

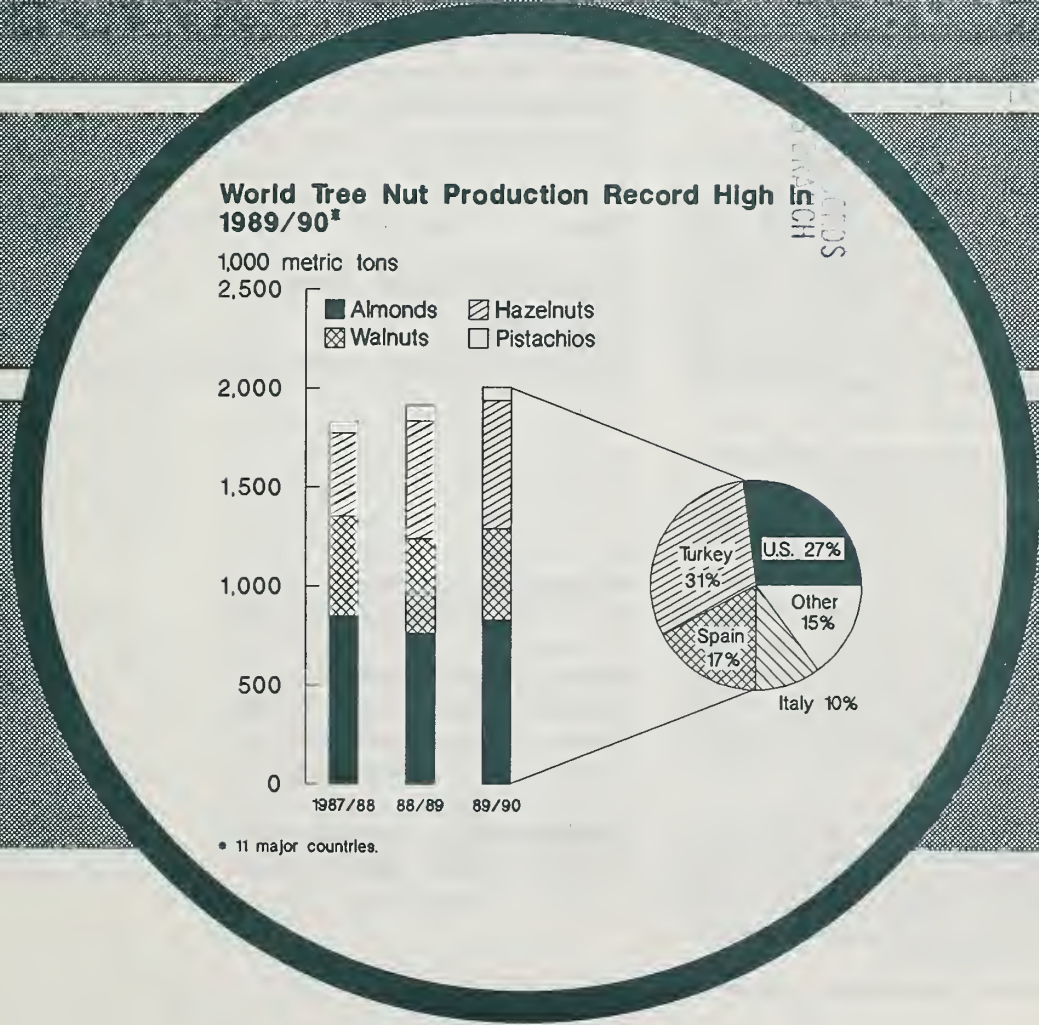
United States
Department of
Agriculture

Economic
Research
Service

TFS-253
March 1990

Fruit and Tree Nuts

Situation and Outlook Report



Contents

Fruit and Tree Nuts Situation and Outlook.

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Fruit Price Outlook

Grower Prices Under Pressure, But Retail Prices Remain Strong 6

Citrus Outlook

Freeze Significantly Lowers Citrus Crop Prospects 7

Florida and Texas Growers Scramble To Salvage Freeze-

Damage Oranges 8

Smaller Florida Orange Crop Will Curtail Domestic Orange

Juice Production 9

Fresh Market Orange Supply Adequate 11

Smaller U.S. Grapefruit Supplies 13

U.S. Grapefruit Juice Supplies Tighter, Prices Rise 15

U.S. Lemon Production Down 16

Noncitrus Fruit Outlook

Noncitrus Fruit Production Set Record in 1989 17

1989 U.S. Apple Crop Just Below Record 18

Avocado Outlook Mixed Between Florida and California 19

Value of Grape Production Up 7 Percent 20

Pear Production Rebounds 21

Smaller Strawberry Supplies Boost Prices 23

Outlook For Tree Nuts

Smaller Tree Nut Crops, But Supplies Continue Large 24

Tree Nut Crop Situation and Outlook 24

World Nut Supply and Consumption Record High 25

Export Outlook

Growth in U.S. Horticultural Product Exports Expected to Slow 27

Supplementary Data Tables 29

Special Article

International Competition In The Processed Peach Industry 43

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Situation Coordinator

Katharine C. Buckley (202) 786-1884

Principal Contributors

Katharine C. Buckley (202) 786-1884

Boyd M. Buxton (202) 786-1886

Doyle C. Johnson (202) 786-1884

Data Information Coordinator

Wynnice P. Napper (202) 786-1882

Summary

Fruit Prices Mixed This Winter

February's index of grower prices was 9 percent below a year ago due to the heavier volume of oranges and grapefruit diverted to the lower-paying processing market after late December's freezing temperatures in Florida and Texas. Also, this season's large apple crop has placed additional downward pressure on the index. These factors have more than offset higher grower prices for fresh market citrus, strawberries, and pears this winter. In all, the grower price index is likely to remain below last year through the spring with anticipated heavy strawberry supplies entering the market in April and the likelihood that fresh apple prices may not show much strength for the remainder of the season.

Freeze Significantly Lowers Citrus Prospects

Freezing temperatures in Florida and Texas on December 23-25, 1989, significantly lowered prospects for U.S. citrus crops in 1989/90. In March, total U.S. citrus production (excluding grapefruit in California's "other areas") was forecast at 10 million short tons, down 15 percent from December's pre-freeze forecast and 22 percent from last season. Citrus production in Florida and Texas combined is forecast at 6.5 million short tons, down 23 percent from the pre-freeze forecast and 33 percent from 1988/89.

U.S. orange production in 1989/90 was forecast at 7.2 million short tons in March, down 19 percent from last season. Florida's crop was forecast down 30 percent, at 4.6 million short tons. The freeze largely affected the availability of oranges for processing, although Florida growers will complete smaller fresh market shipments earlier

than usual. In Texas, harvest of freeze-damaged fruit for processing was completed by February 1. Fresh market shipments were suspended immediately after the freeze. Despite the smaller Florida crop, growers are not receiving higher prices for processing oranges because of a reduced juice yield from damaged fruit. In addition, heavier imports of frozen concentrated orange juice (FCOJ) from Brazil's record supplies will supplement the smaller domestic orange juice pack this season.

In February, the Florida Department of Citrus forecast the Florida orange juice pack for 1989/90 at 519 million single-strength-equivalent gallons, 42 percent below 1988/89. Because of the smaller pack, FCOJ imports from Brazil may account for about half of U.S. orange juice consumption in 1989/90, compared with 29 percent in 1988/89. However, consumption is expected to fall with currently record high wholesale prices at Florida plants and record high Brazilian export prices.

Fresh market orange supplies are adequate with the larger California navel crop this season. In March, 1989/90 California navel orange production was forecast at 1.5 million short tons, 21 percent above 1988/89 and 2 percent above 1982/83's record. The larger California crop has more than offset the 10 percent smaller Arizona navel crop, which is forecast at 19,000 short tons. Despite record supplies, grower on-tree prices for California fresh market navels are ranging well above last season with a heavy volume shipped to fresh markets. U.S. fresh orange exports may also be up as much as 10 percent from last season, with a larger proportion of this season's California navel crop picking out at sizes larger than last season. The larger sizes are preferred in important U.S. export markets.

Prospects for the 1989/90 U.S. grapefruit crop were also curtailed by the freeze. In March, U.S. grapefruit production (excluding California's "other areas") was forecast at 1.7 million short tons, down 37 percent from 1988/89. Florida's production was forecast at 1.4 million short tons, down 23 percent from December's pre-freeze forecast and 39 percent from last season due to heavy fruit droppage. In Texas, where fresh market shipments were immediately suspended, March's forecast placed the crop at 80,000 short tons, 55 percent smaller than the December forecast and 58 percent below 1988/89.

Although grower prices for fresh grapefruit are substantially higher than a year ago, Florida and Texas growers may see reduced returns in 1989/90 as a larger volume of grapefruit is moved to processing markets where prices remain relatively soft. However, short fresh market grapefruit supplies and substantially higher prices portend a good season for growers in California and Arizona. The March forecast placed 1989/90 grapefruit production in California's desert region at 118,000 short tons, up 5 percent from last season, and Arizona production at 61,000 short tons, only 3 percent below last season. Grower prices in both states are dramatically improved from 1988/89 and may move higher as Florida supplies diminish.

The smaller Florida grapefruit crop will reduce the state's grapefruit juice pack this season. In February, the Florida Department of Citrus estimated that Florida processors will pack only 20.4 million gallons (40 degrees Brix) of frozen concentrated grapefruit juice (FCGJ) this season, down 38 percent from 1988/89. However, the lower pack will help offset higher carryin stocks, leaving Florida FCGJ supplies

in 1989/90 10 percent higher than last season. Florida wholesale prices for FCGJ are continuing to rise in response to the reduced pack this season.

Noncitrus Fruit Production Reaches Record High In 1989

Total utilized production of the major noncitrus fruits reached a record 16.1 million short tons in 1989, surpassing the previous record set in 1987 by only 1 percent. Larger crops of apples, apri-

cots, sweet and tart cherries, olives, pears, and California prunes were largely responsible for offsetting lower production of peaches, pineapples, cranberries, grapes, strawberries, bananas, figs, pomegranates, and plums. The total value of utilized production (excluding avocados, tart cherries, figs, pomegranates, and California prunes for which data are not yet available) stands at \$4.66 billion, compared with 1988's \$4.68 billion. Overall, grower cash receipts for 1989 noncitrus

fruit crops are expected to be nearly the same as 1988, but 20 percent higher than 1987.

Smaller Tree Nut Crops, But Supplies Continue Large

U.S. tree nut production this season was higher than earlier expected, but still 17 percent below 1988. Larger beginning stocks resulted in near record supplies. Prices were mixed and grower receipts will decline overall.

The **Fruit and Tree Nuts Situation and Outlook** has a new format. There's less text than previously and material is presented in information packages. Each package covers a specific economic point about current and future conditions and is supported with tables or charts. The goal is to give you a more informative and useful report. I'd like your response to this new presentation.

Kate Buckley
1301 New York Ave., NW.,
Washington, DC 20005-4788

(202) 786-1884

Table 1--Economic indicators of the U.S. fruit and tree nut sectors

Item	1982/86 Average	Annual			1989	1989	1990
		1987	1988	1989			
Gross National Product (1982 \$ bil.)	3,454.32	3,853.70	4,024.40	4,142.60	4,069.40	4,168.10	
GNP implicit price deflator (% change)	2.62	3.2	3.3	4.1	4.7	3.5	
Disposable personal Income:					1988 IV Quarter1/	1989 IV Quarter1/	
Total (1982 \$ bil.)	2,448.264	2,676.6	2,793.3	2,906.7	2,835.9	2,938.3	
Per capita (dollars)	10,320.8	10,970	11,337	11,681	11,466	11,761	
Personal consumption expenditures:							
Food and beverages (1982 \$ bil.)	423.9792	452.7	460	462.9	462.1	460.7	
Civilian population (mil.)	234.834	241.7	244.1	246.6	245.1	247.4	
Indexes of prices received by farmers:		--1977=100--			February 1989	February 1990	
All farm products	132.2	126	138	147	149	153	
Fruit, all	170.8	181	181	184	185	173	
Fruit, fresh market	181.2	194	194	194	195	177	
Indexes of prices paid by farmers:					January 1989	January 1990	
All production items	156.8	151	170	177	166	169	
Fertilizer	136.6	118	130	137	133	131	
Ag chemicals	125.4	124	126	132	128	134	
Fuels and energy	195.2	161	163	180	166	200	
Interest payable per acre	235.8	190	186	177	177	178	
Taxes payable per acre	132.0	139	142	152	152	156	
Wage rates (seasonally adjusted)	151.4	167	172	185	186	179	
Producer price indexes: 2/		--1982=100--					
Fresh fruit	106.8	112.0	112.7	111.6	107.8	103.1	
Dried fruit	95.0	95.0	99.1	102.8	101.1	106.9	
Canned fruit	107.2	115.3	120.1	122.5	122.5	123.9	
Frozen fruit and juice	107.0	113.3	129.9	124.4	126.7	128.6	
Consumer price indexes:		--1982-84=100--					
All food	103.4	113.6	118.3	124.0	121.1	127.4	
Fresh fruit	102.9	113.5	118.2	125.1	122.2	130.4	
Processed fruit	107.0	132.0	143.0	152.4	145.4	171.4	
Processed fruit	103.2	110.6	122.0	125.9	125.6	125.1	
Farm-retail price spreads: 3/		--1982-84=100--			January 1989	January 1990	
Market basket	104.3	119.4	125.3	134.0	129.6	139.5	
Fresh fruits	110.0	145.7	160.2	175.8	171.8	202.8	
Fresh vegetables	105.2	126.5	141.3	153.0	145.2	167.8	
Processed fruit and vegetables	102.1	108.3	111.7	122.0	118.8	121.4	
Fruit and tree nuts:							
Citrus							
Production (1,000 tons)	11,647.2	11,994	12,761	13,132	NA	NA	
Per capita consumption (lbs.)	111.69	112.82	113.61	NA	NA	NA	
Noncitrus							
Production (1,000 tons)	13,761.6	15,453	15,285	5/15,536	NA	NA	
Per capita consumption (lbs.)	92.01	101.47	97.72	NA	NA	NA	
Tree Nuts (shelled basis)							
Per capita consumption (lbs.)	2.29	2.24	2.51	NA	NA	NA	
Exports, U.S.:					December 1989	December 1989	
Fruits, nuts, and prep. (mt.)	5,112	4,364	5,732	5,008	386	365	
Fruit juices incl. frozen (1,000 hl.)	2,054	2,146	2,437	2,601	201	199	
Imports, U.S.:							
Fruits, nuts, and prep. (mt.)	1,286	1,734	1,806	2,019	128	134	
Bananas (mt.)	2,792	3,106	3,020	3,097	234	249	
Fruit juices incl. frozen (1,000 hl.)	26,762	34,059	26,659	27,416	2,978	2,825	
Real exchange rates, selected countries 4/:		--1985=base year--					
Canada (dollar)	1.3066	1.2893	1.1959	1.1501	1.1658	1.1038	
Japan (yen)	222.0749	151.8217	138.8924	155.0397	135.8838	160.4887	
United Kingdom (pound)	0.6999	0.6000	0.5460	0.5806	0.5251	0.5840	
New Zealand (dollar)	1.7969	1.3672	1.2018	1.3193	1.2350	1.3211	
Hong Kong (dollar)	7.5140	7.5830	7.3418	7.0588	7.3407	6.9409	
Brazil (cruzado)	5.4015	5.1318	4.0770	4.8777	4.5863	7.2738	
Chile (peso)	131.1292	162.0487	163.9135	162.2917	156.4292	153.9918	
Taiwan (new dollar)	37.7794	33.2282	28.6675	28.4252	30.2868	28.0741	

N.A. = Not applicable.

1/ Quarterly data are seasonally adjusted at annual rates. 2/ Commodities ready for sale to ultimate consumer. 3/ Retail costs are based on indexes of retail prices for domestically produced farm foods published by the Bureau of Labor Statistics. The farm value is the payment to farmers for quantity of farm product equivalent to retail unit, less allowance for by-products. 4/ Currencies are deflated to constant 1985 values by respective countries CPI before calculating units of currency per U.S. dollar. 5/ Excludes avocados.

Grower Prices Under Pressure, But Retail Prices Remain Strong

The grower price index is depressed with a heavy volume of processing oranges and grapefruit offsetting higher grower prices for fresh market supplies. The Consumer Price Index for fresh fruit has been strengthened by lower supplies.

Grower Prices A Mixed Bag

In February, the index of grower prices for fresh and processing fruit stood at 173 (1977=100), up 5 percent from January, but down 9 percent from a year ago. The index reflects the lower prices being paid to Florida growers for processing oranges and grapefruit than a year ago, after freezing temperatures swept through Florida and Texas in late December. The freeze significantly curtailed fresh market shipments and lowered juice yields for processed oranges and grapefruit. The heavier volume of freeze-damaged oranges and grapefruit being diverted into the lower-paying processing market, in addition to the lower prices received by apple growers because of this season's large crop, have more than offset the higher prices being received for fresh market citrus, strawberries, and pears.

Grower prices for fresh citrus are likely to remain strong through spring due to the reduced Florida and Texas supplies, but lower prices for processing citrus fruit will keep downward pressure on the grower price index. Early season strawberry prices, which were initially boosted by the Florida freeze, and subsequently by a freeze in southern California, are likely to fall in April when heavy supplies from both production areas simultaneously enter the market. Although higher grower prices for pears will continue to provide some upward pressure on the index, apple prices may not show much strength for the remainder of the season. In all, the grower price index is likely to remain below a year earlier through the spring.

Consumer Price Index for Fresh Fruit Rises

Retail prices for fresh fruit as measured by the Bureau of Labor Statistics' (BLS) Consumer Price Index (CPI) remained strong in 1989, boosted by shorter crops of several important noncitrus fruits. In January, the CPI for fresh fruit stood at 171 (1982-84=100), up almost 11 percent from the December 1989 index and 17.9 percent above a year ago. The advance between December and January was induced by a strengthening in retail prices for apples, bananas, and grapefruit, while higher retail prices for bananas, grapefruit, and lemons supported the index above January a year ago. The fresh fruit CPI likely will remain above last year through spring, with good demand for most fresh citrus commodities and smaller fresh apple and pear stocks in regular and controlled atmosphere storage facilities.

CPI for Processed Fruit Likely To Strengthen

Retail prices for processed fruit in 1989 averaged 3 percent above 1988. Prices for fruit juices and frozen fruit gained an average 4 percent, while prices for canned and dried fruit averaged 3 percent higher. In January 1990, the CPI for processed fruit stood at 125.1 (1982-84=100), down .4 percent from December 1989 and .1 percent below a year ago. The monthly decline was induced by lower retail prices for fruit juices and frozen fruit. However, recently announced wholesale price advances for orange juice and lower cold storage stocks of most frozen fruits will provide upward pressure on retail prices for these commodities. This will likely offset the relatively steady demand and prices for canned and dried fruit this

spring, causing the CPI for processed fruit to advance over the next few months.

Table 2--Index of prices received by growers for fresh and processing fruit, 1986-90

Year	Annual	Quarters			
		1st	2nd	3rd	4th
--1977=100--					
1986	168	153	157	175	187
1987	182	164	180	176	207
1988	184	167	191	197	183
1989	190	180	195	186	199
1990		1/170			

1/ Two-month average.

Source: Agricultural Prices, NASS, USDA.

Table 3--Consumer Price Index for fresh fruit, 1986-90

Year	Annual	Quarters			
		1st	2nd	3rd	4th
--1982-84=100--					
1986	119	113	121	124	117
1987	132	129	138	133	129
1988	143	132	143	150	146
1989	152	148	154	152	155
1990		1/171			

1/ January's figure only.

