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THE ECONOMIC IMPACT OF THE FLORIDA CITRUS INDUSTRY ON FLORIDA'S ECONOMY

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The Economic Impact of the Florida Citrus Industry on Florida's Economy*

The purpose of this paper is to examine the importance of the Florida citrus industry to the Florida economy. First, data on the relative size of Florida agriculture and the citrus industry are examined, followed by trends in farms and acreage. Then, data on citrus production and value are discussed, and impacts of the citrus industry on the Florida economy are estimated using an input-output model.

Importance of Florida Agriculture to the Florida Economy

Agriculture is an important economic sector of many Florida counties, although this importance may not be apparent at the state level. For example, consider earnings by economic sector. Tables 1 and 2 show that income earned (total farm and non-farm earnings on a place-of-work basis) by Florida farms and agricultural service businesses accounted for about 2% of total earned income from all economic sectors in Florida in 1996. In some counties, however, agriculture is much more important than suggested by this percentage. Notably, for several major citrus producing counties (DeSoto, Glades, and Hendry) farm and agricultural service (include forestry, fisheries, and other) income accounted for 30% to 40% of county total earned income.

* Prepared by Nikolaos Benioudakis, Graduate Research Assistant, and Mark Brown, Senior Research Economist, Florida Department of Citrus, Gainesville, Florida, May 1, 2000 (Staff Report 2000-1).

The size of agriculture, as indicated in Tables 1 and 2, only partially reflects the importance of this economic sector to Florida's economy. Earned income from agriculture is spent on goods and services produced by the other economic sectors shown in these tables; and, hence, this income helps support the jobs and earnings in these sectors. Farms and agricultural businesses also purchase production inputs from the various economic sectors shown in these tables, and these purchases also help support the business done by these sectors. Again, for some counties, this support is very significant. For example, if Hendry county were to lose its farms and agricultural businesses, about 37% of the county's earnings would be directly lost. Retail and other sector sales that would have been made to farm and agricultural business wage earners would also be lost; and, purchases made by farms and agricultural businesses of inputs supplied by the various economic sectors in the county would be lost. In this paper, impacts such as these will be estimated for the citrus sub-sector of agriculture.

Importance of Florida Citrus to Florida Agriculture

Over the five-year period from 1994 through 1998, Florida citrus tended to generate more cash receipts than other agricultural sectors (Tables 3 and 4). In 1998, citrus generated \$1.6 billion in cash receipts (the value of the citrus crop measured at the packing-house door), which represented 24% of all Florida farm cash receipts. Oranges generated most of the citrus cash receipts, accounting for 20% of all Florida cash receipts in 1998. Most of the orange cash receipts were from processed product sales.

Trends in Florida Farm Acreage and Number of Farms

From 1964 to 1997, Florida farm acreage decreased by 32.2% from 15.4 million acres to 10.4 million acres (Table 5). Over this period, the number of farmers decreased by 14.2% from 40,542 to 34,799. The average acres per farm declined from 380 acres in 1964 to 300 acres in 1997.

In contrast, from 1978 to 1997, Florida citrus acreage increased by 5.7% from 907,223 acres to 959,364 acres. Over this period, the number of citrus farms decreased by 26.2% from 10,407 to 7,676. Acres per farm increased from 87 acres in 1978 to 125 acres in 1997.

Citrus land accounted for about 9% of the State's farm acreage in 1997 but generated about 23% of the farm receipts in that year (Table 4), indicating that the citrus sector is a relatively high value use of the land.

Production and Value of Florida Citrus

Over the past ten seasons, Florida citrus production has ranged from a freeze low of 152 million boxes in 1989-90 to 304 million boxes in 1997-98 (Table 6). A box is 1-3/5 bushels and weighs 90 pounds for oranges, Temples and Tangelos; 85 pounds for grapefruit; and 95 pounds for tangerines.

The on-tree value of citrus is often inversely related to crop size due to the inelasticity of demand for some citrus products. This relationship, however, is not perfect, with orange juice being the dominant citrus product and its price being determined in the world market where Brazil is the largest producer; also the volume of juice produced depends not only on crop size, but also juice yield per box and the allocation of the crop between fresh and processed utilization. Table 7 shows that from

1989-90 to 1998-99, the total on-tree value of Florida citrus ranged from \$853 million to \$1,214 million.

The value of citrus is also measured at the packing-house door (PHD). This is the value of fruit delivered to a packing house or processing plant, and is equal to the on-tree value plus pick and haul costs, as well as elimination charges for fruit culled at packing houses and sent to processing plants. The pick and haul costs vary by variety of fruit, and whether the fruit is intended for fresh or processed utilization. For processed oranges, the average pick and haul costs, including a small average elimination charge, was \$2.00 per box in 1998 (Table 8). The difference between PHD and on-tree prices in Table 8 are average pick and haul costs for fresh utilization, and the average pick, haul and elimination costs for processed utilization.

Value is added to the fruit at packing houses (fruit is culled, cleaned, waxed, sorted and packed) and processing plants (juice is extracted, concentrated or pasteurized, and packaged in retail or bulk containers). This added value is the FOB value less the PHD value. For example for fresh oranges the 1998-99 value added at packing houses was \$7.13 per box (Table 8).

