estimated total economic impacts of California flower and nursery production and lawn and garden retailing are shown in Table 8. Note that the direct output effects, from Table 3 and Table 7, total \$7.04

**Table 8.**  
**Estimated Direct and Total Economic Effects of California Flower and Nursery Production and Lawn and Garden Retailing, 2002**

Type/Sector	Direct Effects	Total Effects
<b>OUTPUT (\$ million)</b>		
Nursery	3,306.8256	4,977.7646
Retail	3,736.6325	5,514.8959
Total	7,043.4581	10,492.6605
<b>EMPLOYMENT (jobs)</b>		
Nursery	66,045	84,554
Retail	69,004	87,016
Total	135,049	171,571
<b>VALUE ADDED (\$million)</b>		
Nursery	2,673.2378	3,714.22651
Retail	3,294.2152	4,402.12675
Total	5,967.4530	8,116.35326
<b>LABOR INCOME (\$million)</b>		
Nursery	1,571.4035	2,224.50158
Retail	2,074.2047	2,764.73439
Total	3,645.6082	4,989.23597

billion. The indirect and induced economic multiplier effects expand the total California output effect to \$10.49 billion. Based on reported input-output relationships, flower and nursery production generates a total of 84,554 jobs in California while lawn and garden retailing add another 87,016 jobs for a combined total of 171,571 California jobs. The estimated payroll for the two sectors totaled almost \$4.99 billion, with \$2.2 billion from floral and nursery production and almost \$2.8 billion from lawn and garden retailing. Total value added for the two sectors was just over \$8.1 billion with over \$3.7 billion from floral and nursery production and a little over \$4.4 billion from lawn and garden retailing. The difference between total effects and direct effects for each row in Table 8 is the sum of indirect and induced effects.

### **CONCLUDING COMMENTS**

The California nursery and floral industry has demonstrated significant growth during the last two decades in both real terms and relative to all of California agriculture. Dimensions of this growth include expansion in the number and average size of farms producing nursery and floral products, a three-fold increase in crop revenues, and growth to 10.8 percent of the total value of California agricultural output. Recent growth of output has come primarily from nursery production. The flower industry, and cut flowers in particular, have faced significant competition from imports from Colombia, Costa Rica, Ecuador, Mexico and the Netherlands.

Data for the nursery and floral industries are typically reported separately. Annual County Agricultural Commissioners' reports have ranked the nursery industry in third place among all California commodities, in terms of value of production, since 1994 with the flower industry ranking from 8<sup>th</sup> to 11<sup>th</sup> place. Recently, the combined nursery and floral industries have ranked second among all California agricultural products. At the national level, California's nursery and flower industry leads the nation with Florida in a distant second place.

Nursery and flower production is located in 55 of California's 58 counties. As noted, nursery and flower production tends to be concentrated in coastal counties ranging from San Mateo County in the north to San Diego County in the south. Fifteen counties account for over 86 percent of total production. Nursery and flower production was the number one agricultural product in terms of value of production in 10 counties, with values ranging from over \$879 million in San Diego County to almost \$13 million in Del Norte County in 2002. The location of many nursery and flower producers in the most urbanized areas of California is a distinguishing feature of the industry. These producers are close to many of their customers, helping them deliver quality product and minimize distribution costs.

The large, growing and economically important nursery and flower production sector is accompanied by a large and growing retail sector. California is the largest single market for lawn and garden products in the United States, with 2002 retail sales estimated at almost \$10.0 billion. The combined effects of nursery and flower production and lawn and garden retailing on the California economy are huge.

The total economic impacts of California flower and nursery production and lawn and garden retailing were estimated at over \$10.49 billion in 2002. Based on reported input-output relationships, flower and nursery production generates a total of 84,554 jobs in California while lawn and garden retailing add another 87,016 jobs for a combined total of 171,571 California jobs. This was 1.18 percent of total California employment in 2002. The estimated payroll for the two sectors totaled almost \$5.0 billion, with \$2.2 billion from floral and nursery production and almost \$2.8 billion from lawn and garden

retailing. Total value added for the two sectors was just over \$8.1 billion with \$3.7 billion from floral and nursery production and a little over \$4.4 billion from lawn and garden retailing.

The important message that the nursery and flower industry should be delivering to policy makers, agricultural leaders and the general public at every available opportunity is that the industry is large, growing and economically important. In terms of total output, the California nursery industry is exceeded only by the dairy and grape industries, and when the nursery and flower industries are combined, their output is exceeded only by the dairy industry. Nursery and flower production exceeds the output of many large, well-known, and world-class California agricultural industries, including for example, lettuce, cattle, strawberries, tomatoes, almonds, cotton, chickens, oranges, broccoli, carrots, walnuts, avocados, celery, melons and peaches. Recently, over \$1.08 out of every \$10 of California agricultural gross sales was from nursery and flower products. And finally, more than one out of every hundred jobs in California during 2002 could be attributed to the direct and indirect impacts of California nursery production and retailing.