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

Freeze Significantly Lowers Citrus Crop Prospects

March forecast places 1989/90 U.S. citrus production 22 percent lower than last season.

Smallest Citrus Crop in Recent Years

Freezing temperatures on December 23-25, 1989, wreaked havoc across Florida and Texas, causing the largest

setback in U.S. citrus production since 1985. Prospects for 1989/90 season orange and grapefruit production in the two States were significantly affected along with Florida's specialty

citrus crops. As of March, total U.S. citrus production (excluding grapefruit production in California's "other areas") was forecast at 10 million short tons, down 22 percent from last season.

Table 4--Citrus fruit: Production, 1987/88, 1988/89, and indicated 1989/90 1/

Crop and State	Boxes			Ton equivalent		
	Utilized		Indicated 1989/90	Utilized		Indicated 1989/90
	1987/88	1988/89		1987/88	1988/89	
	--1,000 boxes-- 2/			--1,000 short tons--		
Oranges:						
Early, midseason, and navel varieties 3/:						
Arizona	610	550	500	23	21	19
California	31,500	34,000	41,000	1,182	1,275	1,538
Florida	78,500	85,300	68,000	3,532	3,839	3,060
Texas	940	1,200	1,050	40	51	45
Total	111,550	121,050	110,550	4,777	5,186	4,662
Valencias:						
Arizona	1,210	1,150	1,200	45	43	45
California	27,500	24,800	25,000	1,031	930	938
Florida	59,500	61,300	35,000	2,677	2,759	1,575
Texas	490	650	155	21	28	7
Total	88,700	87,900	61,355	3,774	3,760	2,565
All oranges:						
Arizona	1,820	1,700	1,700	68	64	64
California	59,000	58,800	66,000	2,213	2,205	2,476
Florida	138,000	146,600	103,000	6,209	6,598	4,635
Texas	1,430	1,850	1,205	61	79	52
Total	200,250	208,950	171,905	8,551	8,946	7,227
Grapefruit:						
Arizona	1,950	1,950	1,900	63	63	61
California, all 4/	9,100	8,500	3,700	298	280	118
Desert Valleys	4,200	3,500	3,700	134	112	118
Other areas	4,900	5,000	4/	164	168	4/
Florida, all	53,850	54,750	34,000	2,288	2,326	1,445
Seedless	51,100	51,400	32,500	2,171	2,184	1,381
Color	21,900	23,700	16,000	930	1,007	680
White	29,200	27,700	16,500	1,241	1,177	701
Other	2,750	3,350	1,500	117	142	64
Texas	3,800	4,800	2,000	152	192	80
Total	68,700	70,000	41,600	2,801	2,861	1,704
Lemons:						
Arizona	3,650	3,800	3,000	139	144	114
California	17,000	16,200	16,500	646	615	627
Total	20,650	20,000	19,500	785	759	741
Tangerines: 5/						
Arizona	600	650	650	23	25	24
California	2,090	2,040	1,750	78	76	66
Florida	2,450	2,900	1,700	117	138	81
Total	5,140	5,590	4,100	218	239	171
Tangelos:						
Florida	4,200	3,800	3,000	189	171	135
Temples:						
Florida	3,550	3,750	1,400	160	169	63
All citrus	302,490	312,090	6/ 241,505	12,704	13,145	6/ 10,041

N.A.=Not available.

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.
 2/ Net content of box varies. Approximated averages are as follows: Oranges-Arizona and California, 75 lbs.; Florida, 90 lbs.; Texas, 85 lbs.; Grapefruit-California, Desert Valleys, and Arizona, 64 lbs.; other California areas, 67 lbs.; Florida, 85 lbs.; Texas, 80 lbs.; Lemons, 76 lbs.; Tangelos, 90 lbs.; Tangerines-California and Arizona, 75 lbs.; Florida, 95 lbs.; and Temples, 90 lbs. 3/ Navel and miscellaneous varieties in California and Arizona. Early and midseason varieties in Florida and Texas, including small quantities of tangerines in Texas. 4/ The first forecast for California grapefruit "other areas" will be as of April 1, 1990.
 5/ Florida "all tangerines" includes sunburst tangerines beginning with the 1989/90 season. 6/ Excludes California grapefruit in other areas.

Florida And Texas Growers Scramble To Salvage Freeze-Damaged Oranges

The 1989/90 season supply of oranges for processing has been significantly curtailed, but growers are not likely to see appreciably higher prices despite lower supplies.

Florida Crop Smallest In Over 18 Years

Late December's freezing temperatures sent Florida growers and processors scrambling to salvage freeze-damaged oranges. Priority was given to harvesting and processing early and mid-season varieties, about 74 percent of which were reaching maturity and still in groves at the time of the freeze. Unlike previous seasons, fresh market shipments from Florida were not immediately suspended, but inspectors closely monitored packing operations to ensure that freeze-damaged fruit did not reach the fresh market. Because of the shortage of fresh market quality oranges this year, fresh market shipments were essentially completed by mid-February.

Despite severe fruit droppage, Florida growers were able to salvage more oranges than was expected in early January. In March, the 1989/90 Florida orange crop was forecast at 4.64 million short tons (103 million boxes), down 21 percent from the pre-freeze forecast and 30 percent from last season. Hardest hit was the valencia crop, 100 percent of which was exposed to the freezing temperatures. Growers were able to minimize loss of early and mid-season oranges through successful salvage operations.

Texas Season Over by February 1

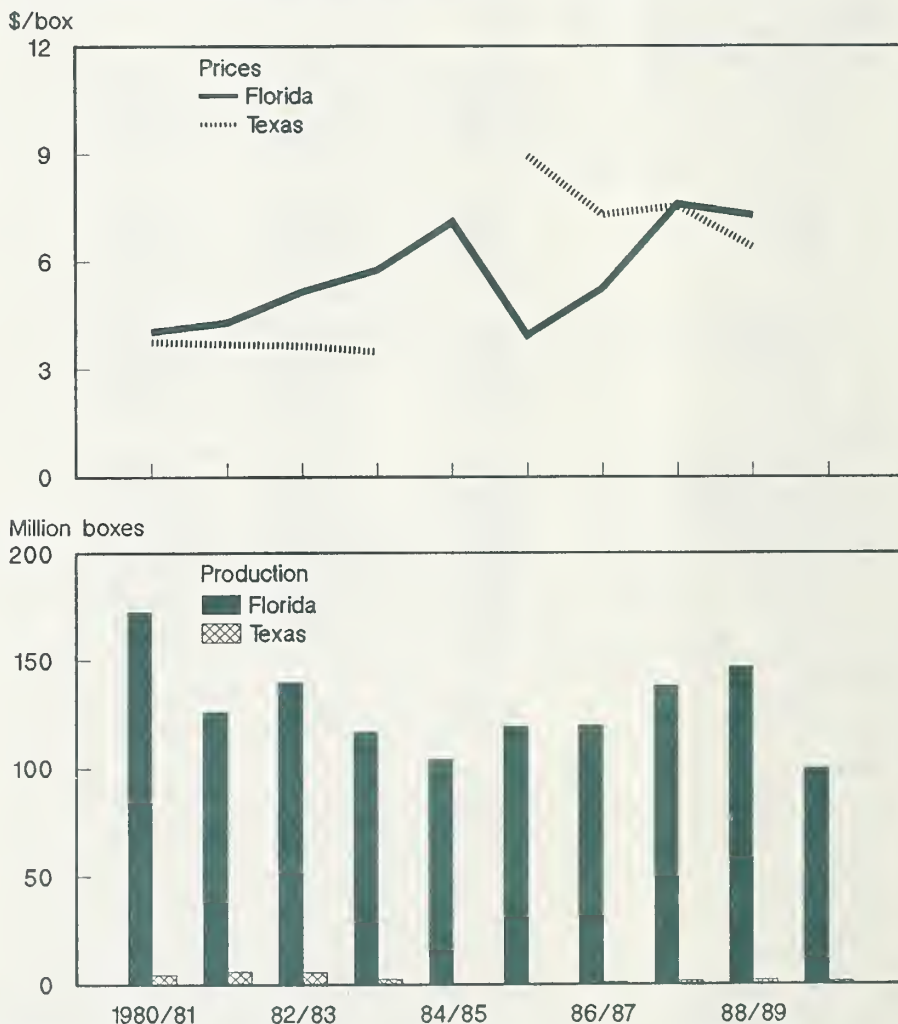
In Texas, harvest of freeze-damaged oranges for processing was completed by February 1. Fresh market shipments were suspended immediately following the freeze. The March forecast for the Texas orange crop placed production at

52,000 short tons (1.2 million boxes), down 37 percent from the pre-freeze forecast and 34 percent from last season. While the extent of tree damage is still not known, Texas growers are not expected to harvest a commercial orange crop next season and production is likely to be minimal in 1991/92.

Grower Prices Don't Reflect Smaller Crop

Despite the shorter Florida and Texas orange crops, grower prices for oranges for processing have not advanced because of the lower juice yields obtained from freeze-damaged oranges, and because heavier imports of frozen

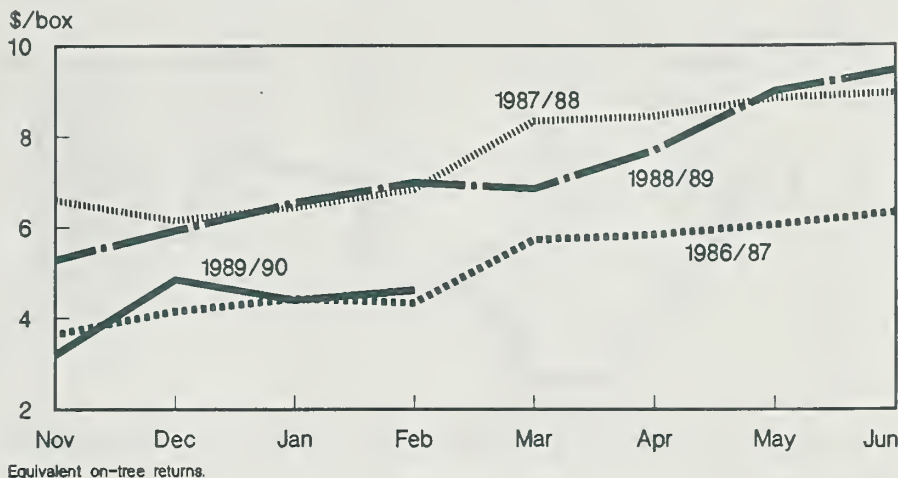
Figure 1
All Oranges: Production and Season Average Grower Price, Florida and Texas



Note: No commercial supplies were harvested in Texas for 1984/85 due to the severe 1983 freeze

concentrated orange juice (FCOJ) from Brazil's record supplies will supplement the smaller U.S. pack. In February, the grower on-tree price for processing oranges in Florida averaged \$4.95 per box, compared with \$6.70 a year ago. Similarly, Texas grower prices averaged \$3.64 per box in January, compared with \$4.14 during January 1989. Grower prices are not likely to rise appreciably for the remainder of the season.

Figure 2
Oranges for Processing: Florida Grower Prices



Smaller Florida Orange Crop Will Curtail Domestic Orange Juice Production

Florida will account for a smaller proportion of total U.S. orange juice production in 1989/90. Movement is likely to decline with higher retail prices.

Smaller Crop and Juice Yield Will Reduce Pack

The shorter Florida orange crop and a smaller juice yield will reduce the Florida pack from domestic oranges this season. In February, the Florida Department of Citrus estimated that 69 million boxes of Florida oranges will be used for FCOJ in 1989/90, down 39 percent from 1988/89. In addition, the Department estimated that 26.2 and .7 million boxes will be used for chilled and canned orange juice, down 12 and 39 percent, respectively.

Overall, the Florida orange juice pack was forecast at 518.7 million single-strength-equivalent (SSE) gallons in February, 42 percent less than in 1988/89. According to the Florida Citrus Processors Association, Florida processors had packed only 67.5 million gallons (42 degrees Brix) of FCOJ as of mid-February, compared with 92.9 million at the same time last year. The canned orange juice pack also lagged a

year earlier by 3 percent, at 3.3 million gallons. Conversely, the pack of chilled orange juice, including that produced from reconstituting FCOJ, was up 23 percent to 203.4 million gallons.

Record Large Brazilian FCOJ Supplies

With favorable weather and better grove care practices producing higher

than expected yields, the Brazilian orange crop is expected to be record high this season. The larger crop and an estimated juice yield of 1.31 gallons per box will lead to record Brazilian FCOJ production. With harvest nearing completion, Brazilian FCOJ production for 1989/90 is forecast at 327.6 million gallons (42 degrees Brix), up 33 percent from last season and 9 percent from 1985/86's record 301.7 million.

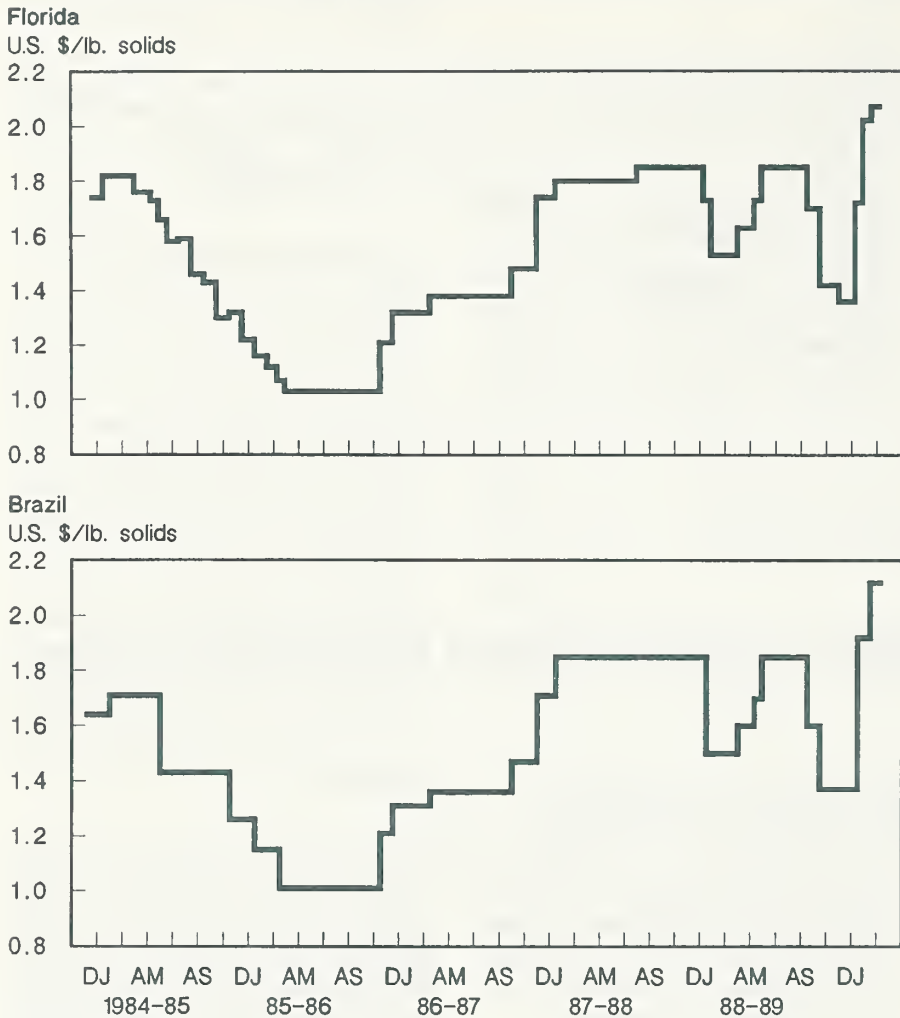
Table 5--Oranges used for frozen concentrate, Florida, 1984/85-1989/90

Season	Orange and Temple production --Million boxes--	Used for frozen concentrates 1/		Yield per box Gallons 2/
		Percent		
1984/85	107.2	86.1	80.3	1.38
1985/86	122.2	96.1	78.6	1.38
1986/87	123.1	96.2	78.1	1.51
1987/88	141.6	110.2	77.8	1.55
1988/89	150.4	113.7	75.5	1.53
1989/90	3/ 104.4	4/ 69.0	66.1	1.24

- 1/ Includes tangelos, Temples, tangerines, and K-early citrus.
- 2/ Gallons per box at 42.0 degrees Brix equivalent.
- 3/ Preliminary.
- 4/ Florida Department of Citrus forecast as of February 1990.

Sources: Crop Production, March 1990; Citrus Fruits, NASS, USDA; and Florida Department of Citrus.

Figure 4
FCOJ: Florida Wholesale and Brazilian Export Prices



Bimonthly data.
 Source: Florida Department of Citrus; Food Institute Report.

Table 6--Florida orange-juice production, 1978/79-1989/90

Season	Frozen concentrated 1/	Canned single-strength 2/	Chilled 2/	Total
--Million sse gallons--				
1978/79	758.8	33.5	125.0	917.3
1979/80	1,014.0	36.5	134.8	1,185.3
1980/81	732.9	28.8	95.7	857.4
1981/82	538.4	20.6	85.6	644.6
1982/83	684.9	12.3	104.3	801.5
1983/84	489.6	10.9	92.8	593.3
1984/85	478.5	6.1	82.5	567.1
1985/86	534.8	7.1	97.3	639.2
1986/87	585.9	5.3	117.2	708.4
1987/88	686.5	4.8	137.3	828.6
1988/89	705.7	6.4	176.3	888.4
1989/90	373.0	3.8	141.9	518.7

1/ Pack from fruit, Florida Citrus Processors Association.
 2/ Utilization multiplied by yield, Florida Citrus Processors Association.
 3/ Estimate made by the Florida Department of Citrus as of February 1990.

Source: Florida Department of Citrus.

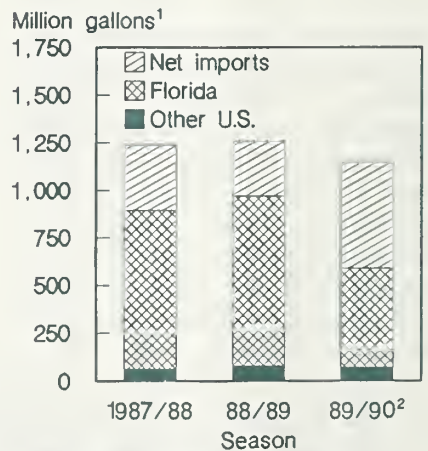
Brazil is expected to export about 95 percent of its production this season, with the remainder to be sold in the domestic market and for replenishing safety stocks, which have been low in recent years. The United States is likely to account for about one-half of Brazil's FCOJ exports in 1989/90, up from 40 percent in 1988/89.

FCOJ Wholesale Prices Record High

Responding to the tight U.S. orange juice market this season, Brazilian processors raised their FCOJ export prices to a record \$2.12 per pound solids during the last week of January. This most recent price advance represents a 55-percent increase over the pre-freeze price. F.o.b. prices at Florida plants have also increased 52 percent over the pre-freeze price to a record \$2.07 per pound solids in February.

While wholesale prices will probably not rise appreciably more during the remainder of the season, consumption is likely to drop off in response to higher

Figure 3
U.S. Orange Juice Supply



1/ Single strength equivalent. 2/ Forecast.

retail prices. Given current wholesale prices, the Florida Department of Citrus estimates that retail prices will average \$4.17 per SSE gallon in 1989/90, 12.4 percent above last season. The Department expects that with higher retail prices, orange juice sales in retail outlets with annual sales exceeding \$4 million, will decline 3.6 percent from last season's 688 million SSE gallons.