Table 9 shows FOB values for past seasons in actual dollars. In Table 10, these values are expressed in real 2000 dollars (CPI deflated). The CPI values used to obtain the results in Table 10 are shown in Table 11. For the last five seasons (1994-95 through 1998-99), the average real FOB value of fresh citrus was \$513 million. It should be noted that the fresh FOB values, which are reported by the Citrus Administrative Committee (CAC), are obtained by applying domestic prices to both domestic and export volumes, and, therefore, underestimate the total FOB value of domestic and export shipments, to the extent export prices tend to be higher than domestic prices. For the last five seasons, the average real FOB value of processed citrus was \$3,480 million.

FOB Value to Impact on Florida's Economy

A regional input-output model indicates the impact of that region's exports on its economy. Exports are products that are shipped to domestic and foreign destinations outside the region. In this study, Florida is the region of interest, and the impact of Florida citrus exports, destined to other states and countries, on the Florida economy is estimated.

In 1998-99, an estimated 95% of the volume of Florida orange juice was exported, mostly to domestic markets (Table 12). About 95% of the volume of Florida grapefruit juice was also exported. Assuming domestic and export prices for these juices are the same on average, the average real FOB value of juice exports is estimated at \$3,306 million (95% of the five-year average real FOB juice exports of \$3,480 million). As mentioned above, export prices for fresh citrus tend to be higher than domestic fresh prices. Based on 1998-99 data, fresh export values for oranges, grapefruit and specialty are estimated to be 97%, 98% and 95% of the FOB values reported by CAC, respectively (Table 13). Applying these percentages to the five-year average real FOB values for fresh product in Table 10, the real FOB value of fresh exports on average over the past five seasons is estimated at \$498 million.

The U.S. Department of Commerce, Bureau of Economic Analysis, has estimated a U.S. input-output model, and the University of Minnesota has developed a program based on this model and regional data that estimates regional input-output models for states and other regions of interest (IMPLAN). Using IMPLAN, David Mulkey and Allen Hodges of the Food and Resource Economics Department, University of Florida, have estimated input-output multipliers for Florida that indicate each processed (fresh) FOB dollar sales of exported citrus generates \$1.77 (\$1.79) in economic activity in the state (sales of all goods and services). Multipliers for earned income and employment were also

estimated. The multiplier for earned income indicates that each processed (fresh) FOB dollar sales of exported citrus generates \$.52 (\$.49) in earnings, while the multiplier for employment indicates that each million dollar sales at the FOB level generates 26.9 (14.5) in full-time-equivalent employment.

Applying these multipliers to the average FOB export values mentioned above, on an average annual basis over the five year period from 1994-95 through 1998-99, the Florida citrus industry is estimated to have generated about \$6.8 billion in economic activity in Florida, \$1.9 billion in earned income, and 61,332 jobs (Table 14).

Table 14 provides a breakdown of the citrus industry impacts by direct, indirect and induced effects. For economic activity (sales), the direct effect is the initial citrus export value of \$3.8 billion. The indirect effect measures the purchase of inputs by citrus producers from other industries, and the purchases of inputs between industries in supporting the exports. This effect is \$1.8 billion. Lastly, the induced effect measures the additional sales by all businesses resulting from consumer spending supported by household earnings generated by the exports. The induced effect is \$1.2 billion.

Twenty-two thousand persons are estimated to be directly employed in citrus, with another 39 thousand employed as a result of indirect and induced economic activity. Citrus industry earnings are estimated at \$759 million, with indirect and induced earnings at \$1,096 million.

Table 1. Earned income for Florida and select counties 1996.

Florida/ Counties	Total	Farm	Agr. Services	Mining	Construction	Manufacturing	Transportation	Wholesale	Retail	Finance-Real	Services	Government
Florida	207,954	1,774	2,190	399	12,658	18,897	13,936	13,921	24,465	18,600	68,759	32,356
Charlotte	971	8	13	2	95	28	39	20	164	65	390	146
Collier	2,919	122	87	6	336	92	86	93	399	341	1,085	272
De Soto	245	48	32	0	9	7	5	4	23	5	35	77
Glades	38	8	5	(a)	3	0	4	1	3	(a)	4	9
Hardee	200	38	19	(a)	(a)	5	6	8	17	7	33	46
Hendry	354	80	51	(a)	12	51	(a)	8	27	8	38	65
Highlands	599	46	(a)	1	44	46	(a)	17	86	31	168	100
Hillsborough	17,556	123	100	2	939	1,263	1,348	1,593	1,839	1,818	6,133	2,397
Indian River	1,231	44	81	1	99	85	23	65	163	104	414	151
Lake	1,536	41	32	10	141	143	94	55	210	100	493	216
Manatee	2,869	79	59	1	180	406	71	121	364	136	1,124	328
Martin	1,462	52	39	1	126	119	76	54	211	142	492	150
Okeechobee	255	37	9	0	12	6	11	12	37	9	71	50
Orange	17,560	107	126	8	1,030	1,598	1,323	1,326	1,826	1,417	6,996	1,803
Osceola	1,225	6	13	0	79	74	24	56	228	74	470	200
Palm Beach	16,550	160	263	56	961	1,586	865	1,184	1,813	2,156	5,664	1,840
Pasco	1,955	21	(a)	(a)	144	113	107	56	303	102	750	323
Polk	5,478	76	143	165	336	817	410	288	793	311	1,438	700
St.Lucie	1,515	32	89	2	110	80	147	57	199	85	439	273

----- Million Dollars -----

(a) Data withheld to avoid disclosure of information about individual industries.

Table 2. Percentages of earned income for Florida and select counties 1996.