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## APPENDIX TABLES

**Appendix Table 1.**  
**California's Top 20 Commodities, With Value of Sales and Rank for 1999 - 2002**

Commodity	1999	2000	2001	2002
	<b>Value (\$ million) and Rank</b>			
Milk and Cream	4,091 (1)	3,707 (1)	4,630 (1)	3,812 (1)
Grapes, all	2,656 (2)	2,829 (2)	2,651 (2)	2,579 (2)
Nursery	2,009 (3)	2,247 (3)	2,087 (3)	2,348 (3)
Lettuce, all	1,130 (5)	1,494 (4)	1,370 (4)	1,278 (4)
Cattle and Calves	1,223 (4)	1,218 (5)	1,352 (5)	1,229 (5)
Almonds	688 (10)	666 (11)	732 (10)	1,190 (6)
Strawberries	904 (7)	840 (8)	841 (8)	991 (7)
Flowers	776 (8)	931 (7)	998 (7)	949 (8)
Tomatoes, all	1,118 (6)	948 (6)	766 (9)	926 (9)
Hay, all	767 (9)	769 (9)	1,021 (6)	914 (10)
Cotton, all	672 (11)	720 (10)	658 (11)	623 (11)
Oranges, all	404 (15)	346 (14)	514 (13)	559 (12)
Broccoli	433 (14)	574 (12)	438 (14)	488 (13)
Carrots, all	434 (13)	322 (17)	434 (15)	460 (14)
Chickens, all	515 (12)	471 (13)	532 (12)	452 (15)
Avocados	327 (16)	340 (15)	316 (17)	358 (16)
Pistachios				336 (17)
Potatoes, all				307 (18)
Walnuts	251 (19)	296 (18)	342 (16)	305 (19)
Lemons				287 (20)

*Source: CDFR Resource Directory, p. 30.*

Note that annual commodity rankings in Table 1 are based on value of sales. Rankings based on the Summary of County Agricultural Commissioners' Reports published by CASS typically have some differences in rankings based on gross value of agricultural production, since estimated sales and estimated gross value of production differ, with the amount depending on the particular commodity. The annual ranking for flowers is usually higher in the sales ranking than in the gross value of production ranking.