Table 7--Brazilian FCOJ production and utilization, 1979/80-1989/90

Season	Beginning stocks	Production	Domestic consumption	Exports	Ending stocks
--Million 42 degree Brix gallons--					
1979/80	10.3	150.0	3.8	132.1	24.5
1980/81	24.5	170.0	4.1	171.4	19.0
1981/82	19.0	207.6	4.5	204.8	17.2
1982/83	17.2	195.8	4.5	174.8	33.8
1983/84	33.8	214.1	4.5	231.4	12.1
1984/85	12.1	270.3	3.4	263.8	15.2
1985/86	15.2	301.7	5.2	242.0	69.6
1986/87	69.6	207.9	6.9	241.0	29.7
1987/88	29.7	244.8	6.9	254.5	13.1
1988/89	13.1	245.8	6.9	243.8	8.3
1989/90 1/	8.3	327.6	6.9	310.3	18.6

1/ Forecast.

Source: Foreign Agricultural Service, USDA.

Fresh Market Orange Supply Adequate

Despite smaller crops in Florida and Texas, larger supplies and higher prices for California/Arizona fresh navel oranges portend a good year for growers.

California/Arizona Shipments Strengthen

Tighter markets in the Eastern States for fresh oranges following last December's Florida/Texas freeze have helped alleviate the fears of California orange growers who are faced with moving a record-large navel orange crop this season. In March, the California navel crop was forecast at 1.54 million short tons (41 million boxes), 21 percent larger than the 1988/89 harvest and 2 percent above 1982/83's record. Despite dry conditions during much of the season, fruit set was heavy and a large proportion of the crop is of good quality. Although Arizona's navel crop is forecast down 10 percent from last season's 21,000 short tons (550,000 boxes), the fruit being harvested is also of good quality.

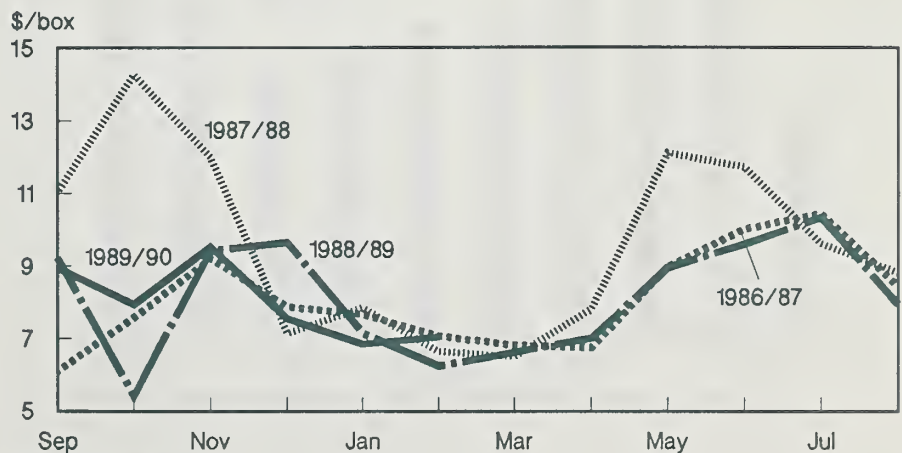
With the California/Arizona navel harvest nearly 45 percent complete in late February, shipments to domestic markets were running 21 percent ahead of the same time last year. Although there is a shortage of processing oranges this season due to the Florida/Texas freeze, California/Arizona navel ship-

ments to processors were down almost 8 percent from last year, attesting to the strong fresh market demand for the quality crop this season.

Despite record supplies, grower on-tree prices for California fresh market navels are well above last season. In February, the average on-tree price for California

fresh navels reached \$7.04 per box, up 29 percent from last year. Prices are not likely to rise appreciably this season because of indications that harvest of the California valencia orange crop will begin early this year. The additional supplies may provide some downward pressure on fresh market orange prices until the navel harvest is complete.

Figure 6
Fresh Oranges: California Grower Prices



Equivalent on-tree returns.

Export Prospects Favorable

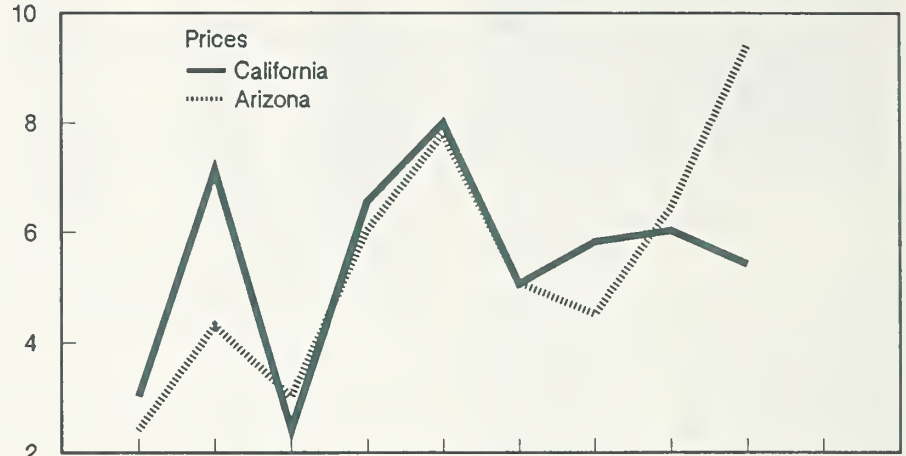
A higher proportion of this season's California navel orange crop is picking out at sizes larger than last season. Because the larger sizes are preferred in the important Asian markets of Japan, Hong Kong, and Singapore, and because of the generally strong economies of these countries, prospects are favorable for increasing U.S. fresh orange exports in 1989/90. USDA's Foreign Agricultural Service (FAS) has forecast total U.S. orange exports at 300,000 metric tons in fiscal 1990, up 10 percent from the previous year. Exports to Japan, the largest market, will be aided by a broadening of the Japanese import quota under the U.S.-Japan Citrus Agreement of 1988, from 170,000 metric tons to 192,000 in April 1990. However, the less favorable exchange rate between the U.S. dollar and the Japanese yen that has evolved in recent months, may have a dampening effect on exports to that country.

U.S. fresh orange exports have also benefited from export promotion expenditures under the Targeted Export Assistance Program (TEA). This 5-year program is due to expire after 1990 and it is not yet known whether the 1990 farm bill will contain similar provisions.

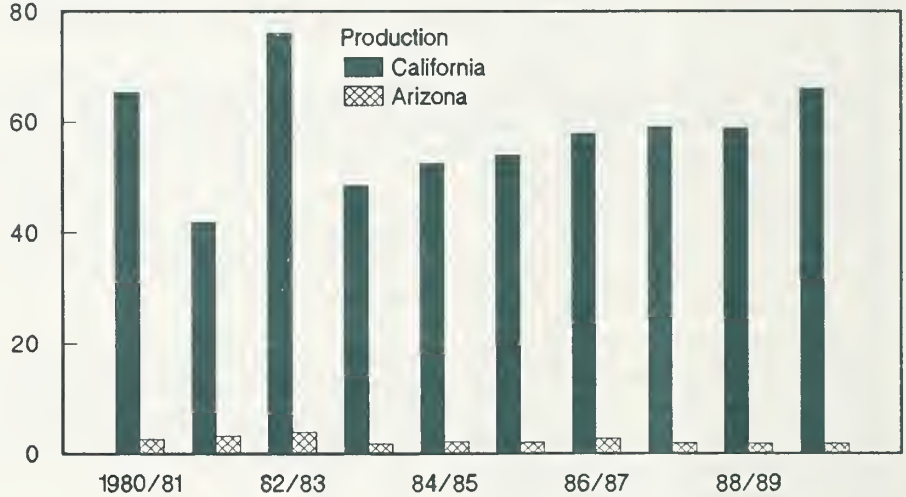
Figure 5

All Oranges: Production and Season Average Grower Price, California and Arizona

\$/box



Million boxes



Smaller U.S. Grapefruit Supplies

Freeze tightens fresh grapefruit supplies for 1989/90; prices rise.

Freeze Damages Florida and Texas Crops

Heading into the 1989/90 grapefruit harvest with production prospects already lowered by freezing weather in February 1989 that nipped blooms and stunted new growth, Florida and Texas grapefruit growers took another hard hit from late December's freezing temperatures. The March forecast placed Florida's grapefruit production at 1.45 million short tons (34 million boxes), down 23 percent from December's pre-freeze forecast and 38 percent from last season due to heavy fruit droppage. In Texas, where fresh market shipments were immediately suspended, the March forecast placed the crop at 80,000 short tons (2 million boxes), 55 percent smaller than the December forecast and 58 percent below 1988/89.

Because of quality deterioration that rapidly rendered damaged grapefruit unsuitable for the fresh market, a larger portion of the Texas and Florida crops will be processed this season. In Texas, harvest of the small amount of grapefruit that was recoverable for processing was completed before February 1. Florida's Citrus Administrative Committee reported shipments to processors through the last week in February at 804,650 short tons, 33 percent above a year ago, while Florida fresh grapefruit shipments lagged 14 percent at 518,225 tons.

Grower Returns Likely To Decline

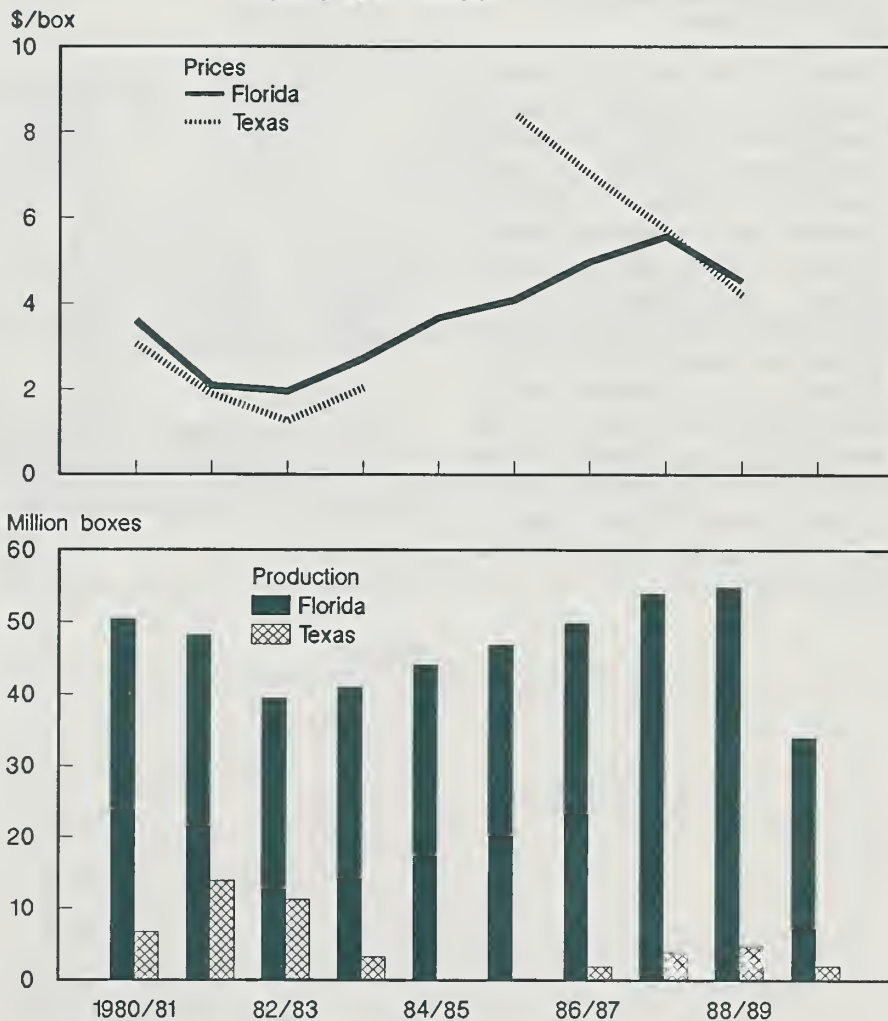
Although grower prices for fresh grapefruit are substantially higher than a year ago because of the freeze, Florida and Texas growers are likely to see reduced returns in 1989/90 as a larger volume of grapefruit is moved to processing mar-

kets where prices remain relatively soft. In February, grower on-tree prices for Florida fresh grapefruit averaged \$11.15 per box, compared with \$4.29 in February 1989. During the same month, Florida growers received an average \$3.04 for processing grapefruit, compared with \$2.75 during February 1989.

Short Market Benefits California/Arizona Growers

Short fresh market grapefruit supplies and substantially higher prices portend a good season for California and Arizona growers. In March, grapefruit production in California's desert region was forecast at 118,000 short tons (3.7 million boxes), up 5 percent from a year

Figure 7
All Grapefruit: Production and Season Average Grower Price, Florida and Texas



Note: No commercial supplies were harvested in Texas for 1984/85 due to the severe 1983 freeze.

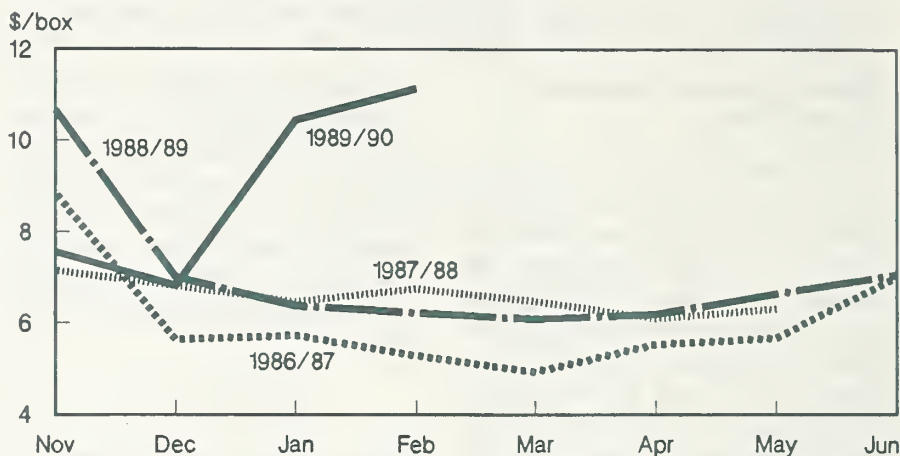
was forecast at 118,000 short tons (3.7 million boxes), up 5 percent from a year earlier, while Arizona's crop was placed at 61,000 short tons (1.9 million boxes), only 3 percent lower than last season. While growers are reportedly delaying picking in order to obtain larger sizes, grower prices in both States are significantly improved over 1988/89. In February, grower on-tree prices for California fresh grapefruit averaged \$9.92 per box, compared with \$3.19 a year earlier. Similarly, Arizona prices averaged \$9.06 per box, compared with \$3.70 in February 1989. Prices may move higher in both States as Florida supplies diminish.

Shorter Supplies Dampen Export Prospects

The lack of export-quality fresh grapefruit supplies in Florida and Texas has severely affected export shipments of fresh grapefruit this season. In recent years, Florida has built a strong export market for its fresh grapefruit, primarily in Japan, by shipping only the best quality fruit. USDA forecasts that U.S. fresh grapefruit exports will decline 60 percent from last season's 454,000 metric tons because of Florida's reduced export-quality output. As of the last week of February, Florida's Citrus Administrative Committee reported offshore exports of fresh grapefruit were 36 percent lighter than at the same time last year.

Figure 8

Fresh Grapefruit: Florida Grower Prices



Equivalent on-tree returns.

Table 8--U.S. fresh grapefruit shipments, 1984/85 through 1988/89 and estimates for 1989/90

Item	Season 1/					
	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90 2/
--1,000 4/5 bushel cartons--						
Domestic	21,325	24,469	22,764	21,339	19,482	15,000
Export	8,302	14,223	18,412	23,859	26,881	10,000
Canada	2,646	3,144	2,940	3,191	3,313	2,200
Europe	3,098	4,865	6,231	8,436	8,835	3,900
Far East	2,559	6,214	9,241	12,223	14,728	3,900
Total 3/	29,627	38,692	41,176	45,198	46,363	25,000

1/ Seasons are August 1 through July 31.

2/ Florida Department of Citrus forecast as of February 1990.

3/ Some figures may not add to total due to rounding.

Source: Florida Department of Citrus.

U.S. Grapefruit Juice Supplies Tighter; Prices Rise

A smaller U.S. grapefruit juice pack in 1989/90 will somewhat offset higher carryin stocks.

Smaller Florida Crop Will Reduce Pack

Florida's smaller grapefruit crop will result in a reduced pack of frozen concentrated grapefruit juice (FCGJ) in 1989/90. Although almost 52 percent of the Florida crop may be processed into FCGJ, the Florida Department of Citrus estimates that Florida processors will pack only 20.4 million gallons (40 degrees Brix) this season, down 38 percent from 1988/89. The smaller expected pack, combined with carryin stocks of 15.2 million gallons, will result in total Florida FCGJ supplies of 35.6 million gallons, 10 percent more than last year. The Florida Citrus Processors Association reports that Florida processors packed 16.4 million gallons of FCGJ through mid-February, compared with 15.9 the previous year.

Less fresh fruit will also be available for processing chilled (CGJ) and canned (CSSG) grapefruit juice products this season. However, since these two products are obtained primarily by reconstituting FCGJ, the total pack of CGJ and CSSG may not decline much, and the impact of lower FCGJ supplies may not be apparent until 1990/91. The Florida Citrus Processors Association reports that 13.2 million gallons of CGJ were packed by Florida processors as of mid-February, compared with 12.6 million a year earlier. Only 17 percent of the CGJ pack to date was obtained by processing fresh fruit, compared with 29 percent last year to date. The Association also reports that Florida processors packed 2.8 million gallons of CSSG through mid-February, down 24 percent from the same month last year.

Grapefruit Juice Consumption May Decline

Already relatively high at the beginning of 1989/90, wholesale prices for Florida grapefruit juice have continued to rise in

response to the reduced pack this season. F.o.b. Florida plant prices for FCGJ (in easy open 48/6-oz. packs) have increased about 12 percent from pre-freeze levels, while f.o.b. prices for CSSG (12/46-oz. sweetened or unsweetened white) have risen 56 percent. Given the current wholesale price

structure, the Florida Department of Citrus estimates that retail grapefruit juice prices may average \$4.39 per SSE gallon in 1989/90, almost 12 percent above last season. Sluggish retail demand may result in as much as an 8-percent decline in U.S. consumption of grapefruit juice this season.

Table 9--Grapefruit used for frozen concentrate, Florida, 1984/85-1989/90

Season	Grapefruit	Used for frozen concentrates		Yield per box
	--Million boxes--	Percent		Gallons 1/
1984/85	44.0	23.0	52.2	1.08
1985/86	46.8	21.6	46.1	1.20
1986/87	49.8	24.1	48.3	1.20
1987/88	53.9	26.7	49.5	1.20
1988/89	54.8	26.6	48.5	1.18
1989/90	2/ 34.0	3/ 17.6	51.8	1.12

--- = Not available.

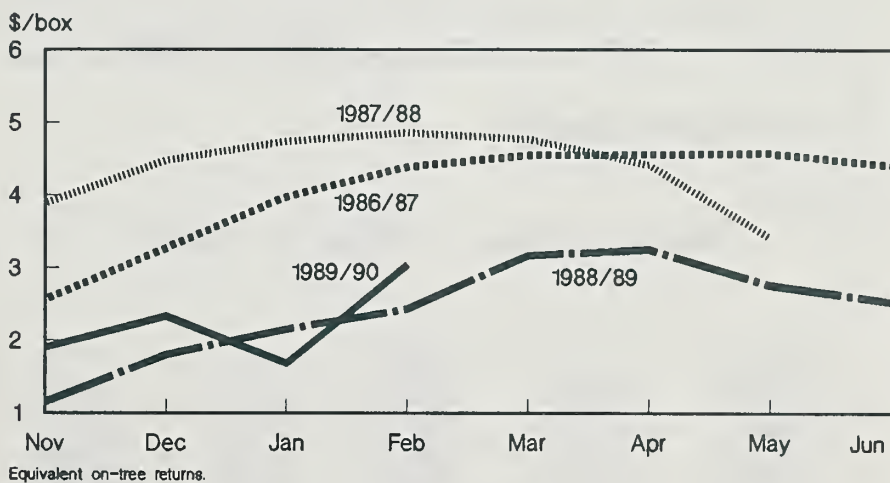
1/ Gallons per box at 40.0 degrees Brix equivalent.