Florida/ Counties	Total	Farm	Agr. Services	Mining	Construction	Manufacturing	Transportation	Wholesale	Retail	Finance-Real	Services	Government
Florida	100	0.85	1.05	0.19	6.09	9.09	6.70	6.69	11.76	8.94	33.06	15.56
Charlotte	100	0.82	1.34	0.21	9.78	2.88	4.02	2.06	16.89	6.69	40.16	15.04
Collier	100	4.18	2.98	0.21	11.51	3.15	2.95	3.19	13.67	11.68	37.17	9.32
De Soto	100	19.59	13.06	0.00	3.67	2.86	2.04	1.63	9.39	2.04	14.29	31.43
Glades	100	21.05	13.16	(a)	7.89	0.00	10.53	1.84	7.89	(a)	10.53	23.68
Hardee	100	19.00	9.50	(a)	(a)	2.50	3.00	4.00	8.50	3.50	16.50	23.00
Hendry	100	22.60	14.41	(a)	3.39	14.41	(a)	2.26	7.63	2.26	10.73	18.36
Highlands	100	7.68	(a)	0.17	7.35	7.68	(a)	2.84	14.36	5.18	28.05	16.69
Hillsborough	100	0.70	0.57	0.01	5.35	7.19	7.68	9.07	10.48	10.36	34.93	13.65
Indian River	100	3.57	6.58	0.08	8.04	6.90	1.87	5.28	13.24	8.45	33.63	12.27
Lake	100	2.67	2.08	0.65	9.18	9.31	6.12	3.58	13.67	6.51	32.10	14.06
Manatee	100	2.75	2.06	0.03	6.27	14.15	2.47	4.22	12.69	4.74	39.18	11.43
Martin	100	3.56	2.67	0.04	8.62	8.14	5.20	3.69	14.43	9.71	33.65	10.26
Okeechobee	100	14.51	3.53	0.00	4.71	2.35	4.31	4.71	14.51	3.53	27.84	19.61
Orange	100	0.61	0.72	0.05	5.87	9.10	7.53	7.55	10.40	8.07	39.84	10.27
Osceola	100	0.49	1.06	0.00	6.45	6.04	1.96	4.57	18.61	6.04	38.37	16.33
Palm Beach	100	0.97	1.59	0.34	5.81	9.58	5.23	7.15	10.95	13.03	34.22	11.12
Pasco	100	1.07	(a)	(a)	7.37	5.78	5.47	2.86	15.50	5.22	38.36	16.52
Polk	100	1.39	2.61	3.01	6.13	14.91	7.48	5.26	14.48	5.68	26.25	12.78
St.Lucie	100	2.11	5.87	0.13	7.26	5.28	9.70	3.76	13.14	5.61	28.98	18.02

(a) Data withheld to avoid disclosure of information about individual industries.

Source: Bureau of Economic and Business Research, Warrington College of Business Administration, University of Florida, 1998 Florida Statistical Abstract, pages 179-181.

Table 3. Cash receipts from Florida farm marketings by commodities, calendar years 1994-1998.

Commodity	1994	1995	1996	1997	1998	1998
	----- 1,000 Dollars -----					% of total
ALL CROPS	4,854,453	4,850,299	5,079,841	5,116,136	5,354,616	80.08
CITRUS	1,477,821	1,548,889	1,582,372	1,491,140	1,607,610	24.04
Grapefruit	251,406	225,204	216,209	186,190	145,698	2.18
K-Early	603	905	669	40	40	0
Lemons	2,675	2,079	2,879	1,341	2,631	0.04
Limes	3,687	3,479	1,860	5,159	4,826	0.07
Oranges	1,156,101	1,187,419	1,258,710	1,213,596	1,346,562	20.14
Tangelos	13,508	16,942	16,281	17,391	20,337	0.3
Tangerines	37,154	98,560	71,671	54,882	76,512	1.14
Temples	12,687	14,301	14,093	12,541	11,004	0.16
OTHER FRUITS & NUTS	141,535	167,552	166,700	206,545	228,553	3.42
Avocados	12,320	11,324	12,408	14,016	16,468	0.25
Mangos	1,500	1,725	1,500	1,450	N/A	
Pecans	1,600	945	1,095	1,320	1,045	0.02
Blueberries	5,690	5,050	4,965	5,040	6,240	0.09
Strawberries	101,425	118,608	112,632	146,119	161,200	2.41
Other	19,000	29,900	34,100	38,600	43,600	0.65
VEGETABLES & MELONS	1,448,816	1,325,702	1,354,966	1,459,558	1,536,371	22.98
Cabbage	29,688	18,135	26,768	39,701	26,325	0.39
Carrots	11,252	16,971	12,516	16,538	11,340	0.17
Celery	21,571	8,280	4,745	N/A	N/A	
Cucumbers	58,200	51,081	79,761	98,867	69,492	1.04
Eggplant	15,606	14,005	14,784	15,548	15,523	0.23
Escarole	8,969	9,440	5,776	7,000	11,550	0.17
Green Peppers	197,465	177,188	222,768	251,766	245,686	3.67
Lettuce	16,884	10,118	6,691	3,360	11,024	0.16
Potatoes	118,655	84,010	98,944	89,195	123,491	1.85
Radishes	25,888	23,873	20,021	19,018	18,816	0.28
Snap Beans	60,645	63,902	75,842	65,838	130,153	1.95
Squash	43,216	46,591	34,121	36,228	54,515	0.82
Sweet Corn	105,232	108,423	100,526	127,331	103,249	1.54
Tomatoes	465,663	414,966	447,556	487,060	506,607	7.58
Watermelons	57,868	62,700	49,980	54,750	60,120	0.9
Other	212,014	216,019	154,167	147,358	148,480	2.22
FIELD CROPS	650,709	644,130	667,443	636,494	644,953	9.65
Corn	11,045	12,793	20,919	16,298	8,022	0.12
Cotton	37,916	38,598	44,171	43,987	34,359	0.51
Hay	14,025	11,849	11,906	13,179	13,886	0.21
Peanuts	58,302	52,463	66,361	63,857	57,343	0.86
Soybeans	7,490	5,165	6,214	7,733	4,961	0.07
Sugarcane	459,911	458,205	455,434	434,187	472,303	7.06
Tobacco	27,248	30,907	31,021	32,293	29,942	0.45
Wheat	1,717	1,255	1,534	2,072	1,509	0.02
Other	33,055	32,895	29,883	22,888	22,628	0.34
FOLIAGE & FLORICULTURE	600,986	629,773	676,727	656,234	653,700	9.78
AQUATIC PLANTS	10,900	8,600	10,900	13,200	12,300	0.18
OTHER CROPS & PRODUCTS	523,686	525,653	620,733	652,965	671,129	10.04
ALL LIVESTOCK & LIVESTOCK PRODUCTS	1,194,603	1,134,378	1,228,739	1,324,880	1,331,740	19.92
Milk	408,408	363,528	431,280	407,715	423,878	6.34
Cattle and Calves	335,837	287,352	218,919	320,424	293,327	4.39
Poultry and Eggs	291,605	315,277	362,760	353,838	367,313	5.49
Broilers	191,151	218,361	230,607	229,383	252,840	3.78
Eggs	98,348	95,320	131,355	123,701	112,707	1.69
Other	2,106	1,596	798	754	1,766	0.03
Aquaculture	63,750	70,080	80,250	88,016	92,674	1.39
Catfish	350	390	350	352	674	0.01
Tropical Fish	49,000	52,500	55,000	57,200	55,100	0.82
Alligators Farmed	4,400	4,550	3,900	3,190	2,300	0.03
Clams & Oysters	5,800	6,430	9,000	13,100	11,200	0.17
Other Aquaculture	4,200	6,210	12,000	14,174	23,400	0.35
Hogs	12,399	12,098	15,409	12,335	5,772	0.09
Horses & Mules	-	-	-	108,000	111,600	1.67
Honey	9,080	12,659	21,672	11,738	14,426	0.22
Sheep & Lambs, Wool	104	127	135	138	135	0.0
Other Livestock & Products	73,420	73,257	98,314	22,676	22,615	0.34
TOTAL CASH RECEIPTS FROM FARM MARKETINGS	6,049,056	5,984,677	6,308,580	6,441,016	6,686,356	100