**Appendix Table 2.**  
**Value (\$1,000) of California Nursery, Flower and Foliage Production by County, 1993-2002**

COUNTY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
				\$1,000						
Alameda	31,873	34,641	28,933	25,211	25,215	17,421	19,058	14,049	15,108	14,229
Amador	22	30	33	48	130	174	209	216	241	191
Butte	6,351	6,400	7,437	4,485	5,350	3,610	6,400	5,961	8,555	7,178
Calaveras	585	856	864	883	896	740	597	452	543	545
Colusa	0	0	0	0	0	0	0	0	0	0
Contra Costa	24,940	25,409	21,782	26,219	31,288	30,663	28,202	32,105	37,510	35,385
Del Norte	9,721	11,357	10,895	10,683	12,415	13,322	14,831	15,427	16,151	12,935
El Dorado	4,166	3,540	4,149	4,302	4,374	4,114	4,855	5,812	5,988	5,662
Fresno	21,294	23,945	16,211	16,847	36,837	29,576	32,531	28,905	32,014	32,407
Glenn	2,403	2,340	2,178	2,165	2,461	2,615	3,503	3,258	4,238	4,070
Humboldt	20,940	20,940	17,419	17,419	22,577	23,227	25,806	32,859	33,952	35,321
Imperial	0	0	0	0	0	0	0	0	0	0
Inyo	1,109	1,324	1,525	3,485	2,341	2,897	2,981	3,515	4,020	3,810
Kern	59,536	62,891	68,710	72,383	79,629	82,636	99,129	106,246	114,599	115,383
Kings	1,958	2,343	0	0	0	0	0	0	0	0
Lake	332	326	6	12	408	408	408	408	3,120	3,241
Lassen	10,440	12,329	10,683	8,702	9,512	7,702	11,609	12,336	9,860	5,429
Los Angeles	147,068	153,625	156,909	166,086	172,577	186,660	180,790	170,185	172,046	177,117
Madra	3,855	3,160	3,470	5,324	4,541	15,128	30,200	37,500	24,543	18,271
Marin	1,199	1,000	556	576	547	683	708	814	675	725
Mariposa	93	95	100	108	108	99	136	152	147	150
Mendocino	2,123	2,296	2,510	3,092	3,117	2,685	2,620	2,550	2,790	3,267
Merced	14,603	14,923	14,093	14,265	15,833	19,007	23,747	21,758	22,233	21,991
Modoc	0	0	0	0	0	0	0	0	0	0
Mono	0	0	0	0	0	0	0	0	0	0
Monterey	116,515	105,514	111,199	114,176	135,893	154,297	180,822	194,252	178,564	218,679
Napa	2,666	2,615	2,881	2,181	2,749	3,804	3,156	3,250	4,720	4,655
Nevada	509	522	639	564	752	594	633	515	334	346
Orange	117,405	127,988	132,780	143,537	165,727	168,387	200,966	214,877	218,833	232,096
Placer	7,825	7,825	8,856	9,513	10,245	10,797	12,090	11,505	12,854	15,080
Plumas	1,400	1,475	0	0	0	0	0	0	0	0
Riverside	47,551	79,537	71,169	81,943	82,827	94,549	90,377	107,520	138,371	183,074
Sacramento	16,643	9,910	9,582	15,745	15,969	17,933	17,113	26,408	28,968	26,378
San Benito	23,364	19,384	14,992	15,350	15,668	16,985	19,682	28,428	25,207	28,966
San Bernardino	21,517	22,915	21,906	22,890	23,303	21,718	26,458	29,502	34,617	42,438
San Diego	556,921	585,433	643,193	692,106	704,988	722,186	773,081	790,140	855,139	879,126
San Francisco	530	475	564	702	482	447	759	727	913	613
San Joaquin	53,722	58,538	63,601	97,916	97,059	74,115	81,937	88,257	99,224	119,072
San Luis Obispo	39,301	44,585	49,607	55,546	65,188	70,155	85,149	89,168	91,128	97,377
San Mateo	164,707	165,401	161,611	169,657	171,854	142,460	142,842	154,756	136,613	144,035
Santa Barbara	86,755	78,753	95,244	122,857	139,849	130,038	135,042	150,669	126,846	149,263
Santa Clara	46,228	45,666	40,522	42,824	40,740	45,446	48,467	177,146	150,265	122,755
Santa Cruz	48,174	43,859	51,762	62,972	73,110	56,686	71,562	76,556	75,025	61,004
Shasta	8,229	9,622	9,502	8,865	8,674	8,462	9,534	8,212	8,830	8,757
Sierra	420	443	0	0	0	0	0	0	0	0
Siskiyou	6,566	7,939	9,962	14,526	16,722	17,844	20,695	25,076	30,789	26,151
Solano	14,512	17,345	19,715	22,348	24,078	26,408	28,978	35,045	37,668	38,781
Sonoma	29,297	28,797	30,996	33,078	27,427	27,836	23,133	33,272	30,069	26,067
Stanislaus	28,062	30,906	29,793	32,180	35,553	36,758	64,111	68,642	68,960	85,889
Sutter	8,888	9,116	10,129	7,502	11,839	9,891	11,819	8,025	9,387	8,929
Tehama	867	765	1,228	1,131	1,225	1,651	1,367	1,309	1,991	2,102
Trinity	32	32	35	35	35	37	32	32	32	32
Tulare	22,255	24,176	28,524	43,399	51,823	65,306	69,682	72,730	65,175	70,463
Tuolumne	0	0	0	0	0	0	0	0	0	0
Ventura	105,417	111,230	108,387	124,123	138,808	162,063	180,624	204,828	223,368	214,245
Yolo	3,746	4,514	5,584	5,028	5,603	2,771	4,954	4,533	6,991	6,420
Yuba	0	0	0	0	0	0	0	0	0	0
<b>Total Calculated</b>	<b>1,944,635</b>	<b>2,029,050</b>	<b>2,102,426</b>	<b>2,324,989</b>	<b>2,498,346</b>	<b>2,532,991</b>	<b>2,793,385</b>	<b>3,099,888</b>	<b>3,169,214</b>	<b>3,310,100</b>
<b>Total Reported</b>	<b>1,944,632</b>	<b>2,029,646</b>	<b>2,102,425</b>	<b>2,324,650</b>	<b>2,498,345</b>	<b>2,547,817</b>	<b>2,793,384</b>	<b>3,096,592</b>	<b>3,169,213</b>	<b>3,310,099</b>
<b>TOTAL CA AGRI</b>	<b>23,697,420</b>	<b>24,373,778</b>	<b>24,947,169</b>	<b>26,260,004</b>	<b>28,048,589</b>	<b>26,950,521</b>	<b>28,647,905</b>	<b>29,349,616</b>	<b>29,717,181</b>	<b>30,635,532</b>

Source: Summary of California Agricultural Commissioner's Reports.