2/ Preliminary.

3/ Florida Department of Citrus forecast as of February 1990.

Sources: Crop Production, March 1990; Citrus Fruits, NASS, USDA, Florida Citrus Processors Association, and Florida Department of Citrus.

Figure 9
Grapefruit for Processing: Florida Grower Prices



U.S. Lemon Production Down

Although production will drop for the fourth straight year, adequate U.S. supplies of export-grade lemons will enhance prospects for increasing foreign shipments.

Crop Smallest Since 1985/86

The March forecast placed U.S. lemon production at 741,000 short tons (4.1 million boxes), down 2 percent from last season and the smallest crop since 1986/87. The smaller U.S. crop results from lower production in Arizona, where growers expect to harvest only 114,000 short tons (3 million boxes), 21 percent less than 1988/89. California's lemon production is forecast up a mod-

erate 2 percent from last season, at 627,000 short tons (16.5 million boxes).

Shorter supplies have strengthened grower prices over last season, particularly for the fresh market. February grower on-tree prices for all California lemons averaged \$9.49 per box, compared with \$4.31 a year ago. California growers received an average on-tree price of \$14.98 per box for fresh lemons during the month, up 78 percent from February 1989. The situation is similar

in Arizona, where on-tree prices for all lemons averaged \$4.31 per box in February, compared with \$1.53 a year earlier, and grower prices for fresh lemons were 45 percent above February 1989, at \$14.38.

This season's short supplies and higher fresh market prices have boosted the proportion of the harvest that has been shipped to domestic fresh markets. Through February, 45 percent of the lemon harvest to date had been shipped to domestic fresh markets, compared with 37 percent last year. U.S. fresh lemon exports, although down 10 percent from this time last year in terms of total volume, comprised 22 percent of the California/Arizona harvest through February, compared with 20 percent a year earlier. To date, shipments to processors are down 36 percent from February 1989.

U.S. Fresh Lemon Exports Forecast Higher

Despite the smaller domestic crop this season, U.S. fresh lemon exports may rise due to good availability of export-quality lemons and a tighter world supply stemming from smaller crops in several major producing countries. The USDA places U.S. fresh lemon exports at 135,000 metric tons in fiscal 1990, up 3 percent from last year. Japan is the largest market, accounting for about 90 percent of U.S. fresh lemon exports.

U.S. exporters of fresh lemons to Japan will face increasing competition from Spain in the near future. Japan has recently established plant quarantine requirements for Spanish lemons, which were previously denied entry into Japan because of the presence of the Mediterranean fruit fly in Spain's growing areas. Increased Japanese imports of Spanish lemons could alter the current 99 percent share of the Japanese market held by U.S. exporters.

Figure 10

U.S. Lemons: Production and Season Average Grower Price

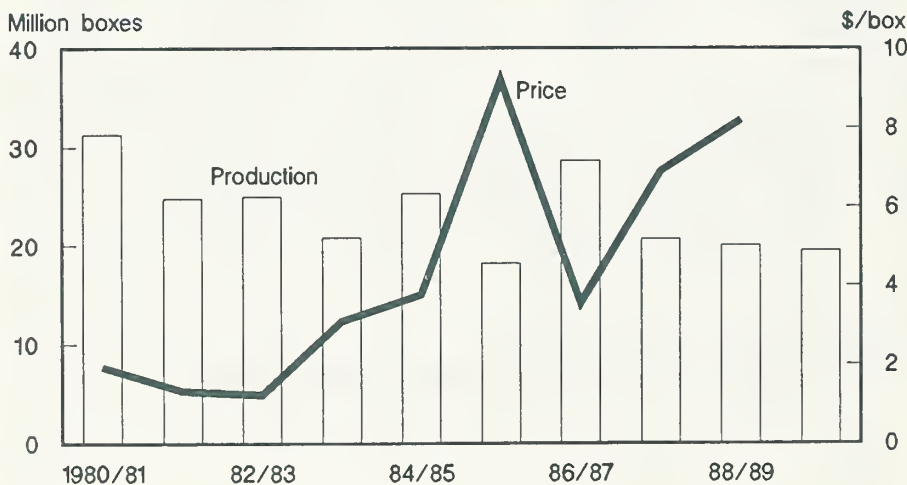
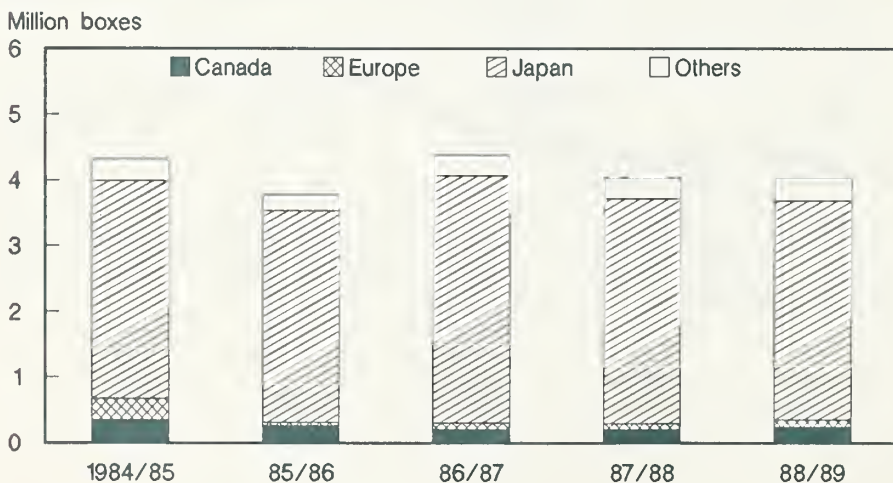


Figure 11

U.S. Fresh Lemon Exports



Noncitrus Fruit Production Set Record in 1989

Utilized production of noncitrus fruit rises, but total value is little changed from 1988.

Utilized production of the major non-citrus fruits reached a record 16.1 million short tons in 1989, surpassing the previous record set in 1987 by 1 percent. Larger crops of apples, apricots, sweet and tart cherries, olives, pears, and Cal-

ifornia prunes were largely responsible for offsetting lower production of peaches, pineapples, cranberries, grapes, strawberries, bananas, figs, pomegranates, and plums. The value of utilized production (excluding avoca-

dos, tart cherries, figs, pomegranates, and California prunes for which data are not yet available) stands at \$4.66 billion, compared with 1988's \$4.68 billion (excluding the same commodities).

Table 10--Utilized production and value of noncitrus fruit, by types, United States, 1987-89

Crop	Utilized production			Value of utilized production		
	1987	1988	1989	1987	1988	1989
	--1,000 short tons fresh equivalent--			--1,000 dollars--		
Apples	5,225.7	4,540.7	4,972.9	903,059	1,150,387	1,048,925
Apricots	106.3	93.5	113.0	36,882	33,927	38,349
Avocados	209.0	190.0	(2)	214,248	212,262	(2)
Bananas	5.7	6.5	5.5	3,386	4,257	4,070
Cherries, sweet	213.0	184.5	191.9	159,296	145,330	136,597
Cherries, tart	143.0	116.8	121.8	22,357	42,182	(2)
Cranberries	169.6	204.0	191.8	150,906	186,340	175,256
Dates	19.4	22.0	22.2	16,917	19,756	19,203
Figs	52.3	48.3	48.0	17,336	16,666	(2)
Grapes	5,253.5	6,032.1	5,895.1	1,358,728	1,603,295	1,711,710
Kiwifruit	26.6	29.5	34.5	18,886	22,420	26,565
Nectarines	191.0	200.0	200.0	65,545	78,861	79,290
Olives	67.5	87.5	123.0	41,053	50,710	65,175
Papayas	33.5	34.5	36.0	11,050	12,354	13,750
Peaches	1,119.5	1,224.3	1,105.2	308,970	382,127	360,377
Pears	936.1	860.4	908.7	185,377	235,423	263,697
Pineapples	692.0	659.0	580.0	99,286	107,402	95,448
Pomegranates	16.5	18.0	13.0	5,617	6,454	(2)
Plums, California	245.0	216.0	213.0	75,361	102,661	94,796
Prunes, California	682.4	469.6	718.1	168,315	110,985	(2)
Plums & prunes 1/	45.2	48.1	41.9	6,273	8,805	8,754
Strawberries	557.6	587.5	554.0	550,779	540,860	516,810
Total	16,010.4	15,872.8	16,089.6	4,419,627	5,073,464	4,658,772

1/ Idaho, Michigan, Oregon, and Washington.

2/ Data available July 10, 1990.

Sources: 1989 Noncitrus Fruits and Nuts Summary and 1989 Vegetables Preliminary, NASS, USDA.

1989 U.S. Apple Crop Just Below Record

A large crop and low prices may limit returns to U.S. apple growers.

Large Western States' Crop Dampens Prices

With U.S. apple production falling 7 percent short of 1987's record 10.7 billion pounds, but 10 percent larger than 1988, grower prices fell from last season in many areas of the country. U.S. apple growers are expected to receive an average 10.5 cents per pound in 1989/90, compared with 12.7 cents in 1988/89 and 8.6 cents in 1987/88. Prices are significantly lower in most of the Western States, with production of 6.08 billion pounds up 23 percent from last season. Washington alone accounted for 50 percent of U.S. apple production in 1989, up from 43 percent last season. Grower prices in that State averaged 9.6 cents per pound, down 26 percent from 1988/89. Most of Washington's apples are sold on the fresh market.

Reflecting the smaller apple crop in the Eastern States this season, prices improved for growers in many areas of this region, except for New York, Virginia, and Georgia. Although utilization data are not yet available for the 1989/90 season, it is likely that processors took a greater share of the region's production this season than last because of relatively depressed fresh market prices and stronger processing demand stemming from the region's smaller crop.

Moderately Reduced Supplies

Despite the significantly larger crop this season, apples in regular cold storage and controlled atmosphere storage facilities at the beginning of February totaled only 2.51 billion pounds, 3 percent less than a year ago. Apples in regular storage were only 86 percent of those on February 1, 1989, while stocks in controlled atmosphere storage were down 1 percent. The reduction in cold storage stocks is a good indication that

consumer demand for apples is recovering from last season's Alar scare. However, lower retail prices have probably helped increase movement. In January, the Bureau of Labor Statistics' Consumer Price Index for fresh apples stood at 130.3, down 6 percent from last season, with retail prices for Red Delicious averaging 60.1 cents per pound, 18 percent lower than a year ago.

Export Prospects Heightened

U.S. apple exports are likely to increase this season with lower prices and a resurgence in income-driven growth in East Asia and the Middle East after last season's setback during the Alar controversy. In January, USDA forecast total

U.S. apple exports (to offshore destinations excluding Canada) for fiscal 1990 at 280,000 metric tons, up 37 percent from last year. U.S. apple exports between July and December 1989 totaled 140,647 metric tons, up 16 percent from the same period a year ago. The increase in U.S. exports to Hong Kong and the United Kingdom is particularly impressive this season, up 63 and 5 percent, respectively, from last season, at 18,368 and 8,251 metric tons.

On the other hand, U.S. imports in 1989/90 are likely to decline with larger domestic production and lower prices. U.S. apple imports between July and December 1989 totaled 35,589 metric tons, down 1 percent from a year earlier.

Figure 12
U.S. Fresh Apples: Season Average Grower Price

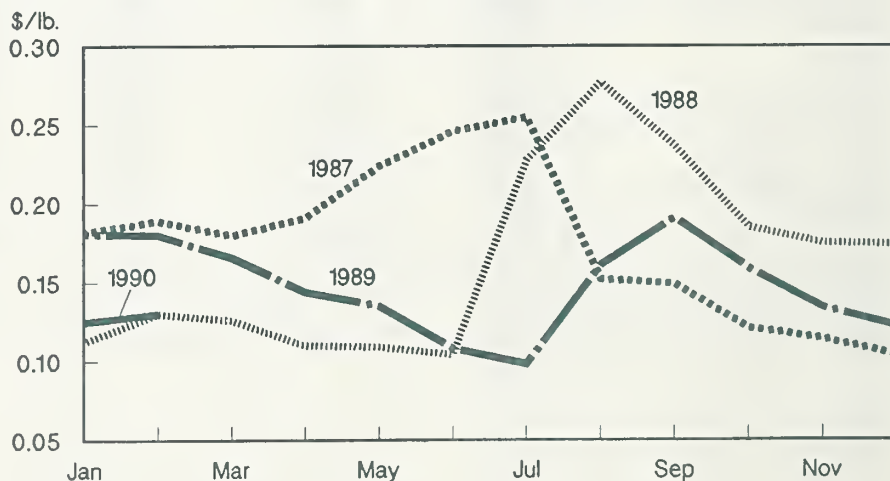


Table 11--Apples: Fresh cold storage holdings at end of the month, 1987-90

Months	1987	1988	1989	1990
--Million pounds--				
January	2,307.2	3,158.9	2,659.7	2,571.7
February	1,720.8	2,417.6	2,094.6	
March	1,174.5	1,584.1	1,545.9	
April	751.9	1,093.0	1,069.5	
May	386.3	552.2	619.3	
June	203.8	248.1	347.3	
July	74.9	95.0	174.9	
August	4.2	5.1	8.0	
September	2,687.1	1,857.7	2,252.0	
October	5,390.2	4,601.8	4,468.1	
November	4,697.2	3,904.3	3,845.8	
December	3,944.3	3,265.8	3,220.8	

Source: Cold Storage Reports (monthly), NASS, USDA.

Avocado Outlook Mixed Between Florida and California

The late December freeze only minimally damaged Florida's avocado crop. Production is expected to be near record.

Florida Shipments Highest Since 1982/83 Record

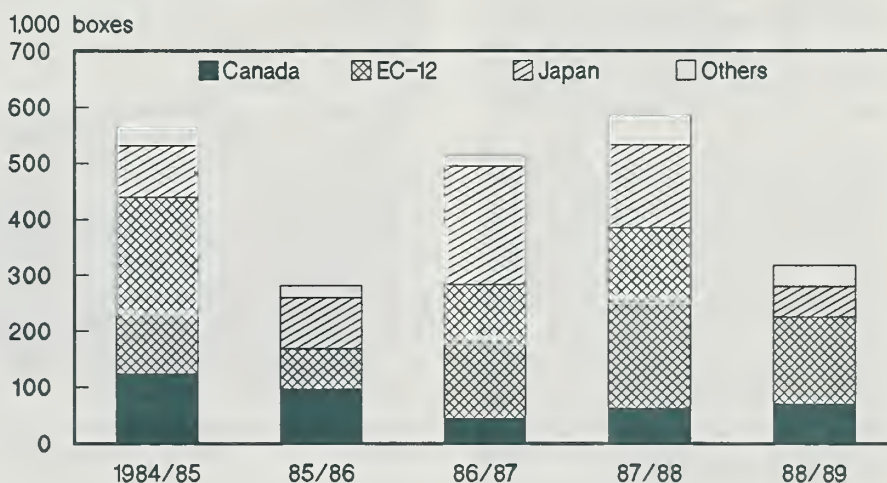
As Florida's 1989/90 avocado season (April/March) nears completion, certified shipments (includes shipments in regulated containers sold in interstate commerce) through January were the heaviest since Florida's 1982/83 record season. The crop sustained only minor damage from late-December's freezing temperatures, but the loss was enough to curb expectations for a record season. In February, Florida's certified shipments for 1989/90 were forecast at 1.3 million 50-pound bushels, 23 percent larger than last season but 2 percent smaller than 1982/83's record. Florida's certified shipments through January totaled 1.26 million bushels, up 22 percent from last year.

February Cold Front Hits California Crop

The cold front that rolled through California's avocado growing areas in late February caused only minimal damage to the 1989/90 crop (November/October). Growers were able to harvest and ship most of the freeze-damaged fruit by the end of February, although scattered reports of fruit drop-page continued into early March.

Official forecasts for California's 1989/90 avocado crop are not available, but industry analysts peg production at 6.0 million bushels, down 6 percent from 1988/89. Crop prospects for California's 1989/90 crop were lowered in April 1989 after unseasonably high temperatures resulted in some loss of bloom and lowered fruit set. February's cold front is expected to affect California's 1990/91 crop.

Figure 13
U.S. Fresh Avocado Exports



Exports Significantly Off

U.S. avocado exports, which were significantly curtailed by the smaller California crop last season, are likely to remain slow through 1989/90 due to shorter supplies. In January, USDA forecast the value of U.S. avocado exports to offshore destinations in fiscal 1990 at \$8.0 million, slightly down from the previous year and 53 percent lower than 1988. U.S. avocado exports dropped from 13,328 metric tons in 1987/88 (October/September) to 7,479 metric tons in 1988/89. Exports between October and December 1989 were off 47 percent from the same period last season, at 785 metric tons. Shipments to Japan, France, the Netherlands, and United Kingdom have been particularly affected by the short supply situation.

Table 12--U.S. avocado production by States, 1980-1989

Crop Year	Florida	California	Total
1980	30.8	238.0	268.8
1981	25.8	157.0	182.8
1982	34.7	202.0	236.7
1983	27.0	247.0	274.0
1984	29.5	200.0	229.5
1985	28.5	160.0	188.5
1986	24.7	278.0	302.7
1987	29.0	180.0	209.0
1988	27.0	163.0	190.0
1989	1/ 31.3	2/ 150.0	181.3

1/ Forecast as of January 1990.
2/ Industry estimate.

Source: 1989 Noncitrus Fruit and Nuts Summary, NASS, USDA.

Value Of Grape Production Up 7 Percent

U.S. grape production declined in 1989, but higher prices boosted total value.

Lower Yields Offset Increased Bearing Acres

U.S. grape production dropped 2.3 percent in 1989 as bearing acreage (net of 25,000 acres enrolled in the 1988 California Raisin Diversion Program) increased slightly and yields declined 5 percent from the previous year. No acreage was diverted under the California Raisin Diversion Program in 1989. Production in California, accounting for almost 91 percent of the U.S. grape crop in 1989, was down 3 percent from 1988. Production of wine and table type grapes in California was down 2.7 and 19 percent, respectively. The decline was partially offset by a 1.8-percent larger raisin type grape crop.

In New York, grape production was down over 3 percent due to poor berry set at bloom, and disease problems that hurt production of certain varieties. The Michigan grape crop, though less than 1 percent of the U.S. total, was adversely affected by late September frosts and declined 19 percent from the previous year.