Source: Florida Agricultural Statistics Service, Farm Cash Receipts and Expenditures - 1998, August 1998.

Table 4. Cash receipts from Florida farm marketings by commodities, calendar years 1994-1998.

Commodity	1994	1995	1996	1997	1998
	----- Percent of Total -----				
ALL CROPS	80.25	81.05	80.52	79.43	80.08
CITRUS	24.43	25.88	25.08	23.15	24.04
Grapefruit	4.16	3.76	3.43	2.89	2.18
K-Early	0.01	0.02	0.01	0.00	0.00
Lemons	0.04	0.03	0.05	0.02	0.04
Limes	0.06	0.06	0.03	0.08	0.07
Oranges	19.11	19.84	19.95	18.84	20.14
Tangelos	0.22	0.28	0.26	0.27	0.30
Tangerines	0.61	1.65	1.14	0.85	1.14
Temples	0.21	0.24	0.22	0.19	0.16
OTHER FRUITS & NUTS	2.34	2.80	2.64	3.21	3.42
Avocados	0.20	0.19	0.20	0.22	0.25
Mangos	0.02	0.03	0.02	0.02	-
Pecans	0.03	0.02	0.02	0.02	0.02
Blueberries	0.09	0.08	0.08	0.08	0.09
Strawberries	1.68	1.98	1.79	2.27	2.41
Other	0.31	0.50	0.54	0.60	0.65
VEGETABLES & MELONS	23.95	22.15	21.48	22.66	22.98
Cabbage	0.49	0.30	0.42	0.62	0.39
Carrots	0.19	0.28	0.20	0.26	0.17
Celery	0.36	0.14	0.08	-	-
Cucumbers	0.96	0.85	1.26	1.53	1.04
Eggplant	0.26	0.23	0.23	0.24	0.23
Escarole	0.15	0.16	0.09	0.11	0.17
Green Peppers	3.26	2.96	3.53	3.91	3.67
Lettuce	0.28	0.17	0.11	0.05	0.16
Potatoes	1.96	1.40	1.57	1.38	1.85
Radishes	0.43	0.40	0.32	0.30	0.28
Snap Beans	1.00	1.07	1.20	1.02	1.95
Squash	0.71	0.78	0.54	0.56	0.82
Sweet Corn	1.74	1.81	1.59	1.98	1.54
Tomatoes	7.70	6.93	7.09	7.56	7.58
Watermelons	0.96	1.05	0.79	0.85	0.90
Other	3.50	3.61	2.44	2.29	2.22
FIELD CROPS	10.76	10.76	10.58	9.88	9.65
Corn	0.18	0.21	0.33	0.25	0.12
Cotton	0.63	0.64	0.70	0.68	0.51
Hay	0.23	0.20	0.19	0.20	0.21
Peanuts	0.96	0.88	1.05	0.99	0.86
Soybeans	0.12	0.09	0.10	0.12	0.07
Sugarcane	7.60	7.66	7.22	6.74	7.06
Tobacco	0.45	0.52	0.49	0.50	0.45
Wheat	0.03	0.02	0.02	0.03	0.02
Other	0.55	0.55	0.47	0.36	0.34
FOLIAGE & FLORICULTURE	9.94	10.52	10.73	10.19	9.78
AQUATIC PLANTS	0.18	0.14	0.17	0.20	0.18
OTHER CROPS & PRODUCTS	8.66	8.78	9.84	10.14	10.04
ALL LIVESTOCK & LIVESTOCK PRODUCTS	19.75	18.95	19.48	20.57	19.92
Milk	6.75	6.07	6.84	6.33	6.34
Cattle and Calves	5.55	4.80	3.47	4.97	4.39
Poultry and Eggs	4.82	5.27	5.75	5.49	5.49
Broilers	3.16	3.65	3.66	3.56	3.78
Eggs	1.63	1.59	2.08	1.92	1.69
Other	0.03	0.03	0.01	0.01	0.03
Aquaculture	1.05	1.17	1.27	1.37	1.39
Catfish	0.01	0.01	0.01	0.01	0.01
Tropical Fish	0.81	0.88	0.87	0.89	0.82
Alligators Farmed	0.07	0.08	0.06	0.05	0.03
Clams & Oysters	0.10	0.11	0.14	0.20	0.17
Other Aquaculture	0.07	0.10	0.19	0.22	0.35
Hogs	0.20	0.20	0.24	0.19	0.09
Horses & Mules	-	-	-	1.68	1.67
Honey	0.15	0.21	0.34	0.18	0.22
Sheep & Lambs, Wool	0.00	0.00	0.00	0.00	0.00
Other Livestock & Products	1.21	1.22	1.56	0.35	0.34
TOTAL CASH RECEIPTS FROM FARM MARKETINGS	100.00	100.00	100.00	100.00	100.00