**Appendix Table 3.**  
**Population and Value of Nursery and Floral Production by County, California, 2002-2003**

COUNTY	POPULATION July 1, 2003	VALUE OF NURSERY PRODUCT \$1,000	COUNTY	POPULATION July 1, 2003	VALUE OF NURSERY PRODUCT \$1,000
ALAMEDA	1,495,400	14,229	ORANGE	3,001,300	232,096
ALPINE	1,210	N/A	PLACER	285,400	15,080
AMADOR	37,050	191	PLUMAS	21,150	0
BUTTE	212,400	7,178	RIVERSIDE	1,758,700	183,074
CALAVERAS	43,550	545	SACRAMENTO	1,331,500	26,378
COLUSA	20,000	0	SAN BENITO	56,600	28,966
CONTRA COSTA	1,003,800	35,385	SAN BERNARDINO	1,869,300	42,438
DEL NORTE	28,100	12,935	SAN DIEGO	2,989,300	879,126
EL DORADO	168,200	5,662	SAN FRANCISCO	786,900	613
FRESNO	855,400	32,407	SAN JOAQUIN	625,600	119,072
GLENN	27,600	4,070	SAN LUIS OBISPO	257,500	97,377
HUMBOLDT	129,400	35,321	SAN MATEO	712,800	144,035
IMPERIAL	153,600	0	SANTA BARBARA	412,100	149,263
INYO	18,550	3,810	SANTA CLARA	1,723,900	122,755
KERN	717,300	115,383	SANTA CRUZ	259,200	61,004
KINGS	138,700	0	SHASTA	175,500	8,757
LAKE	62,300	3,241	SIERRA	3,520	0
LASSEN	34,600	5,429	SISKIYOU	45,050	26,151
LOS ANGELES	10,047,300	177,117	SOLANO	416,500	38,781
MADERA	133,900	18,271	SONOMA	473,300	26,067
MARIN	250,300	725	STANISLAUS	489,400	85,889
MARIPOSA	17,850	150	SUTTER	84,900	8,929
MENDOCINO	89,100	3,267	TEHAMA	58,600	2,102
MERCED	230,600	21,991	TRINITY	13,550	32
MODOC	9,500	0	TULARE	392,900	70,463
MONO	13,400	0	TUOLUMNE	57,100	0
MONTEREY	418,800	218,679	VENTURA	799,200	214,245
NAPA	130,900	4,655	YOLO	183,500	6,420
NEVADA	96,900	346	YUBA	63,900	0
			<b>STATE</b>	<b>35,934,000</b>	<b>3,310,100</b>

*Source: Population data are from California Department of Finance, Demographic Research Unit. Nursery and Floral production from California Agricultural Statistics Service, Summary of County Agricultural Commissioners' Reports, 2003.*

**Appendix Table 4.**  
**The IMPLAN System**

The following brief description of IMPLAN is from Mulkey and Hodges.

IMPLAN, an acronym for Impact Analyses and Planning, was originally developed by the U.S. Forest Service in cooperation with the Federal Emergency Management Agency and the U.S. Department of the Interior's Bureau of Land Management to assist in land and resource management planning. It is a computer software package that consists of procedures for estimating local input-output models and associated databases. Since 1993, the IMPLAN system has been developed under exclusive rights by the Minnesota Implan Group, Inc. which licenses and distributes the software to users, including universities, government agencies and private companies.

The economic data for IMPLAN comes from the system of national accounts for the United States based on data collected by the U.S. Department of Commerce, the U.S. Bureau of Labor Statistics, and other federal and state government agencies. Data are collected for 528 distinct producing industry sectors of the national economy corresponding to the Standard Industrial Categories (SICs). Industry sectors are classified on the basis of the primary commodity or service produced. Corresponding data sets are also produced for each county in the U.S., allowing analyses at the county level or for individual states. Data on the technological mix of inputs and levels of transactions between producing sectors are taken from detailed input-output tables of the national economy. National and county level data are the basis for IMPLAN calculations of input-output tables and multipliers for local areas.

The IMPLAN software package allows the estimation of the multiplier effects of changes in final demand for one industry on all other industries within a local economic area. Multipliers may be estimated of a single county, for groups of contiguous counties, for an entire state. The multipliers measure total changes in output, income, employment, or value added.

For a particular producing industry, multipliers estimate three components of total change within the local area:

- Direct effects represent the initial change in the industry in question.
- Indirect effects are changes in inter-industry transactions as supplying industries respond to increased demands from the directly affected industries.
- Induced effects reflect changes in local spending that result from income changes in the directly and indirectly affected industry sectors.