Fresh Grape Prices Rise

The smaller table grape crop and good demand for the excellent quality crop brought an early end to the U.S. fresh grape market this season. Stocks of fresh grapes were essentially depleted by the end of 1989, while a year ago over 40 million pounds remained in cold storage on December 31, 1988, and 19 million remained one month later. The smaller crop, combined with strong demand, pushed grower prices for fresh grapes to \$597 per ton, 15 percent above 1988. With the early end to the 1989 season, wholesalers and retailers turned

Figure 14
U.S. Grape Utilization

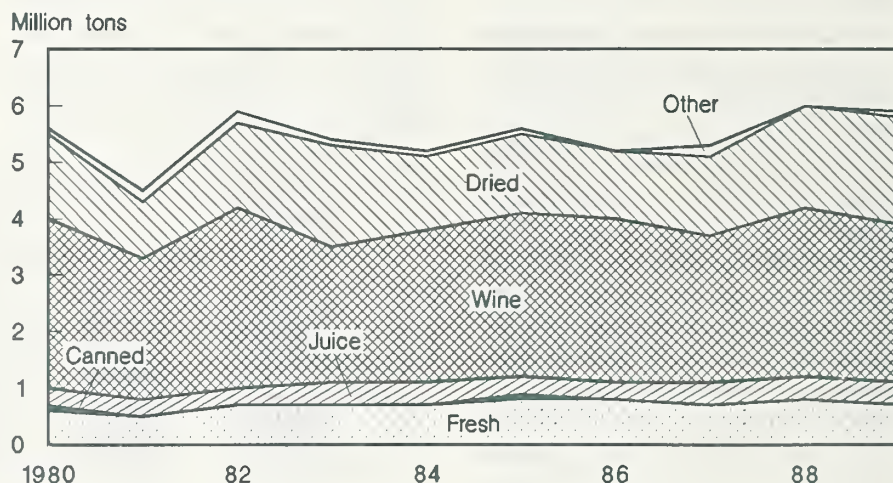


Table 13--Grapes: Supply and utilization of selected Southern Hemisphere countries, 1988-1990 1/

Country/ Marketing year 2/	Production	Imports	Total supply	Exports	Domestic consumption	Processed
--Metric tons--						
Argentina						
1988	120,000	0	120,000	5,130	108,370	6,500
1989	140,000	0	140,000	12,156	119,844	8,000
1990 3/	143,000	0	143,000	15,000	120,000	8,000
Chile						
1988	490,000	0	490,000	350,000	55,000	85,000
1989	540,000	0	540,000	351,000	84,000	105,000
1990 3/	615,000	0	615,000	450,000	60,000	105,000
South Africa						
1988	86,956	0	86,956	43,790	36,051	7,115
1989	101,798	0	101,798	53,950	40,698	7,150
1990 3/	108,115	0	108,115	58,865	42,000	7,250
Total						
1988	696,956	0	696,956	398,920	199,421	98,615
1989	781,798	0	781,798	417,106	244,542	120,150
1990 3/	866,115	0	866,115	523,865	222,000	120,250

1/ Selected countries represent the major produce/exporter countries in the Southern Hemisphere. 2/ Individual marketing years begin as follows: December of previous year, Chile; January of year shown, Argentina and South Africa. 3/ Preliminary.

Source: Horticultural Products Review, February 1990, FAS, USDA.

earlier than normal to Chile for fresh grapes. Subfreezing temperatures in California on February 14-16 adversely affected the Coachella grape crop and will likely reduce the early 1990 U.S. season supply of fresh grapes.

Smaller Wine Type Grape Crop

In California, the wine type grape crop was down 2.7 percent in 1989 from the year before. However, grapes utilized for wine were off more than 4 percent. Almost 12 percent fewer raisin type grapes and 32 percent fewer table type grapes were crushed for wine this year compared to last. Wine shipments from California to all markets in 1989 remained weak and were down 4 percent from 1988.

Grapes utilized for juice rose over 10 percent from 1988. However, grapes for juice were only about 12 percent of the total crush for juice and wine in 1988. Grower prices for grapes used for wine rose about 5 percent and for juice almost 19 percent, both following the

higher grower prices for grapes for all uses in 1989.

Grower Prices For Raisins Advance Despite Increased Production

Good drying conditions before and after heavy rains in September 1989 reduced the potential damage to the California raisin crop. According to the Raisin Administrative Committee, seasonal deliveries to handlers through March 3, 1990, were up 4 percent from a year earlier to 421,414 tons. Increased demand raised grower prices for raisins to \$920 per ton, up 2 percent from last season. This increase, combined with higher drying yields for grapes, raised grower prices for grapes used for raisins 18 percent to \$213 per ton.

U.S. Imports of Chilean Grapes Recover

Early season U.S. table grape imports from Chile were running about 14 percent ahead of last year, and above the pre-cyanide levels in 1988. Large sup-

plies of Chilean grapes have forced fresh grape prices down sharply from last year. For the week ending February 23, 1990, f.o.b. port of entry prices for 18-pound lugs of Chilean Thompson Seedless grapes were reported at \$6, compared to \$7 the previous year in Philadelphia, and \$12 compared to \$13.50 in Los Angeles. In early January, Thompson Seedless grapes from Chile were selling for \$22.50 in Philadelphia and \$31.25 in Los Angeles.

Production and exports continue to rise in three major table grape producing countries in the Southern Hemisphere: Argentina, Chile, and South Africa. Preliminary numbers for calendar 1990 show exports from Chile will rise 28 percent from the previous year. Production in Southern Hemisphere countries is now reaching a level that could cause downward pressure on prices received for fruit exported to major markets like the United States. The sharp decline in Chilean grape prices this winter may be evidence that supplies will soon outstrip demand in some major world markets.

Pear Production Rebounds

U.S. pear production rose 6 percent from 1988; growers received record high prices for fresh and processing pears.

Production Rebounds In 1989

U.S. pear production totaled 908,700 short tons in 1989, up 6 percent from last season's short crop, but still 3 percent below the 1987 record. The increase is primarily attributable to an 11-percent gain in Washington, but a larger California crop also helped offset moderately lower production in Oregon. While Michigan, Colorado, Pennsylvania, and Utah also harvested larger crops, the three Pacific Coast States accounted for 96 percent of the total U.S. pear crop in 1989, unchanged from last season. Most of the increase in total pear production was due to a larger croof pear varieties other than bartlett.

Table 14--Pears: Fresh cold storage holdings at end of month, 1987-90

Months	1987	1988	1989	1990
--1,000 pounds--				
January	198,869	198,379	234,583	200,046
February	127,126	148,471	162,935	
March	92,082	99,677	115,107	
April	53,651	49,167	57,721	
May	21,146	17,927	26,627	
June	1,722	2,705	6,425	
July	11,818	N.A.	10,982	
August	195,306	117,594	157,908	
September	507,052	434,015	446,156	
October	425,786	425,720	436,884	
November	338,764	368,325	368,812	
December	279,353	295,514	272,768	

N.A.= Not available.

Source: Cold Storage Reports (monthly), NASS, USDA.

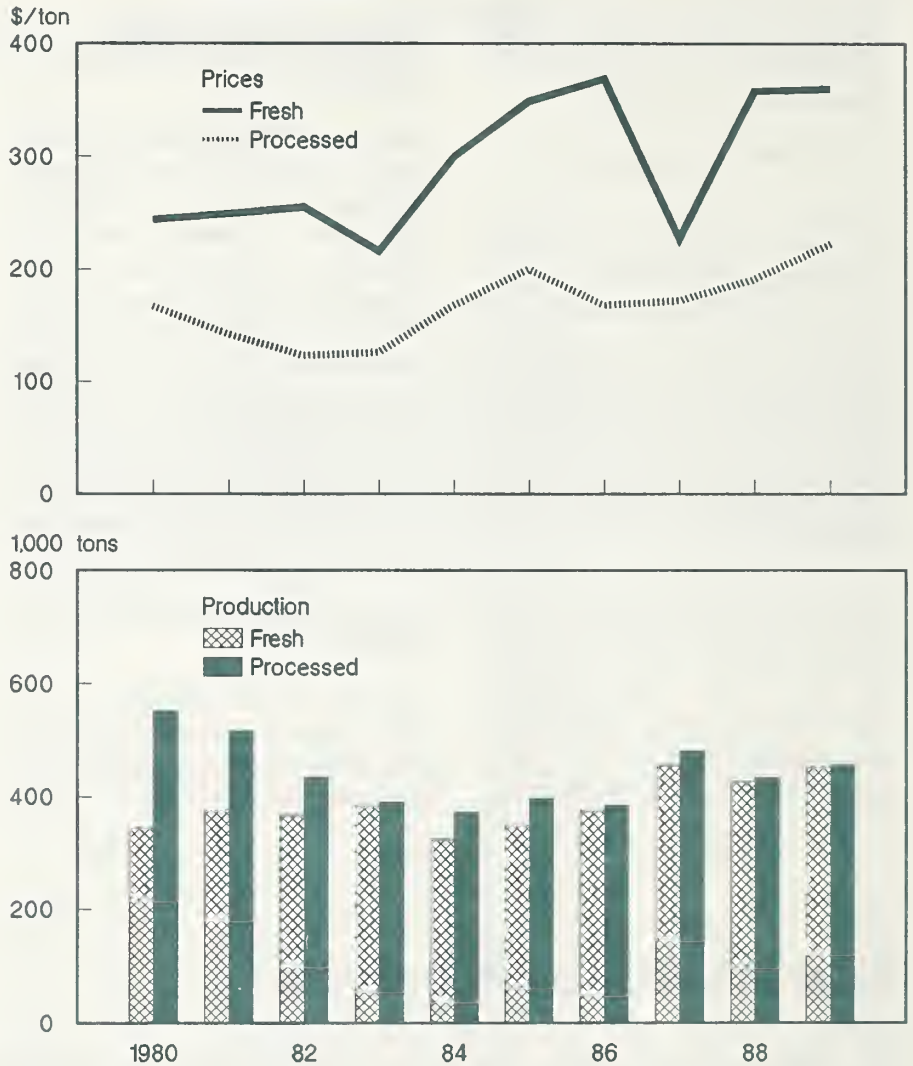
Non-bartlett production rose 9 percent from last season to 349,000 short tons. However, U.S. bartlett production also climbed 3 percent from last season to 522,000 short tons.

Grower Prices Reach Record Highs

Half of this season's pear crop was shipped to processing outlets, where grower prices averaged a record high \$222 per ton, up 16 percent from 1988/89. Grower prices for all fresh pears were a near record, averaging \$360 per ton, boosted by higher prices for fall and winter pear varieties that more than offset a 4-percent decline in bartlett prices. In February, the grower price for fresh pears averaged \$389 per ton, up 11 percent from January and 7 percent from last year.

Data on the 1989/90 canned pear pack and stocks in the Pacific Coast States will not be available from the industry this year. However, the latest data available show canned pear stocks as of October 1, 1989, at 3.84 million cases (basis 24/2-1/2), down 3 percent from October 1988. Fresh pear shipments are also heavy this season. As of mid-February, USDA reported 317,900 short tons of fresh pears had been shipped from growing areas this season, up 13 percent from the same time last year. In addition, January 1990 cold storage holdings of fresh pears totaled only 100,078 short tons, down 15 percent from January 1989. Higher grower prices in conjunction with heavier shipments will strengthen grower returns this season.

Figure 15
U.S. Pears: Utilized Production and Season Average Grower Price



Smaller Strawberry Supplies Boost Prices

U.S. strawberry supplies tight in 1989; 1990 winter crop prospects have been lowered by a February freeze.

Florida Freeze Delays Winter Shipments

Florida's winter strawberry shipments were set back several weeks after the late December freeze damaged berries that were maturing on plants at the time. Although most plants were saved, one industry source indicated that 70-75 percent of the existing berries were lost. The loss early in the season may not reduce Florida's total strawberry shipments because the plants are likely to produce a heavy second crop.

However, the freeze probably will affect grower returns this season as Florida growers lost much of the price advantage they would have received from early-season shipments. Moreover, the unseasonably warm temperatures in Florida since the freeze may affect quality. Prices may be somewhat dampened by heavier than normal February and March shipments, but Florida growers may benefit from tighter market conditions brought about by a cold front that moved through California in mid-February which also set back production in that State.

Early California Shipments Curtailed

With harvest about 4 weeks underway, the California strawberry crop was hit with freezing temperatures in mid-February that damaged berries existing on plants as well as blooms in some areas. As a result, a large amount of the southern California crop was stripped for processing uses, with only the best quality sent to the fresh market. With demand currently outstripping supplies, fresh market prices are strong. Normal shipments are not likely to resume until the end of March, and the volume pack of frozen strawberries that usually commences in late April/early May, may be delayed.

Tight Supplies and Higher Prices Encourage Imports

U.S. imports of fresh and frozen strawberries are likely to increase this year with currently tight domestic supplies. U.S. fresh strawberry imports, particularly from Costa Rica and Guatemala, are likely to be relatively heavy into the spring before domestic production widens. Similarly, with February 1 cold storage holdings of frozen strawberries down 33 percent from a year ago at 138.5 million pounds, imports of frozen strawberries, particularly from Mexico, have been brisk. U.S. imports of Mexican frozen strawberries between Janu-

Table 15--Strawberry imports, United States, 1982-89

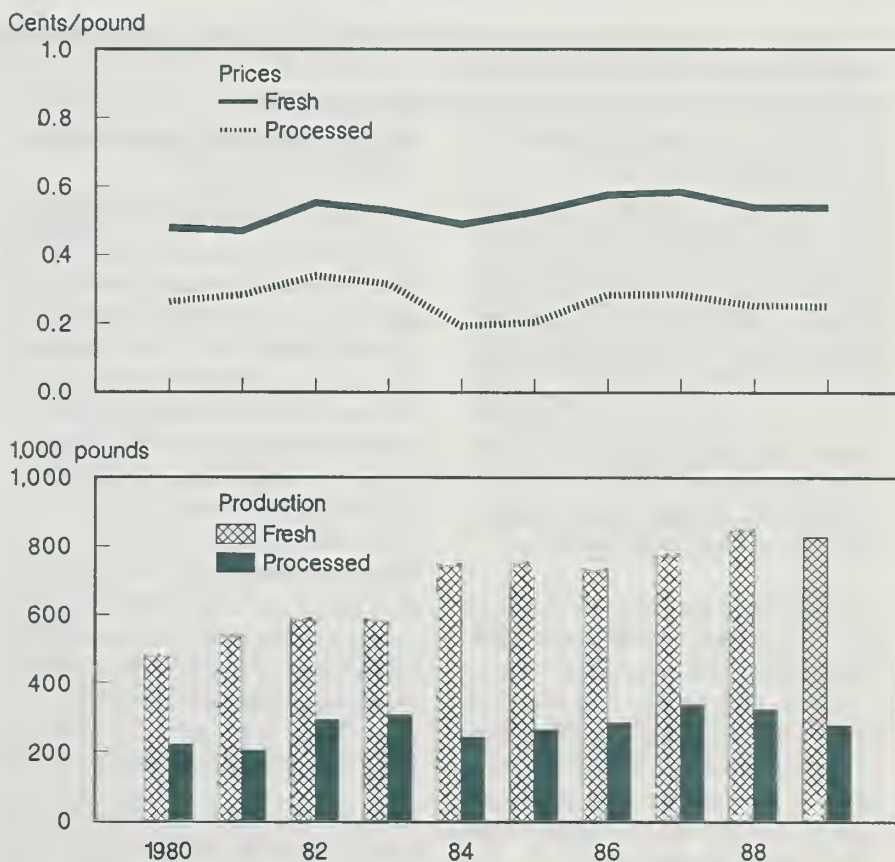
Calendar year	Fresh	Frozen
--Million pounds--		
1982	4.5	34.9
1983	5.1	42.5
1984	8.8	50.9
1985	9.6	59.7
1986	12.9	50.7
1987	33.2	79.2
1988	30.2	64.6
1989	34.7	42.5

Source: Bureau of Census, U.S. Department of Commerce.

ary and late February were up about 66 percent from a year earlier at about 8.8 million pounds.

Figure 16

U.S. Strawberries: Utilized Production and Season Average Grower Price



Smaller Tree Nut Crops, But Supplies Continue Large

U.S. production of six major tree nuts declined 17 percent in 1989, but 12 percent larger beginning stocks resulted in near-record supplies.

U.S. Tree Nut Production Lower

Weather-related yield reductions, combined with 1989 being a down year for some crops in an alternate year bearing cycle, reduced U.S. tree nut production to 749,000 short tons (in-shell equivalent weight), down 17 percent from 1988 and 22 percent below the record 957,000 tons in 1987. Production of macadamia nuts and walnuts was

higher, but decreases in almonds, hazelnuts (filberts), pecans, and pistachios more than offset the increases. With normal weather and with 1990 being an up year in the alternate year production pattern, U.S. tree nut production is expected to rebound next season.

Prices Mixed, Grower Receipts Lower

Last year's smaller crop and the moderating of prices caused by relatively large domestic and world tree nut supplies reduced the overall grower value of 1989 tree nut production 22 percent from 1988. The larger crop expected in 1990 will put downward pressure on grower prices next year, but larger output may increase grower receipts.

Tree Nut Crop Situation and Outlook

Production of most tree nuts is expected to rebound this year. Greater demand is needed to sustain grower prices.

Almond Production and Prices Could Improve

U.S. almond production in 1989 was 480 million pounds, down 19 percent from 1988 and 27 percent below 1987. However, large carryin stocks increased the total supply to 723 million pounds, up 12 percent from 1988/89. Record beginning stocks in other countries boosted the world supply above the previous record of 1987/88. World consumption and exports are expected to reach record highs in 1989/90.

U.S. bearing acreage of almonds declined 1.2 percent to 402,000 in 1989. Bearing acreage is expected to continue to fall in 1990 as tree removals will likely offset new bearing acres because of lighter plantings in recent years. Almond growers received \$1.00 per pound in 1989, down slightly from 1988, but the same as 1987.

Record World Supplies Hinder Hazelnut Prospects

U.S. hazelnut production in 1989 was 13,000 tons, the lowest since 1983 due to poorer yields resulting from weather problems. Better yields are expected to increase production in 1990. Hazelnut growers received \$848 per ton last season, the same as 1988, but below 1987's \$959. Prices are not likely to improve much in 1990/91 as world supplies likely will be relatively large.

World hazelnut production and supply in 1989/90 was a record high. Although foreign production is likely to decline in 1990, large beginning stocks will keep world supplies large in 1990/91.

U.S. Pistachio Crop To Rebound

The U.S. pistachio crop of 39 million pounds last year was good for an off-year in the alternating bearing cycle. However, foreign production was

larger, which dampened U.S. export prospects. The U.S. crop in 1990 likely will be much larger than 1989, but foreign supplies should decrease. U.S. bearing acreage is still increasing but new plantings have slowed substantially in recent years.

The average grower price for U.S. pistachios was \$1.65 per pound in 1989, compared with \$1.17 in 1988 and \$1.43 in 1987. Grower prices will likely fall in 1990 due to much larger supplies. However, cash receipts may increase with higher production.

Larger Pecan Production and Lower Prices Expected

U.S. growers harvested 218 million pounds of pecans (in-shell basis) in 1989, 34 percent less than 1988 and 23 percent below 1987. Lower supplies despite relatively heavy imports from Mexico, boosted the average grower

price to 68.8 cents per pound, compared with 54.1 in 1988 and 53.1 in 1987. Value of pecan production may be higher next season because supplies of competing nuts, including almonds, hazelnuts, and walnuts, are expected to moderate. Indications are that production of improved pecans will continue to build up due to the large inventory of trees that have not reached maximum productivity.

Smaller Walnut Crop Likely

U.S. walnut production last year was 215,000 tons, (in-shell basis) pushing the total U.S. supply to a record high. This preliminary production estimate may be revised up by the end of this

season. The 1989 yield was good, but fell short of 1987's record 1.4 tons per acre.

Domestic consumption is expected to increase, leaving ending stocks for 1989/90 at a relatively low level. Lower foreign supplies could result in record U.S. exports this year. Grower prices may be higher this season than last due to strong demand and lower pecan supplies. Prices will be firm in 1990 if competing supplies are not burdensome and walnut production and yield are moderately lower.