Source: Florida Agricultural Statistics Service, Farm Cash Receipts and Expenditures - 1998, August 1998.

Table 5. Florida citrus farms and acres.

Item	1964	1969	1974	1978	1982	1987	1992	1997
Farms	40,542	35,586	32,466	36,109	36,352	36,556	35,204	34,799
Land in Farms (acres)	15,411,181	14,031,998	13,199,365	13,016,288	12,814,216	11,194,090	10,766,077	10,454,217
acres/farm	380	394	407	360	353	306	306	300
Land in Orchards								
farms	18,834	13,187	11,079	12,011	11,214	9,965	10,258	9,379
acres	924,750	973,549	912,079	932,527	938,527	762,068	914,642	981,910
acres/farm	49	74	82	78	84	76	89	105
All Citrus Fruit								
farms	nr *	nr *	nr *	10,407	9,588	8,121	8,205	7,676
acres	nr *	nr *	nr *	907,223	915,505	734,803	887,904	959,364
acres/farm	-	-	-	87	95	90	108	125
Grapefruit								
farms	nr *	nr *	nr *	4,087	4,141	3,070	2,880	2,549
acres	nr *	nr *	nr *	160,973	165,845	138,107	156,238	152,828
acres/farm	-	-	-	39	40	45	54	60
Oranges								
farms	nr *	nr *	nr *	9,638	8,774	7,334	7,298	6,893
acres	nr *	nr *	nr *	692,193	706,229	571,270	691,988	754,729
acres/farm	-	-	-	72	80	78	95	109

* Not Reported

Source : U.S. Department of Agriculture, Florida and County Data, various Annual Census of Agriculture.

Table 6. Florida citrus production.

Season	Oranges			Grapefruit			Specialty			Total		
	Fresh	Processed	Total	Fresh	Processed	Total	Fresh	Processed	Total	Fresh	Processed	Total
1989-90	5,922	104,278	110,200	13,344	22,356	35,700	2,396	3,864	6,260	21,662	131,517	152,160
1990-91	12,451	139,149	151,600	23,923	21,177	45,100	3,318	3,942	7,260	39,692	165,077	203,960
1991-92	11,552	128,248	139,800	22,841	19,559	42,400	4,233	3,482	7,715	38,626	152,150	189,915
1992-93	10,724	175,876	186,600	23,145	31,996	55,141	4,461	4,074	8,535	38,330	215,271	250,276
1993-94	9,898	164,502	174,400	22,502	28,548	51,050	5,027	4,883	9,910	37,427	198,453	235,360
1994-95	10,441	195,059	205,500	22,239	33,461	55,700	4,619	4,751	9,370	37,299	233,271	270,570
1995-96	9,969	193,331	203,300	22,843	29,507	52,350	4,917	4,343	9,260	37,729	227,181	264,910
1996-97	10,696	215,504	226,200	23,237	32,563	55,800	5,401	7,399	12,800	39,334	255,466	294,800
1997-98	11,010	232,990	244,000	21,160	28,390	49,550	4,937	5,403	10,340	37,107	266,783	303,890
1998-99	10,817	174,883	185,700	19,946	27,104	47,050	5,030	4,350	9,380	35,793	206,337	242,130

Source: Florida Agricultural Statistics Service.

Table 7. On-tree value of Florida citrus.

Season	Oranges			Grapefruit			Specialty			Total		
	Fresh	Processed	Total	Fresh	Processed	Total	Fresh	Processed	Total	Fresh	Processed	Total
1989-90	61,053	623,173	684,226	133,413	68,343	201,756	37,344	13,111	50,455	231,810	704,627	936,437
1990-91	105,289	787,396	892,685	211,244	44,084	255,328	51,784	14,353	66,137	368,317	845,833	1,214,150
1991-92	98,404	730,345	828,749	198,391	82,238	280,629	64,127	17,066	81,193	360,922	829,649	1,190,571
1992-93	40,877	608,836	649,713	112,476	33,956	146,432	50,364	6,721	57,085	203,717	649,513	853,230
1993-94	59,162	654,150	713,312	124,167	43,044	167,211	50,397	4,395	54,792	233,726	701,589	935,315
1994-95	42,516	725,408	767,924	88,993	27,609	116,602	50,482	9,499	59,981	181,991	762,516	944,507
1995-96	54,404	841,061	895,465	84,733	16,407	101,140	63,538	11,899	75,437	202,675	869,367	1,072,042
1996-97	48,836	752,508	801,344	86,911	1,098	88,009	56,186	10,735	66,921	191,933	764,341	956,274
1997-98	43,412	857,403	900,815	72,369	-9,369	63,000	48,957	6,737	55,694	164,738	854,771	1,019,509
1998-99(a)	94,774	858,676	953,450	100,435	5,692	106,127	67,676	14,435	82,111	262,886	878,802	1,141,688

----- 1,000 Dollars -----

(a) Preliminary.
Source: Florida Agricultural Statistics Service.

Table 8. Marketing year average prices received, Florida.

	1995-96			1996-97			1997-98			1998-99		
	FOB	PHD	On-tree	FOB	PHD	On-tree	FOB	PHD	On-tree	FOB	PHD	On-tree
Oranges												
Early/Mids												
Fresh	14.00	5.67	3.62	13.40	5.08	3.18	12.70	4.24	2.48	17.40	6.61	4.76
Processing		7.00	4.95		6.40	4.50		5.60	3.70		10.30	8.30
Valencias		5.59	3.54		5.01	3.11		4.16	2.41		6.40	4.55
Fresh	15.00	7.67	5.57	13.60	6.01	4.07	13.20	6.99	5.14	18.50	7.66	5.71
Processing		8.50	6.45		6.60	4.70		6.10	4.20		11.40	9.40
All		7.63	5.53		5.99	4.04		7.02	5.17		7.41	5.46
Fresh	14.50	6.47	4.40	13.50	5.46	3.54	12.90	5.41	3.61	17.90	7.03	5.13
Processing		7.51	5.46		6.47	4.57		5.76	3.86		10.77	8.77
		6.42	4.35		5.41	3.49		5.39	3.60		6.80	4.91
Grapefruit												
Seedless-Colored												
Fresh	12.30	3.83	1.77	12.70	4.07	1.91	12.40	3.74	1.50	14.20	4.73	2.43
Processing		4.81	2.96		5.12	3.26		4.71	2.85		6.53	4.52
Seedless-White		2.33	-0.06		2.74	0.20		2.62	-0.05		2.65	0.02
Fresh	16.20	4.31	2.14	15.60	3.32	1.12	15.90	3.24	0.93	17.40	4.30	2.01
Processing		7.80	5.88		7.16	5.23		7.31	5.38		8.83	6.80
Other		3.13	0.88		2.10	-0.18		1.80	-0.65		2.75	0.36
Fresh		3.43	1.73		1.93	0.13		1.90	0.10		2.92	1.02
Processing		3.43	1.73		1.93	0.13		1.90	0.10		2.92	1.02
All		4.03	1.93		3.72	1.55		3.53	1.27		4.55	2.26
Fresh	13.30	5.58	3.71	13.40	5.62	3.74	13.20	5.30	3.42	14.90	7.05	5.04
Processing		2.84	0.56		2.37	-0.01		2.21	-0.33		2.70	0.21
Tangelos												
FL												
Fresh	15.20	6.16	3.63	13.90	4.75	2.19	13.80	4.19	1.66	17.40	7.23	4.59
Processing		7.80	5.35		6.50	4.05		6.30	3.90		9.90	7.40
		5.00	2.40		4.13	1.53		3.20	0.60		5.92	3.22
Templets												
FL												
Fresh	14.60	6.52	4.44	15.70	5.23	3.22	13.60	5.12	3.07	18.40	7.34	5.21
Processing		7.60	5.55		8.70	7.00		6.50	4.60		11.30	9.30
		6.01	3.91		4.18	2.08		4.65	2.55		5.37	3.17
Tangerines												
FL												
Fresh	28.90	15.91	12.59	24.50	11.35	7.99	24.30	11.82	8.49	27.70	15.87	12.30
Processing		20.35	17.15		15.95	12.75		15.70	12.50		19.10	15.65
		5.61	2.01		4.56	0.96		4.32	0.72		7.50	3.65
K-Early												
FL												
Fresh	15.10	4.82	2.28	13.70	3.95	1.40	8.00	1.13	-1.33	14.10	4.78	2.14
Processing		7.70	5.25		6.30	3.85		0.50	-1.90		6.60	4.10
		3.00	0.40		2.50	-0.10		3.00	0.40		4.00	1.30

Source: National Agricultural Statistics Service, various September reports entitled *Agricultural Prices*.

Table 9. FOB value of the Florida citrus industry.