U.S. bearing acres of walnuts have stabilized at about 175,000, but new plantings have been relatively low in recent

years. This will cause bearing acreage to decline in the near future as removals likely will exceed trees reaching bearing age.

Macadamia Prices Steady

Acreage, production, and value of Hawaiian macadamias continue to increase, setting a new record in 1989. This strong upward trend is expected to continue in 1990. Grower prices in 1989 averaged 89 cents per pound, nearly the same as in 1988. In the long term, the U.S. macadamia industry will face more competition as foreign supplies increase, primarily in Malawi, Australia, and Central American countries.

World Nut Supply and Consumption Record High

Record world production and stocks are putting downward pressure on grower prices.

World tree nut supplies have been exceptionally large for the past two or three seasons, creating downward pressure on grower prices. World consumption continues to grow briskly, but supplies are growing faster. World acreages of some tree nut crops have declined for the past several seasons, but now have either stabilized or show signs of increasing again. In the United States and some Mediterranean regions, many older and less productive orchards have been removed, leaving a smaller but stronger set of bearing trees that are more responsive to good weather and improved management practices. The new 10-year Economic Community Tree Nut Program announced September 1, 1989, to assist European producers will likely stall fur-

ther declines in acreages in that region and increase competition for U.S. crops.

World Supplies To Continue Upward

Similar to the United States, world supplies are expected to remain large. In foreign countries, either production or stocks will be high. Record supplies of Spanish almonds and Turkish hazelnuts existed in 1989. In 1989 Turkey produced a bumper crop of hazelnuts and a large crop of walnuts and pistachios. Lower production in most other countries caused only modest declines in total supplies.

Larger quantities of U.S. tree nuts will need to be sold in world markets in 1990/91 to avoid major declines in grower prices. U.S. tree nut industries

will face stiff international competition in 1990 if global production and stocks climb. Grower prices likely will soften under this scenario. However, foreign production of tree nuts this year should decrease somewhat, easing current record supplies. The long run outlook is that grower prices will not improve significantly without increased demand stemming from:

- improved exchange rates;
- elimination of trade-distorting practices and barriers;
- expanded demand for U.S. tree nuts in new products and/or in foreign markets;
- growth in real incomes in the United States and other key markets.

Table 16--World tree nuts: Production, supply and distribution, 1987/88-1989/90 1/

Country	Marketing year 2/	Beginning stocks	Production	Imports	Total supply	Exports	Domestic consumption	Ending stocks
--Metric tons, in-shell basis--								
China (Mainland)	1987/88	0	147,000	0	147,000	38,400	108,600	0
	1988/89	0	177,100	0	177,100	47,300	129,800	0
	1989/90	0	151,000	0	151,000	40,000	111,000	0
France	1987/88	0	26,500	6,700	33,200	11,500	21,700	0
	1988/89	0	21,500	11,400	32,900	10,900	22,000	0
	1989/90	0	26,200	8,000	34,200	11,500	22,700	0
Greece	1987/88	1,205	32,335	8,425	41,965	1,700	29,773	10,492
	1988/89	10,492	66,270	543	77,305	19,329	49,720	8,256
	1989/90	8,256	57,779	3,340	69,375	13,420	49,254	6,701
India	1987/88	3,480	20,000	0	23,480	11,000	11,000	1,480
	1988/89	1,480	17,000	0	18,480	9,000	9,000	480
	1989/90	480	17,000	0	17,480	8,000	9,200	280
Italy	1987/88	24,155	153,960	75,193	253,308	68,925	137,801	46,582
	1988/89	44,580	197,920	67,274	309,774	104,806	150,666	54,302
	1989/90	54,302	201,240	63,970	319,512	114,980	160,630	43,902
Morocco	1987/88	1,998	20,912	0	22,910	4,202	16,710	1,998
	1988/89	1,998	24,699	0	26,697	3,830	20,869	1,998
	1989/90	1,998	28,305	0	30,303	6,660	21,645	1,998
Portugal	1987/88	649	8,991	2,204	11,844	1,778	6,753	3,313
	1988/89	3,313	4,662	3,064	11,039	1,399	6,993	2,647
	1989/90	2,647	8,325	1,665	12,637	3,330	7,160	2,148
Spain	1987/88	50,436	248,450	18,572	317,458	68,838	110,100	138,520
	1988/89	138,520	151,200	16,717	306,437	59,970	110,900	135,567
	1989/90	135,567	322,700	3,530	461,797	127,550	110,900	223,347
Syria	1987/88	760	12,500	1,000	14,260	0	14,000	260
	1988/89	260	17,900	500	18,660	500	15,000	3,160
	1989/90	3,160	18,000	500	21,660	1,000	16,000	4,660
Turkey	1987/88	86,320	403,300	0	489,620	211,330	209,630	68,660
	1988/89	68,660	542,290	0	610,950	241,330	247,960	121,660
	1989/90	121,660	601,950	0	723,610	292,330	304,290	126,990
United States	1987/88	106,634	758,808	7,738	873,180	344,230	279,646	249,304
	1988/89	249,304	694,134	12,748	956,186	365,909	311,897	278,381
	1989/90	278,381	588,131	17,436	883,948	314,650	332,593	236,705
Totals	1987/88	275,638	1,832,756	119,832	2,228,226	761,903	945,714	520,609
	1988/89	518,607	1,914,675	112,245	2,545,527	864,272	1,074,805	606,451
	1989/90	606,451	2,020,630	98,441	2,725,521	933,420	1,145,371	646,730

1/ Includes almonds, hazelnuts, pistachios (except Iran), and walnuts.
2/ Marketing year varies by crop.

Source: Horticultural Products Review, FAS, USDA.

Growth in U.S. Horticultural Product Exports Expected To Slow

An anticipated drop in tree nut and citrus fruit exports to offshore markets (excluding Canada) could more than offset expected growth in fresh noncitrus fruit exports.

The value of U.S. horticultural product exports to offshore markets (excluding Canada) rose in fiscal 1989. However, the rate of growth declined from the previous 2 years' double-digit rate. Export growth of U.S. horticultural products may decline further in fiscal 1990 with reduced U.S. citrus and almond supplies. In addition, the modest recovery in the value of the dollar in recent months has not yet had a major effect on export growth, but could in the current fiscal year.

Steady growth in the global economy, led by Asia's Newly Industrialized Countries, including South Korea, Singapore, and Taiwan, is predicted over the coming years. This will enhance the potential for expanding U.S. export markets, particularly to the degree that current trade barriers are removed and are not replaced with other measures that unfairly restrict market access.

Commodity Outlook

The value of U.S. fresh and processed fruit, tree nut, and wine exports is forecast at \$2.9 billion in fiscal 1990, down 1 percent from fiscal 1989.

Citrus Fruit

Offshore sales of fresh citrus are forecast at \$370 million, down 23 percent from last year. The reduction in supplies of export-grade citrus fruit resulting from the December 1989 freeze in Florida and Texas will severely affect U.S. exports of fresh grapefruit and tangerines. U.S. fresh orange exports are forecast to increase 10 percent due to this season's large California navel orange crop, a good portion of which is picking out at sizes larger than last season. The larger sizes are preferred in the

important Asian markets of Japan, Hong Kong, and Singapore.

Adequate supplies of export-grade lemons this season will help boost U.S. fresh lemon exports this year. About 90 percent of all U.S. lemon exports are shipped to Japan. U.S. orange juice exports will decline in fiscal 1990 because of expected smaller production in Florida, but the impact on total export value will be softened due to strengthening juice prices.

Noncitrus Fruit

Robust growth is expected in U.S. exports of fresh noncitrus fruits in fiscal 1990, driven by strengthening demand for apples, pears, kiwifruit, and papayas. U.S. exports of canned and prepared fruit are expected to decline due to a smaller U.S. canned peach pack, increasing domestic demand for canned and prepared fruit, and a less favorable exchange rate between the U.S. dollar and Japanese yen. However, the decline will be partially offset by a mod-

Table 17--U.S. value of exports for fruit, tree nuts, and wine to offshore destinations, fiscal years (Oct-Sept), 1985-89 and forecast 1990

Commodity group	1985	1986	1987	1988	1989	1990
--Million dollars--						
Fresh fruit	523	593	713	798	841	817
Processed fruit	335	351	427	536	588	604
Tree nuts	480	465	560	748	663	640
Wine	20	25	43	71	75	85
Total	1,358	1,434	1,743	2,153	2,167	2,146

1/ "Offshore destinations" refers to all countries except Canada.

Source: Horticultural Products Review, FHORT 1-90, January 1990, FAS, USDA.

Table 18--U.S. exports of selected fresh fruits, tree nuts, and wine to offshore destinations, fiscal years 1988-89 and forecast 1990 1/

Commodity	Quantity			Value		
	1988	1989	1990	1988	1989	1990
--1,000 metric tons--						
--Million dollars--						
Oranges	239	275	300	138	160	175
Grapefruit	425	454	180	208	220	95
Lemons	133	131	135	94	92	95
Apples	249	204	280	108	102	137
Raisins	91	91	93	137	137	158
Dried prunes	56	54	57	90	88	97
Almonds, shelled/prep.	179	150	125	573	474	410
Walnuts, inshell	47	46	50	86	72	80
Wine (mil. liters)	49	59	65	71	75	85

1/ "Offshore destinations" refers to all countries except Canada. Fiscal years October-September.

Source: Horticultural Products Review, FHORT 1-90, January 1990, FAS, USDA.

est increase in canned fruit mixtures and pear exports. U.S. raisin and dried prune exports are forecast to slightly increase with larger U.S. supplies of both dried fruits and production shortfalls in several major producing countries.

Tree Nuts

The export outlook for tree nuts is mixed. A relatively smaller U.S. almond crop this season and higher prices, coupled with a bumper crop in

Spain, will dampen prospects for U.S. almond exports. U.S. walnut exports may reach \$80 million in 1989/90, compared with \$72 million last season, due to a good quality U.S. crop and favorable market conditions in West Germany, Italy, and Spain.

Wine

U.S. wine exports are forecast to increase 10 percent from fiscal 1989's 59 million liters, aided by aggressive marketing efforts under the Targeted

Export Assistance Program and import tariff reductions in some countries. Major markets are expected to be Japan and the United Kingdom, although exports are also expected to grow in Scandinavian and other North European markets.

For additional information see USDA's Foreign Agricultural Service "Horticultural Products Review" circular FHORT 1-90, January 1990. For a copy, call (202) 382-9445.

List of Tables

	Page
1. Economic indicators of the U.S. fruit and tree nut sectors.	5
2. Index of prices received by growers for fresh and processing fruit, 1986-90.	6
3. Consumer Price Index for fresh fruit, 1986-90.	6
4. Citrus fruit: Production, 1987/88, 1988/89, and indicated 1989/90.	7
5. Oranges used for frozen concentrated, Florida, 1984/85-1989/90.	10
6. Florida orange-juice production, 1978/79-1989/90.	10
7. Brazilian FCOJ production and utilization, 1979/80-1989/90.	11
8. U.S. fresh grapefruit shipments, 1984/85 through 1988/89 and estimates for 1989/90.	14
9. Grapefruit used for frozen concentrate, Florida, 1984/85-1989/90.	15
10. Utilized production and value of noncitrus fruit, by types, United States, 1987-89.	17
11. Apples: Fresh cold storage holdings at end of the month, 1987-90.	18
12. U.S. avocado production by States, 1980-1989.	19
13. Grapes: Supply and utilization of selected South Hemisphere countries, 1988-1990.	20
14. Pears: Fresh cold storage holdings at end of month, 1987-90.	21
15. Strawberry imports, United States, 1982-89.	23
16. World tree nuts: Production, supply and distribution, 1987/88-1989/90.	26
17. U.S. value of exports for fruit, tree nuts, and wine to offshore destinations, fiscal years, (Oct-Sept), 1985-89 and forecast 1990.	27
18. U.S. exports of selected fresh fruits, tree nuts, and wine to offshore destinations, fiscal year, 1988-89 and forecast 1990.	27
19. Summary of crop values, United States, 1988, 1989, and percent change.	30
20. Leading fruit and nut-producing States, crop value, 1989.	30
21. Leading fruit and nut commodities, crop value, 1989.	30
22. Fresh fruit: Consumer price indexes, United States, by month, 1986-90.	30
23. Fresh fruit: Retail prices, marketing spreads, and grower-packer return per pound, sold in the Northeast and North Central regions, indicated month, 1988 and 1989	31
24. Fruits and tree nuts, bearing acreage, United States, 1980-89.	31
25. Fruit and edible tree nuts: Utilized production, 1988 and 1989.	32
26. Fruit and edible tree nuts: Season-average prices per unit received by growers, 1988 and 1989.	33
27. Selected fresh citrus f.o.b., packed fresh, by month, 1986-90.	34
28. Selected citrus all price, on-tree returns, by months, 1986-90.	35
29. Frozen concentrated citrus juices: Stocks, pack, imports, supply, and movement, Florida, 1985/86-1989/90.	36
30. Production and utilization of specified noncitrus fruits, United States, 1987-89.	36
31. Fruit for processing: Season-average price per ton received by growers for selected noncitrus fruit, by type of use, principal States, 1987-89.	38
32. Canned noncitrus fruit: Canner's stocks, supplies, and shipments, California, 1986/87-1989/90.	38
33. Stocks of frozen fruit: End of January, 1987-90.	39
34. Apples, commercial crop: Total production and season-average prices received by growers, 1987, 1988, and indicated 1989	39
35. Grapes: Total production and season-average grower prices, by States 1987-89	40
36. Pears: Utilized production, by States, and Pacific Coast, variety composition, 1987-89	40
37. Pistachios: Production, supply, and distribution, 1987/88-1989/90.	41
38. Walnuts: Production, supply, and distribution, 1987/88-1989/90.	41
39. Fresh fruit: Representative truck rates for selected fruits, 1989.	42
40. Monthly average fruit prices received by growers, United States, 1989-90.	42

Table 19--Summary of crop values, United States, 1988, 1989, and percent change

Commodity	1988	1989	Percent change
--1,000 dollars--			
CITRUS:			
Oranges	1,773,681	1,806,331	2
Grapefruit	478,588	424,236	-11
Lemons	202,046	223,504	11
Limes, Florida	23,314	21,474	-8
Tangelos, Florida	32,605	30,913	-5
Tangerines	80,400	83,378	4
Temples, Florida	27,940	25,219	-10
NONCITRUS:			
Apples	1,150,387	1,048,925	-9
Apricots	33,927	38,349	13
Avocados	212,262	2/	--
Bananas, Hawaii	4,257	4,070	-4
Cherries, sweet	145,330	136,597	-6
Cherries, tart	42,182	2/	--
Cranberries 1/	186,340	175,256	-6
Dates, California	19,756	19,203	-3
Figs, California	16,666	2/	--
Grapes	1,603,295	1,711,710	7
Kiwifruit, California	22,420	26,565	18
Nectarines, California	78,861	79,290	1
Olives, California	50,710	65,175	29
Papayas, Hawaii	12,354	13,750	11
Peaches	382,127	360,377	-6
Pears	235,423	263,697	12
Pineapples, Hawaii	107,402	95,448	-11
Pomegranates	6,454	2/	--
Plums, California	102,661	94,796	-8
Prunes, dried, California	110,985	2/	--
Prunes and plums, ex. Calif.	8,805	8,754	-1
Strawberries	540,860	516,810	-4
TREE NUTS:			
Almonds, California	600,075	460,800	-23
Hazelnuts	14,082	11,018	-22
Macadamia, Hawaii	40,950	45,390	11
Pecans	166,518	149,725	-10
Pistachios, California	109,980	64,350	-41
Walnuts, California	193,743	2/	--
Total	8,817,386	8,005,110	3/ -3

-- = Not available.

1/ Used 1988 price to compute value of production.

2/ Available July 10, 1990.

3/ Excludes the following: avocados, tart cherries, figs, pomegranates, prunes, and walnuts.

Source: 1990 Crop Value Summary, NASS, USDA.

Table 20--Leading fruit and nut-producing States, crop value, 1989

State	Crop value	Proportion of U.S.
Million dollars		
Percent		
California	4,181	55.0
Florida	1,371	18.0
Washington	565	7.4
Oregon	157	2.1
Idaho	150	2.0
Michigan	149	2.0
New York	140	1.8
Total	6,713	88.3

Source: 1990 Crop Value Summary, NASS, USDA.

Table 21--Leading fruit and nut commodities, crop value, 1989

Commodity	Crop value	Proportion of U.S.
Million dollars		
Percent		
Oranges	1,806	23.7
Grapes	1,712	22.5
Apples	1,049	13.8
Strawberries	517	6.8
Almonds	461	6.1
Grapefruit	424	5.6
Total	5,969	78.5

Source: 1990 Crop Value Summary, NASS, USDA.

Table 22--Fresh fruit: Consumer price indexes, United States, by month, 1986-90

Item and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
--1982-1984=100--												
Apples:												
1986	115.7	120.5	120.9	122.8	129.9	139.9	146.0	168.0	151.9	119.3	115.5	116.9
1987	123.7	125.8	135.6	136.1	139.0	151.1	158.6	151.3	129.5	113.6	103.5	103.6
1988	109.3	116.4	119.4	121.7	121.9	127.9	144.7	178.6	167.7	139.2	131.2	132.4
1989	138.8	144.2	145.5	143.4	142.8	145.5	145.3	153.4	144.6	132.1	125.4	124.7
1990	130.3											
Bananas:												
1986	92.3	103.1	110.4	125.8	125.9	101.6	101.0	100.1	104.6	102.3	101.3	91.8
1987	100.8	107.2	107.0	108.2	101.6	111.7	100.0	104.8	103.8	100.2	97.4	107.4
1988	107.2	119.6	118.9	121.4	119.6	144.7	122.7	112.0	110.4	118.6	119.9	115.9
1989	112.7	119.5	131.4	143.4	155.1	139.5	133.7	126.6	126.4	127.5	127.2	122.6
1990	126.4											
Oranges:												
1986	103.8	100.3	98.5	101.2	105.5	110.0	114.5	115.2	112.3	115.7	115.4	110.4
1987	114.1	111.2	114.1	112.6	120.0	141.4	152.8	156.8	160.3	166.8	154.8	126.3
1988	122.3	121.3	124.4	126.5	143.7	149.5	155.7	157.5	164.5	169.8	155.5	144.4
1989	131.1	126.1	128.6	130.3	136.2	154.3	165.2	168.9	165.6	167.5	151.5	138.5
1990	148.9											

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

Table 23--Fresh fruit: Retail price, marketing spreads, and grower-packer return per pound, sold in the Northeast and North Central regions, indicated month, 1988 and 1989

Commodity, production area and month	Marketing spreads		Grower-packer return 1/ (f.o.b. shipping point price)		
	Retail price	Absolute	Percent of retail price	Absolute	Percent of retail price
	--Cents--		Percent	Cents	Percent
NORTHEAST					
Apples, Washington Red Delicious:					
December 1988	81.6	51.4	63	30.2	37
December 1989	69.5	47.7	69	21.8	31
November 1989	73.4	51.9	71	21.5	29
Grapefruit, Florida white seedless:					
December 1988	43.5	30.5	70	13.0	30
December 1989	43.6	29.7	68	13.9	32
November 1989	51.4	37.1	72	14.3	28
Lemons, California:					
December 1988	85.0	55.8	66	29.2	34
December 1989	102.5	68.3	67	34.2	33
November 1989	105.3	69.0	65	36.3	35
Oranges, California valencia:					
October 1988	65.5	42.3	65	23.2	35
October 1989	61.5	40.6	66	20.9	34
September 1989	56.5	34.9	62	21.6	38
NORTH CENTRAL					
Apples, Washington Red Delicious:					
December 1988	75.3	45.1	60	30.2	40
December 1989	57.4	35.6	62	21.8	38
November 1989	59.1	37.6	64	21.5	36
Grapefruit, Florida white seedless:					
December 1988	51.8	38.8	75	13.0	25
December 1989	49.3	35.4	72	13.9	28
November 1989	53.6	39.3	73	14.3	27
Lemons, California:					
December 1988	107.4	78.2	73	29.2	27
December 1989	100.4	66.2	66	34.2	34
November 1989	101.7	65.4	64	36.3	36
Oranges, California valencia:					
October 1988	66.9	43.7	65	23.2	35
October 1989	59.9	39.0	65	20.9	35
September 1989	62.7	41.1	65	21.6	35

1/ Adjusted to account for loss incurred during marketing due to waste and spoilage.