Season	Fresh			Processed			TOTAL				
	Oranges	Grapefruit	Specialty	Total Fresh	Oranges(a)	Grapefruit	Total	Oranges	Grapefruit	Specialty	Total
1981-82	77.4	143.6	58.4	279.4	1,616.6	228.0	1,844.6	1,694.0	371.6	58.4	2,124.0
1982-83	107.4	151.3	77.4	336.2	1,934.1	173.0	2,107.1	2,041.5	324.3	77.4	2,443.3
1983-84	87.0	152.8	59.7	299.5	2,068.5	216.9	2,285.4	2,155.5	369.7	59.7	2,584.9
1984-85	111.6	167.5	65.7	344.9	1,985.8	273.4	2,259.2	2,097.4	440.9	65.7	2,604.1
1985-86	104.1	213.1	62.5	379.7	1,816.6	266.4	2,083.0	1,920.7	479.5	62.5	2,462.7
1986-87	108.4	250.5	66.0	424.9	2,176.0	282.3	2,458.3	2,284.4	532.8	66.0	2,883.2
1987-88	127.2	284.8	78.6	490.6	2,669.5	349.9	3,019.4	2,796.7	634.7	78.6	3,510.0
1988-89	107.9	269.7	74.3	452.0	2,678.5	297.9	2,976.4	2,786.4	567.6	74.3	3,428.4
1989-90	86.5	193.3	48.9	328.7	2,965.4	363.4	3,328.8	3,051.9	556.7	48.9	3,657.5
1990-91	182.8	367.1	69.9	619.8	2,606.8	247.7	2,854.5	2,789.6	614.8	69.9	3,474.3
1991-92	164.3	322.6	96.3	583.3	2,658.5	287.8	2,946.3	2,822.8	610.4	96.3	3,529.6
1992-93	105.1	251.4	82.6	439.1	2,575.7	282.5	2,858.2	2,680.8	533.9	82.6	3,297.3
1993-94	114.7	253.2	93.8	461.7	2,563.4	262.5	2,825.9	2,678.1	515.7	93.8	3,287.6
1994-95	109.7	223.8	90.7	424.2	2,870.3	255.9	3,126.2	2,980.0	479.7	90.7	3,550.4
1995-96	120.8	251.1	111.6	483.5	3,008.7	250.9	3,259.6	3,129.5	502.0	111.6	3,743.1
1996-97	116.3	272.0	105.9	494.2	2,713.6	236.3	2,949.9	2,829.9	508.3	105.9	3,444.1
1997-98	109.2	242.8	98.6	450.6	3,048.9	260.1	3,309.0	3,158.1	502.9	98.6	3,759.6
1998-99	152.3	277.9	120.6	550.7	3,293.8	348.5	3,642.3	3,446.1	626.4	120.6	4,193.0

----- Million Dollars -----

(a) Includes specialty.

Sources: Citrus Administrative Committee, various Annual Statistical Reports;
 Florida Citrus Mutual, various Annual Statistical Reports;
 Florida Department of Citrus, Economic and Market Research Department, various *Citrus Reference Books*.

Table 10. FOB value of the Florida citrus industry.

Season	Fresh			Processed			TOTAL				
	Oranges	Grapefruit	Specialty	Total	Oranges(a)	Grapefruit	Total	Oranges	Grapefruit	Specialty	Total
1981-82	137.1	254.3	103.4	494.8	2,862.4	403.7	3,266.1	2,999.5	658.0	103.4	3,760.9
1982-83	184.3	259.6	132.8	576.7	3,318.0	296.8	3,614.8	3,502.3	556.4	132.8	4,191.5
1983-84	143.1	251.3	98.2	492.6	3,401.7	356.7	3,758.4	3,544.8	608.0	98.2	4,251.0
1984-85	177.3	266.1	104.4	547.7	3,153.4	434.2	3,587.6	3,330.7	700.2	104.4	4,135.3
1985-86	162.3	332.2	97.4	591.9	2,832.1	415.3	3,247.4	2,994.4	747.5	97.4	3,839.3
1986-87	163.0	376.7	99.3	639.1	3,273.0	424.6	3,697.6	3,436.0	801.3	99.3	4,336.6
1987-88	183.8	411.4	113.5	708.7	3,855.7	505.4	4,361.1	4,039.5	916.8	113.5	5,069.8
1988-89	148.7	371.7	102.4	622.9	3,690.9	410.5	4,101.4	3,839.6	782.2	102.4	4,724.2
1989-90	113.1	252.7	63.9	429.7	3,876.7	475.1	4,351.8	3,989.8	727.8	63.9	4,781.5
1990-91	229.4	460.5	87.7	777.5	3,270.3	310.7	3,581.1	3,499.7	771.2	87.7	4,358.6
1991-92	200.1	392.9	117.3	710.4	3,237.7	350.5	3,588.2	3,437.9	743.4	117.3	4,298.6
1992-93	124.2	297.3	97.7	519.3	3,045.7	334.0	3,379.7	3,169.9	631.4	97.7	3,899.0
1993-94	132.2	292.0	108.2	532.4	2,955.5	302.6	3,258.1	3,087.7	594.6	108.2	3,790.5
1994-95	123.0	250.9	101.7	475.6	3,218.1	286.9	3,505.0	3,341.1	537.8	101.7	3,980.6
1995-96	131.6	273.5	121.5	526.5	3,276.5	273.2	3,549.8	3,408.1	546.7	121.5	4,076.3
1996-97	123.8	289.6	112.7	526.1	2,888.9	251.6	3,140.4	3,012.7	541.1	112.7	3,666.6
1997-98	114.5	254.5	103.4	472.3	3,196.1	272.7	3,468.7	3,310.5	527.2	103.4	3,941.1
1998-99	156.1	284.8	123.6	564.5	3,376.1	357.2	3,733.4	3,532.2	642.0	123.6	4,297.9
5 Yr. Avg.	129.8	270.7	112.6	513.0	3,191.1	288.3	3,479.5	3,320.9	559.0	112.6	3,992.5

(a) Includes specialty.

(b) Nominal dollars divided by the CPI-U (Consumer Price Index) - 2000=1.

Sources: Citrus Administrative Committee, various Annual Statistical Reports;

Florida Citrus Mutual, various Annual Statistical Reports;

Florida Department of Citrus, Economic and Market Research Department, various *Citrus Reference Books*.

Table 11. Consumer Price Index.

Season	CPI-U	
	(1982-94=100)	(2000=1.00)
1981-82	96.5	0.56
1982-83	99.6	0.58
1983-84	103.9	0.61
1984-85	107.6	0.63
1985-86	109.6	0.64
1986-87	113.6	0.66
1987-88	118.3	0.69
1988-89	124.0	0.73
1989-90	130.7	0.76
1990-91	136.2	0.80
1991-92	140.3	0.82
1992-93	144.5	0.85
1993-94	148.2	0.87
1994-95	152.4	0.89
1995-96	156.9	0.92
1996-97	160.5	0.94
1997-98	163.0	0.95
1998-99	166.7	0.98
1999-00	170.9	1.00

Source: U.S. Department of Commerce, Bureau of Labor Statistics.

Table 12. 1998-99 Florida orange and grapefruit juice exports.

Item	Orange Juice		Grapefruit Juice	
	Million SSE Gallons	% Movement	Million SSE Gallons	% Movement
Beginning Inventory	628.8		83.5	
Production	1,154.6		140.2	
Imports	188.5		.0	
Availability	1,971.9		223.7	
Movement	1,460.3	100.0	171.6	100.0
Total Domestic	1,315.4		147.3	
To Florida ^a	72.0		8.1	
Exports to Other States	1,243.4		139.2	
Foreign Exports ^b	144.9		24.3	
Total Exports	1,388.3	95.1	163.5	95.3
Ending Inventory	511.6		52.1	

^aBased on Florida share of U.S. population:

Florida	267.636 million	100%
U.S.	14.654 million	5.5%

^bU.S. exports; assumes Florida accounts for most all exports.

Source: Florida Department of Citrus, Economic and Market Research Department.

Table 13. Value of 1998-99 Florida fresh citrus exports.

Item	U.S. Domestic & Canada		Offshore Exports	Total Exports	Total Florida + Exports
	Florida ^a	Other U.S. + Canada Exports			
----- 1,000 Cartons -----					
Fresh Shipments					
Oranges	834	15,422	1,046	16,468	17,303
Grapefruit	836	17,053	19,509	36,563	37,399
Specialty	459	8,359	90	8,449	8,908
TOTAL	2,129	40,835	20,645	61,480	63,609
----- \$/Carton -----					
FOB Prices ^b					
Oranges	8.81	8.81	11.07		
Grapefruit	7.43	7.43	7.47		
Specialty	13.50	13.50	13.50		
----- \$1,000 -----					
Fresh FOB					
Oranges	7,353	135,928	11,576	147,504	154,857
Grapefruit	6,213	126,708	145,701	272,409	278,623
Specialty	6,194	112,817	1,208	114,025	120,219
Fresh Export FOB Values as Share of CAC Value					
	Estimated Export Value	Reported CAC Value	Export Share of CAC		
	--- \$1,000 ---		-- % --		
Oranges	147,504	152,276	96.9		
Grapefruit	272,409	277,877	98.0		
Specialty	114,025	120,577	94.6		

^aBased on Florida share of U.S. population:

Florida	267.636 million	100%
U.S.	14.654 million	5.5%

^bFOB prices:

Item	1998-99		
	Wt. Avg. FOB (See Table 8)	Domestic FOB (CAC)	Export FOB (Solved)
----- \$/Carton -----			
Oranges	8.95	8.81	11.07
Grapefruit	7.45	7.43	7.47
Tangelos	8.70	8.63	
Temples	9.20	10.18	
Tangerines	13.85	14.85	

Table 14. Estimated economic impact of the citrus industry on Florida economy.

Average 1994-95 through 1998-99			
Total Exports	-- \$1,000 --		
Fresh	498,000		
Processed	3,306,000		
Item	Earnings	Output/Sales	Employment
----- \$1,000 -----			
Direct			
Fresh	112,100	498,000	6,649
Processed	646,654	3,306,000	15,355
TOTAL	758,753	3,804,000	22,004
----- Multipliers -----			
Fresh	0.2251*	1.0000*	13.3511**
Processed	0.1956*	1.0000*	4.6447**
Indirect			
Fresh	83,315	214,439	4,371
Processed	559,210	1,593,327	17,829
TOTAL	642,525	1,807,766	22,200
----- Multipliers -----			
Fresh	0.1673*	0.4306*	8.7777**
Processed	0.1692*	0.4820*	5.3928**
Induced			
Fresh	63,196	166,930	2,389
Processed	389,943	1,029,984	14,739
TOTAL	453,139	1,196,914	17,128
----- Multipliers -----			
Fresh	0.1269*	0.3352*	4.7967**
Processed	0.1180*	0.3116*	4.4583**
TOTAL			
Fresh	258,661	879,368	13,409
Processed	1,595,972	5,929,476	47,923
TOTAL	1,854,633	6,808,845	61,332
----- Multipliers -----			
Fresh	0.5194*	1.7658*	26.9255**
Processed	0.4828*	1.7936*	14.4958**

* Per dollar change in exports.

**Per million dollar change in exports.