Sources: Bureau of Labor Statistics, Department of Labor, and Economic Research Service, USDA.

Table 24--Fruits and tree nuts, bearing acreage, United States, 1980-89

Year	Citrus fruit 1/	Major deciduous fruits 2/	Minor fruits 3/	Tree nuts 4/	Total fruits and tree nuts 5/
--1,000 acres--					
1980	1,143.1	1,607.5	242.4	563.1	3,556.1
1981	1,129.9	1,599.3	249.0	559.3	3,537.5
1982	1,124.3	1,621.6	199.4	577.6	3,522.9
1983	1,091.6	1,693.8	204.5	598.5	3,588.4
1984	1,007.9	1,711.0	208.9	622.9	3,550.7
1985	899.2	1,735.4	211.1	656.9	3,502.6
1986	819.0	1,742.6	214.5	668.9	3,445.0
1987	826.2	1,738.9	217.1	675.4	3,457.6
1988	834.6	1,737.1	215.3	668.2	3,455.2
1989 6/	843.4	1,749.6	127.0	668.4	3,388.4

1/ Grapefruit, lemons, limes, oranges, tangelos, tangerines (including honey tangerines), and Temples. Acreage is for the year of harvest. 2/ Commercial apples, apricots, cherries, grapes, nectarines, peaches, pears, plums, and prunes. 3/ Avocados, bananas, cranberries, dates, figs, kiwifruit, olives, papayas, pineapples, and pomegranates. 4/ Almonds, hazelnuts, macadamia nuts, pistachios, and walnuts. 5/ Some totals may not add due to rounding. 6/ Preliminary.

Source: 1989 Noncitrus Fruits and Nuts Summary, NASS, USDA.

Table 25--Fruit and edible tree nuts: Utilized production, 1988 and 1989

Commodity	Unit	1988		1989 1/	
		Fresh	Processed	Fresh	Processed
Noncitrus:					
Apples, commercial	Mil. lbs.	5,240	3,841	9,081	5/ 9,946
Apricots, 3 States	Tons	18,200	75,300	93,500	5/ 112,950
Avocados 2/	Tons	190,000	8/	190,000	5/ 5/
Avocados, California 2/	Tons	163,000	8/	163,000	5/ 5/
Bananas, Hawaii	1,000 lbs.	12,900	---	12,900	11,000
Cherries, sweet	Tons	87,230	97,280	184,510	191,930
Cherries, tart	Mil. lbs.	5	229	234	244
Cranberries	Bbls.	274,200	3,738,800	9/4, 080,000	6/ 3,836,000
Dates, California	Tons	22,000	8/	22,000	6/ 22,200
Figs, California	Tons	1,500	46,800	48,300	47,100
Grapes	Tons	831,320	5,200,780	6,032,100	5,150,820
Grapes, California	Tons	801,000	4,719,000	5,520,000	4,638,000
Kiwifruit, California	Tons	29,500	8/	29,500	34,500
Nectarines, California	Tons	199,000	1,000	200,000	2,000
Olives, California	Tons	57,000	87,000	87,500	122,500
Papayas, Hawaii	1,000 lbs.	12,000	12,000	69,000	11,000
Peaches	Mil. lbs.	1,223	1,225	2,448	1,173
Pears	Tons	427,140	7/433,260	860,600	7/456,030
Pineapples, Hawaii	Tons	133,000	8/	216,000	444,000
Plums, California	Tons	18,000	8/	18,000	8/ 13,000
Pomegranates, California	Tons	---	151,000	151,000	215,000
Prunes, California	Tons	24,000	24,100	48,100	19,100
Prunes and plums, other States	Tons	851	324	1,175	279
Strawberries	1,000 lbs.	---	---	---	---
Citrus: 3/					
Oranges	Box	53,521	146,729	200,250	156,523
Tangerines	Box	3,638	1,502	5,140	1,957
Grapefruit	Box	33,195	35,505	68,700	35,306
Lemons	Box	12,065	8,585	20,650	7,720
Limes	Box	860	440	1,300	1,250
Tangelos	Box	1,395	2,805	4,200	2,452
Templets	Box	1,292	2,258	3,550	2,882
Tree Nuts: 4/					
Almonds, California	1,000 lbs.	---	---	590,000	480,000
Hazelnuts, 2 States	Tons	---	---	16,500	13,000
Macadamia nuts, Hawaii	1,000 lbs.	---	---	45,500	51,000
Pistachios	1,000 lbs.	---	---	94,000	39,000
Pecans, all	1,000 lbs.	---	---	308,000	217,600
Improved	1,000 lbs.	---	---	185,300	144,900
Native and seedling	1,000 lbs.	---	---	122,700	57,300
Walnuts, 2 States	Tons	---	---	209,000	215,000

--- = Not available.

1/ Preliminary. 2/ 1988 indicated 1988/89. 3/ 1988 indicated 1987/88. 4/ Shelled basis. 5/ Data available July 10, 1990.
 6/ Data available August 21, 1990. 7/ Processed mostly canned, but includes small quantities of dried and other uses. 8/ Missing data are not published to avoid disclosure of individual operations. 9/ Includes shrinkage.

Sources: 1989 Noncitrus Fruits and Nuts Summary, and 1989 Citrus Summary, and 1989 Vegetables Preliminary, NASS, USDA.

Table 26--Fruit and edible tree nuts: Season-average prices per unit received by growers, 1988 and 1989

Commodity	Unit	1988		1989 1/	
		Fresh	Processed	Fresh	Processed
--Dollars--					
Noncitrus: 2/					
Apples, commercial	Pounds	0.174	6/123	0.127	7/
Apricots, 3 States	Tons	667	282	363	284
Avocados, 3/	Tons	1,120	---	1,120	---
Avocados, California 3/	Tons	1,230	---	1,230	---
Bananas, Hawaii	Pounds	0.330	---	0.330	---
Cherries, sweet	Tons	1,100	509	788	454
Cherries, tart	Pounds	0.439	0.175	0.181	7/
Cranberries	Bbls.	---	---	45,770	8/
Dates, California	Tons	898	---	898	---
Figs, California	Tons	---	---	345	7/
Grapes, California	Tons	517	226	266	246
Kiwifruit, California	Tons	493	224	263	242
Nectarines, California	Tons	760	---	760	---
Olives, California	Tons	---	---	394	---
Papayas, Hawaii	Tons	500	580	580	530
peaches	Pounds	0.210	0.032	0.179	0.030
Pears	Pounds	0.213	6/198	0.156	6/203
Pineapples, Hawaii	Tons	358	9/191	274	9/222
Plums, California	Tons	416	99	163	90
Pomegranates, California	Tons	10/	10/	475	10/
Prunes, California	Tons	10/	10/	359	445
Prunes and plums, other States,	Tons	---	735	735	7/
Strawberries	Tons	249	117	183	209
	Pounds	0.539	0.252	0.460	0.251
Citrus: 4/					
Oranges	Box	8.41	6.78	7.18	6.49
Tangerines	Box	17.93	2.36	13.29	2.78
Grapefruit	Box	6.84	4.16	5.43	2.53
Lemons	Box	13.24	-2.04	6.89	-1.91
Limes	Box	20.12	-1.84	12.69	-1.22
Tangelos	Box	7.65	4.55	5.58	4.59
Templets	Box	7.05	4.91	5.69	3.74
Tree Nuts:					
Almonds, California 5/	Pounds	---	---	1,050	1,000
Hazelnuts, 2 States	Tons	---	---	853	848
Macadamia nuts, Hawaii	Pounds	---	---	0.900	0.890
Pistachios	Pounds	---	---	1,170	1,650
Pecans, all	Pounds	---	---	0.541	0.688
Improved	Pounds	---	---	0.626	0.761
Native and seedling	Pounds	---	---	0.411	0.489
Walnuts, 2 States	Tons	---	---	927	7/

--- = Not available.
 1/ Preliminary. 2/ Fresh fruit prices are equivalent returns at packing house door for Washington and Oregon, equivalent first delivery point returns for California, and prices as sold for other States. Processing fruit prices for all States are equivalent returns at processing plant door. 3/ 1988, indicated 1988/89. 4/ Equivalent on-tree returns 1988, indicated 1987/88. 5/ Shelled basis. 6/ Dollars per ton. 7/ Data available July 10, 1990.
 8/ Data available August 21, 1990. 9/ Processed mostly canned, but includes small quantities of dried and other uses. 10/ Missing data are not published to avoid disclosure of individual operations.

Sources: 1989 Noncitrus Fruits and Nuts Summary, September 1989 Agricultural Prices, and 1989 Vegetables Preliminary, NASS, USDA.

Table 27--Selected fresh citrus prices, f.o.b., packed fresh, by months, 1986-90

Item and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
--Dollars per box--												
Oranges:												
Arizona												
1986	13.60	12.90	13.60	13.10	12.20	10.80	8.46	--	--	18.00	16.80	14.30
1987	12.20	10.60	11.60	12.00	13.20	11.90	12.20	--	--	33.20	19.90	15.70
1988	14.90	13.50	14.30	15.00	14.40	8.90	16.00	--	--	21.20	21.80	19.00
1989	14.10	13.90	16.60	13.60	13.50	16.90	17.10	--	--	--	20.30	17.00
1990	16.20	16.00										
Florida												
1986	11.30	11.10	10.50	10.10	10.00	13.50	--	--	--	--	13.40	13.30
1987	11.70	11.40	12.20	12.40	12.70	16.60	--	--	--	--	14.60	14.00
1988	13.30	14.10	15.10	14.30	14.40	17.20	--	--	--	--	15.00	14.40
1989	12.80	12.40	12.60	13.30	14.90	19.50	--	--	--	20.00	16.00	15.30
1990	20.50	20.20										
California												
1986	15.10	13.70	13.80	12.90	13.10	12.10	12.10	12.40	13.10	14.60	16.20	14.80
1987	14.60	14.00	13.70	13.70	15.80	16.80	17.20	15.20	17.80	21.20	19.70	14.90
1988	15.60	14.40	14.20	15.40	19.40	18.80	16.70	15.90	16.30	12.50	16.60	16.90
1989	14.40	13.50	13.90	14.30	16.20	16.80	17.50	17.00	17.20	15.60	14.60	15.20
1990	14.50	14.70										
Texas												
1986	--	--	--	--	--	--	--	--	--	22.00	19.10	17.30
1987	13.30	12.50	11.70	10.70	--	--	--	--	--	18.00	18.50	16.20
1988	15.50	15.30	14.50	15.60	--	--	--	--	--	--	14.90	14.80
1989	12.90	13.50	13.20	13.30	--	--	--	--	--	--	15.10	14.80
1990	19.50	--										
Grapefruit:												
Arizona												
1986	12.20	11.60	10.30	10.90	13.20	13.30	--	--	18.50	17.50	12.30	11.00
1987	11.00	10.30	8.78	8.23	12.40	14.30	9.14	--	--	12.60	11.30	10.90
1988	11.00	10.30	10.10	9.75	11.70	11.60	6.88	--	--	14.00	10.80	10.90
1989	10.50	10.10	10.50	11.50	12.50	13.90	10.40	--	--	12.90	11.60	11.20
1990	14.30	16.00										
Florida												
1986	10.90	11.20	11.80	12.20	12.80	--	--	--	--	--	15.20	12.00
1987	12.10	11.70	11.30	11.90	12.10	13.40	--	--	--	16.40	13.30	13.00
1988	12.60	12.90	12.60	12.30	12.50	--	--	--	--	--	16.70	13.10
1989	12.50	12.40	12.30	12.30	12.80	13.30	--	--	--	17.50	14.20	13.40
1990	17.10	17.70										
California												
1986	16.10	14.90	14.70	12.00	14.20	15.50	15.30	15.20	16.00	--	13.40	13.20
1987	12.60	13.00	12.80	12.30	13.80	15.60	15.60	13.40	14.60	14.30	15.70	13.50
1988	13.90	13.00	11.70	11.60	12.30	13.00	15.20	15.10	15.70	14.70	13.90	15.50
1989	14.80	11.10	11.60	12.50	13.40	12.40	15.90	16.00	19.60	15.20	12.10	14.50
1990	17.50	16.90										
Texas												
1986	--	--	--	--	--	--	--	--	--	20.50	20.50	17.90
1987	13.40	12.30	13.30	14.70	14.70	--	--	--	--	20.00	17.70	15.80
1988	11.90	12.10	11.40	11.30	11.30	--	--	--	--	--	16.60	14.10
1989	11.30	9.94	10.80	12.10	12.10	--	--	--	--	--	14.40	13.50
1990	20.10	--										
Lemons:												
Arizona												
1986	20.80	16.10	12.80	9.42	20.30	12.80	--	--	15.30	17.00	16.40	16.50
1987	16.70	19.20	19.50	10.90	5.14	--	--	--	30.20	26.10	23.60	19.70
1988	17.30	18.50	24.30	9.94	--	--	--	--	30.00	25.40	21.50	20.10
1989	20.40	23.20	23.30	15.40	--	--	--	--	32.60	31.50	27.40	24.60
1990	21.60	25.20										
California												
1986	22.00	18.60	17.70	18.60	18.20	22.90	24.20	18.20	13.90	17.60	18.80	18.40
1987	18.40	19.50	21.10	20.70	20.60	23.70	27.30	30.00	28.90	23.60	20.20	18.20
1988	17.10	18.40	21.30	22.00	23.50	27.50	29.70	32.40	29.50	24.60	21.80	19.70
1989	19.50	21.00	22.60	23.70	26.40	29.40	30.60	31.00	32.50	32.80	27.00	24.50
1990	24.30	25.80										
Tangerines:												
Arizona												
1986	20.90	21.00	19.60	15.60	7.02	--	--	--	--	23.00	20.00	22.50
1987	22.50	15.90	13.70	1.54	5.25	--	--	--	--	--	20.90	23.80
1988	25.40	21.30	20.40	12.20	30.20	--	--	--	--	--	21.50	25.30
1989	27.50	21.10	21.10	9.72	--	--	--	--	--	--	25.60	26.90
1990	28.60	24.70										
Florida												
1986	25.40	23.70	24.30	25.40	--	--	--	--	--	33.00	31.20	24.80
1987	23.30	21.90	20.70	26.00	--	--	--	--	--	33.00	32.20	24.60
1988	23.50	24.00	24.50	28.00	--	--	--	--	--	33.00	29.00	27.00
1989	26.70	26.40	24.00	28.00	--	--	--	--	--	36.30	33.80	25.70
1990	40.20	39.00										
California												
1986	22.90	24.90	17.10	18.00	19.90	10.00	--	--	--	--	32.00	22.40
1987	19.40	20.90	18.50	16.90	19.70	--	--	--	--	--	47.10	33.30
1988	20.00	26.00	25.50	25.10	16.90	16.90	16.90	--	--	--	35.40	28.30
1989	24.20	24.70	22.30	18.30	18.70	18.70	--	--	--	--	36.20	32.40
1990	35.10	25.50										

-- = Not available.

Source: Agricultural Prices (monthly), NASS, USDA.

Table 28--Selected citrus all price, on-tree returns, by months, 1986-90

Item and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
--Dollars per box--												
Oranges:												
Arizona												
1986	5.16	3.33	5.03	4.42	3.64	2.96	0.44	--	--	9.35	8.60	5.91
1987	4.09	2.74	3.03	3.28	4.05	3.37	2.22	--	--	19.69	11.40	7.40
1988	6.60	5.67	5.36	5.92	5.35	1.12	1.80	--	--	13.94	13.19	10.66
1989	6.45	5.89	7.94	4.50	4.45	6.56	6.40	--	--	--	12.43	8.77
1990	7.05	6.64	--	--	--	--	--	--	--	--	--	--
Florida												
1986	3.83	3.77	3.52	3.78	4.20	4.23	--	--	--	--	5.01	4.42
1987	4.45	4.83	5.64	5.83	6.05	6.54	--	--	--	--	7.53	6.33
1988	6.46	6.87	8.39	8.41	8.81	9.01	--	--	--	--	6.46	6.12
1989	6.54	6.97	6.77	7.66	8.98	9.54	--	--	--	8.28	5.93	5.42
1990	4.53	4.81	--	--	--	--	--	--	--	--	--	--
California												
1986	6.33	5.06	4.83	3.64	4.49	4.09	3.60	3.91	4.59	6.26	7.75	6.45
1987	5.78	4.76	4.61	4.20	5.86	6.18	6.05	5.41	7.43	10.42	10.69	6.19
1988	6.20	5.05	4.75	5.61	8.84	8.02	6.49	5.44	5.56	2.83	5.25	8.13
1989	8.13	5.24	4.27	4.55	4.94	6.22	6.00	6.52	5.78	6.01	4.77	3.99
1990	5.64	5.31	--	--	--	--	--	--	--	--	--	--
Texas												
1986	--	--	--	--	--	--	--	--	--	10.37	10.10	5.80
1987	4.79	3.89	3.44	9.93	--	--	--	--	--	9.86	8.92	8.12
1988	6.37	6.94	6.56	7.02	7.24	--	--	--	--	8.36	7.85	6.94
1989	6.12	5.97	5.46	5.29	3.03	--	--	--	--	9.15	8.58	6.27
1990	7.84	--	--	--	--	--	--	--	--	--	--	--
Grapefruit:												
Arizona												
1986	3.86	3.27	2.18	2.42	3.00	1.47	--	--	12.08	9.41	5.29	3.55
1987	3.45	2.78	1.69	0.95	3.36	3.27	0.95	5.65	3.91	5.61	3.91	4.01
1988	3.93	2.84	2.24	2.62	3.08	2.43	-0.17	--	--	6.59	3.28	3.67
1989	2.82	2.28	3.03	2.98	3.19	3.14	0.34	--	--	5.68	4.44	4.00
1990	6.93	7.87	--	--	--	--	--	--	--	--	--	--
Florida												
1986	3.86	3.89	4.04	4.71	5.64	--	--	--	--	--	7.14	4.64
1987	4.69	4.72	4.67	4.87	5.22	6.24	--	--	--	9.17	6.23	5.79
1988	5.58	5.50	5.19	5.20	5.12	--	--	--	--	--	8.16	5.29
1989	4.32	4.38	4.24	4.07	4.58	4.94	--	--	--	8.19	5.43	5.02
1990	3.94	4.56	--	--	--	--	--	--	--	--	--	--
California												
1986	8.04	5.97	6.13	3.33	4.11	6.76	6.03	6.14	8.05	--	6.20	5.40
1987	5.66	4.53	4.41	3.60	4.13	4.59	5.53	4.30	4.47	5.32	8.58	6.24
1988	5.84	5.51	4.07	3.39	3.71	3.97	5.01	5.46	5.26	5.32	6.23	7.65
1989	6.30	3.15	3.05	3.41	3.55	3.65	5.70	5.63	6.10	8.17	4.94	6.74
1990	9.86	7.09	--	--	--	--	--	--	--	--	--	--
Texas												
1986	5.92	--	--	--	--	--	--	--	--	10.17	9.97	8.74
1987	5.39	5.12	5.69	4.47	7.00	--	--	--	--	9.69	8.90	7.68
1988	5.50	4.92	4.08	3.93	4.05	--	--	--	--	7.51	7.36	6.15
1989	3.95	3.02	1.98	2.34	3.18	--	--	--	--	8.08	3.70	6.01
1990	5.89	--	--	--	--	--	--	--	--	--	--	--
Lemons:												
Arizona												
1986	5.00	1.88	-0.49	-0.81	10.10	1.28	--	--	2.27	3.37	2.41	1.70
1987	0.83	0.47	-0.09	-0.78	-2.32	--	--	--	10.77	9.62	6.96	3.63
1988	1.58	2.29	5.72	-1.28	--	--	--	--	12.13	8.61	5.78	3.98
1989	2.92	1.53	5.25	0.28	--	--	--	--	19.38	13.51	9.14	6.68
1990	4.77	4.31	--	--	--	--	--	--	--	--	--	--
California												
1986	7.15	5.01	4.36	4.51	4.56	7.88	8.92	4.06	1.16	3.04	2.57	1.96
1987	2.36	2.98	3.38	3.44	5.01	8.58	10.76	12.26	8.94	7.74	3.99	2.74
1988	1.64	2.27	5.92	6.58	8.04	12.09	13.42	15.76	9.87	8.19	4.85	3.87
1989	4.10	4.31	5.24	7.20	11.32	14.66	15.17	15.23	17.76	13.46	10.23	7.78
1990	9.62	9.49	--	--	--	--	--	--	--	--	--	--
Tangerines:												
Arizona												
1986	10.53	8.40	8.92	7.36	0.02	--	--	--	--	16.24	10.33	12.25
1987	12.36	7.40	6.20	-5.22	-1.48	--	--	--	--	--	13.38	14.54
1988	14.89	10.82	11.22	5.12	23.12	--	--	--	--	--	10.46	15.61
1989	16.59	12.16	9.06	2.56	--	--	--	--	--	--	16.77	17.08
1990	21.44	14.89	--	--	--	--	--	--	--	--	--	--
Florida												
1986	8.32	8.61	11.45	11.84	--	--	--	--	--	17.61	16.49	11.15
1987	8.25	8.75	8.96	13.36	--	--	--	--	--	19.90	18.59	11.61
1988	10.13	11.72	13.44	15.59	--	--	--	--	--	18.14	15.06	12.75
1989	9.69	11.39	11.52	14.68	--	--	--	--	--	21.73	18.77	12.65
1990	12.23	19.09	--	--	--	--	--	--	--	--	--	--
California												
1986	12.75	12.00	6.36	6.84	6.99	1.54	--	--	--	--	19.47	11.52
1987	11.79	10.64	7.05	6.08	9.34	--	--	--	--	--	40.02	24.15
1988	12.69	15.69	10.74	6.84	2.74	2.17	1.71	--	--	--	28.24	17.68
1989	15.80	13.06	9.30	7.37	3.82	3.41	--	--	--	--	27.57	20.85
1990	25.99	15.83	--	--	--	--	--	--	--	--	--	--

-- = Not available.

Source: Agricultural Prices (monthly), NASS, USDA.

Table 29--Frozen concentrated citrus juices: Stocks, pack, imports, supply, and movement, Florida, 1985/86-1989/90

Item and season	Carryin	Pack	Import	Total supply	Total season movement	Carryout
--Million gallons-- 1/						
Orange:						
1985/86	48.3	132.4	82.7	263.4	226.4	37.0
1986/87	37.0	145.1	83.0	265.1	225.3	39.8
1987/88	39.8	170.0	70.8	280.6	238.4	42.2
1988/89	42.2	174.7	64.4	281.3	235.0	46.3
1989/90	46.3					
Grapefruit:						
1985/86	3.4	24.2	2.0	29.6	26.2	3.4
1986/87	3.4	28.9	1.4	33.7	28.4	5.2
1987/88	5.2	31.9	1.6	38.7	28.9	9.8
1988/89	9.8	32.5	0.7	43.0	27.6	15.3
1989/90	15.3					
Tangerine:						
1985/86	0.6	0.4	0.6	1.6	1.3	0.3
1986/87	0.3	0.4	0.1	0.8	0.7	0.1
1987/88	0.1	0.6	0.7	1.4	1.1	0.3
1988/89	0.3	0.5	0.1	0.9	0.8	0.1
1989/90	0.1					

1/ Oranges and tangerines, 42 degree Brix; Grapefruit, 40 degree Brix.

Source: Florida Citrus Processors Association.

Table 30--Production and utilization of specified noncitrus fruits, United States, 1987-89

Commodity and year	Production			Utilization 1/									
	Total	Utilized 2/	Fresh	Processed (fresh equivalent)									
				Canned	Frozen	Brined	Crushed for			Dried	Other 3/	Total processed 2/	
							Wine	Juice	Oil				
--1,000 short tons--													
Apricots:													
1987 4/	114.4	106.3	16.0	53.0	13.1	--	--	--	--	23.6	--	90.3	
1988 4/	101.6	93.5	18.2	44.5	12.2	--	--	--	--	17.7	--	75.3	
1989 4/	117.0	113.0	15.3	65.0	11.5	--	--	--	--	21.0	--	97.7	
Bananas:													
1987	5.7	5.7	5.7	--	--	--	--	--	--	--	--	--	
1988	6.5	6.5	6.5	--	--	--	--	--	--	--	--	--	
1989	5.5	5.5	5.5	--	--	--	--	--	--	--	--	--	
Cherries, sweet:													
1987	215.0	213.0	108.1	12.2	--	74.9	--	--	--	--	6/17.8	104.9	
1988	186.2	184.5	87.2	15.0	--	67.6	--	--	--	--	6/14.7	97.3	
1989	194.5	191.9	103.5	15.0	--	59.0	--	--	--	--	6/14.5	88.4	
Cherries, tart:													
1987	179.5	143.0	4.6	35.8	94.1	--	--	--	--	--	8.6	138.5	
1988	118.1	116.8	2.5	27.9	80.8	--	--	--	--	--	5.6	114.3	
1989	137.4	121.8	3.4	25.4	88.6	--	--	--	--	--	4.6	118.5	
Dates:													
1987	19.4	19.4	19.4	--	--	--	--	--	--	--	--	--	
1988	22.0	22.0	22.0	--	--	--	--	--	--	--	--	--	
1989	22.2	22.2	22.2	--	--	--	--	--	--	--	--	--	
Figs:													
1987	52.3	52.3	1.8	--	--	--	--	--	--	50.6	--	50.6	
1988	48.3	48.3	1.5	--	--	--	--	--	--	46.8	--	46.8	
1989	48.0	48.0	0.9	--	--	--	--	--	--	47.1	--	47.1	
Grapes:													
1987	5,267.0	5,253.5	716.2	40.0	--	--	2,647.0	411.2	--	1,439.0	--	4,537.2	
1988	6,033.7	6,032.1	831.3	40.0	--	--	2,982.1	351.7	--	1,827.0	--	5,200.8	
1989	5,895.9	5,895.1	744.2	40.0	--	--	2,809.1	388.8	--	1,913.0	--	5,150.9	
Kiwifruit:													
1987	29.0	26.6	26.6	--	--	--	--	--	--	--	--	--	
1988	32.7	29.5	29.5	--	--	--	--	--	--	--	--	--	
1989	36.3	34.5	34.5	--	--	--	--	--	--	--	--	--	
Nectarines:													
1987	191.0	191.0	190.5	--	--	--	--	--	--	--	--	--	
1988	200.0	200.0	199.0	--	--	--	--	--	--	--	--	--	
1989	200.0	200.0	198.0	--	--	--	--	--	--	--	--	--	
Olives:													
1987	67.5	67.5	0.5	7/55.0	--	--	--	--	--	3.0	--	8/9.0	67.0
1988	87.5	87.5	0.5	7/70.0	--	--	--	--	--	3.0	--	8/14.0	87.0
1989	123.0	123.0	0.5	7/94.0	--	--	--	--	--	5.5	--	8/23.0	122.5

--Continued

Table 30--Production and utilization of specified noncitrus fruits, United States, 1987-89--Continued

Commodity and year	Production			Utilization 1/								
	Total	Utilized 2/	Fresh	Processed (fresh equivalent)								
				Canned	Frozen	Brined	Crushed for			Dried	Other 3/	Total processed 2/
							Wine	Juice	Oil			
--1,000 short tons--												
Papayas:												
1987	33.5	33.5	28.0	--	--	--	--	--	--	--	--	5.5
1988	34.5	34.5	28.5	--	--	--	--	--	--	--	--	6.0
1989	36.0	36.0	30.5	--	--	--	--	--	--	--	--	5.5
Peaches:												
1987	1,190.8	1,119.5	556.8	438.6	72.6	--	--	--	--	17.5	34.1	562.7
1988	1,307.0	1,224.3	611.7	493.0	66.0	--	--	--	--	20.6	33.1	612.6
1989	1,166.7	1,105.2	518.6	462.2	71.7	--	--	--	--	14.3	38.5	586.7
Pears:												
1987	938.5	936.1	454.9	9/473.3	--	--	--	--	--	8.0	--	481.3
1988	860.9	860.4	427.1	9/425.3	--	--	--	--	--	8.0	--	433.3
1989	909.0	908.7	452.7	9/449.4	--	--	--	--	--	6.6	--	456.0
Pineapples:												
1987	692.0	692.0	134.0	--	--	--	--	--	--	--	--	558.0
1988	659.0	659.0	133.0	--	--	--	--	--	--	--	--	526.0
1989	580.0	580.0	136.0	--	--	--	--	--	--	--	--	444.0
California plums:												
1987	245.0	245.0	--	--	--	--	--	--	--	--	--	--
1988	216.0	216.0	--	--	--	--	--	--	--	--	--	--
1989	213.0	213.0	--	--	--	--	--	--	--	--	--	--
California prunes:												
1987	682.4	682.4	--	--	--	--	--	--	--	682.4	--	682.4
1988	469.6	469.6	--	--	--	--	--	--	--	469.6	--	469.6
1989	718.1	718.1	--	--	--	--	--	--	--	718.1	--	718.1
Other prunes & plums 5/:												
1987	49.5	45.2	21.6	11.9	1.2	--	--	--	--	10.5	--	23.6
1988	52.0	48.1	24.0	13.4	1.3	--	--	--	--	9.4	--	24.1
1989	44.0	41.9	22.8	13.0	1.2	--	--	--	--	5.0	--	19.2
Strawberries:												
1987	557.6	557.6	389.3	--	--	--	--	--	--	--	--	168.3
1988	587.5	587.5	425.7	--	--	--	--	--	--	--	--	161.8
1989	554.0	554.0	414.3	--	--	--	--	--	--	--	--	139.7

1/ For all items except bananas and California apricots, dates, plums, and prunes, some quantities canned, frozen, or otherwise processed are included in other utilization categories to avoid disclosure of individual operations. 2/ Some totals do not add due to rounding. 3/ Tart cherries, juice, wine, and brined; sweet cherries, frozen, juice, etc.; and olives, chopped, minced, brined, and other cures. 4/ Missing data are not published to avoid disclosure of individual operations, but are included in total. 5/ Michigan, Idaho, Oregon, and Washington. 6/ Frozen juices. 7/ Canning size fruit only mostly whole and pitted, but also includes some chopped and sliced. 8/ Limited (canned sliced, chopped, wedged and undersize. 9/ Mostly canned, includes small quantities dried; other, excluding California dried pears, uses not published by State to avoid disclosure of individual operations.

Sources: 1989 Noncitrus Fruits and Nuts Summary and 1989 Vegetables Preliminary, NASS, USDA.

Table 31--Fruit for processing: Season-average price per ton received by growers for selected noncitrus fruits, by type of use, principal States, 1987-89 1/

Fruit, use, and States	1987	1988	1989	Fruit, use, and States	1987	1988	1989
--Dollars--				--Dollars--			
Apricots:				Grapes--California (cont'd):			
Canning				Dried (fresh basis)	203.00	180.00	213.00
California	286.00	282.00	280.00	Wine	219.00	253.00	262.00
Freezing				Peaches, clingstone:			
California	291.00	294.00	310.00	Canning			
Drying				California	193.00	212.00	220.00
California (fr. basis)	310.00	314.00	296.00	Peaches, freestone:			
Cherries, tart:				Canning			
Processing, all				California	176.00	181.00	192.00
New York	132.00	444.00	3/	Freezing			
Pennsylvania	178.00	452.00	3/	California	178.00	165.00	167.00
Michigan	148.00	338.00	3/	Drying			
Wisconsin	88.00	212.00	3/	California (fr. basis)	101.00	117.00	110.00
Cherries, sweet:				Pears, Bartlett:			
Processing, all				Canning			
Oregon	593.00	579.00	507.00	Washington	190.00	184.00	222.00
Michigan	500.00	512.00	398.00	California	182.00	218.00	260.00
Washington	506.00	386.00	406.00	Drying			
Canning				California (fr. basis)	106.00	147.00	146.00
Washington	667.00	644.00	489.00	Prunes and plums:			
Oregon	740.00	660.00	680.00	Canning			
Michigan	500.00	512.00	398.00	Michigan	83.00	4/	117.00
Brining				Prunes:			
Washington	531.00	391.00	450.00	Drying (fresh basis)			
Michigan	500.00	512.00	398.00	California	247.00	236.00	3/
Oregon	580.00	555.00	475.00				
Grapes--California							
All processing	213.00	224.00	242.00				

1/ Prices are basis bulk fruit at first delivery point for all California fruits except prunes and pears for drying and processed grapes. Prices for California prunes and pears for drying and grapes and for fruits in other States are equivalent processing plant-door returns. 2/ All grape varieties used for processing and wine; raisin varieties for dried (fresh basis). 3/ Data available July 10, 1990. 4/ Missing data are not published to avoid disclosure of individual operations.

Source: 1989 Noncitrus Fruits and Nuts Summary, NASS, USDA.

Table 32--Canned noncitrus fruit: Canner's stocks, supplies, and shipments, California, 1986/87-1989/90

Item and season 1/	Carryin	Pack	Total supply	Shipments to Dec. 1	Dec. 1 stocks	Total season shipments	Carryover
--1,000 equivalent cases 24 No. 2 1/2's--							
Total:							
1986/87	10,051	25,791	35,842	14,837	21,005	29,499	6,343
1987/88	6,343	27,887	34,230	16,817	17,413	30,495	3,735
1988/89	3,735	30,674	34,409	15,918	18,491	30,449	4,019
1989/90	4,019	31,194	35,213	13,358	20,091		
Apricots:							
1986/87	364	505	869	611	258	831	38
1987/88	38	1,281	1,319	712	607	1,187	132
1988/89	132	1,381	1,513	680	833	1,234	279
1989/90	279	1,485	1,764				
Fruit cocktail:							
1986/87	2,973	8,976	11,949	4,695	7,254	9,679	2,270
1987/88	2,270	9,344	11,614	5,116	6,498	9,932	1,682
1988/89	1,682	9,724	11,406	5,226	6,180	10,366	1,064
1989/90	1,064	10,651	11,715	4,320	7,395		
Mixed fruit:							
1986/87	1,066	1,845	2,911	1,061	1,850	2,210	701
1987/88	701	2,433	3,134	1,514	1,620	2,565	569
1988/89	569	2,306	2,875	1,458	1,417	2,500	342
1989/90	342	2,373	2,715	1,346	1,369		
Peaches, clingstones:							
1986/87	5,648	14,465	20,113	8,470	11,643	16,779	3,334
1987/88	3,334	14,829	18,163	9,475	8,688	16,811	1,352
1988/89	1,352	17,263	18,615	8,554	10,061	16,349	2,334
1989/90	2,334	16,685	19,019	7,692	11,327		

1/ Season beginning June 1.

Sources: California League of Food Processors and California Cling Peach Advisory Board.

Table 33--Stocks of frozen fruits: End of January, 1987-90

Frozen fruit	1987	1988	1989	1990 1/
--1,000 pounds--				
Apples	69,645	74,899	73,583	74,030
Apricots	3,498	6,490	5,885	7,367
Blackberries	15,655	19,649	22,114	13,446
Blueberries	43,972	44,015	61,401	64,469
Boysenberries	2,699	4,139	3,491	2,544
Cherries, tart (RSP)	127,997	134,922	112,308	113,950
Cherries, tart (juice)	(2)	(2)	(2)	4,860
Cherries, sweet	11,158	11,722	19,920	19,213
Grapes	2,215	2,866	3,973	5,735
Peaches	32,371	72,586	89,309	77,062
Raspberries, red	23,862	33,036	34,477	33,628
Strawberries	128,042	212,150	205,421	138,546
Other	171,202	173,685	202,595	165,851
Total	632,316	790,159	834,477	720,701

1/ Preliminary.

2/ Juice cherries included in all tart cherries prior to January 1990.

Source: Cold Storage Report, February 1990, NASS, USDA.

Table 34--Apples, commercial crop 1/: Total production and season-average prices received by growers, 1987, 1988, and indicated 1989

State and area	Production			Price per pound		
	1987	1988	1989	1987	1988	1989
--Million pounds--			--Dollars--			
Eastern States:						
Maine	75.0	94.0	68.0	0.191	0.197	0.204
New Hampshire	45.0	57.0	42.0	0.224	0.226	0.234
Vermont	44.0	45.0	44.0	0.180	0.184	0.191
Massachusetts	86.0	88.0	78.0	0.206	0.226	0.238
Rhode Island	5.5	6.0	4.5	0.235	0.246	0.267
Connecticut	39.0	41.0	35.0	0.212	0.244	0.254
New York	880.0	910.0	960.0	0.092	0.108	0.084
New Jersey	80.0	65.0	40.0	0.124	0.120	0.142
Pennsylvania	500.0	520.0	340.0	0.089	0.092	0.098
Delaware	26.0	19.0	15.0	0.106	0.122	0.145
Maryland	40.0	54.0	37.0	0.103	0.122	0.152
Virginia	455.0	425.0	360.0	0.091	0.111	0.098
West Virginia	180.0	215.0	125.0	0.075	0.095	0.147
North Carolina	390.0	350.0	220.0	0.064	0.080	0.091
South Carolina	45.0	38.0	35.0	0.084	0.121	0.121
Georgia	50.0	33.0	30.0	0.113	0.131	0.127
Total	2,940.5	2,960.0	2,433.5			
Central States:						
Ohio	150.0	95.0	125.0	0.158	0.177	0.176
Indiana	72.0	56.0	64.0	0.170	0.176	0.169
Illinois	103.0	85.0	91.0	0.119	0.163	0.140
Michigan	1,050.0	830.0	1,000.0	0.076	0.088	0.087
Wisconsin	65.0	45.0	65.0	0.155	0.212	0.179
Minnesota	26.0	14.0	31.0	0.230	0.302	0.278
Iowa	10.0	9.5	11.5	0.203	0.214	0.212
Missouri	53.0	56.0	55.0	0.099	0.172	0.128
Kansas	12.0	12.0	13.0	0.147	0.176	0.193
Kentucky	21.0	11.0	16.0	0.153	0.158	0.180
Tennessee	15.0	12.5	11.5	0.134	0.156	0.153
Arkansas	4.0	10.0	9.0	0.119	0.168	0.188
Total	1,581.0	1,236.0	1,492.0			
Western States:						
Idaho	155.0	135.0	150.0	0.106	0.140	0.093
Colorado	125.0	65.0	70.0	0.067	0.110	0.100
New Mexico	12.6	10.0	5.3	0.156	0.195	0.207
Utah	68.0	40.0	56.0	0.074	0.125	0.109
Washington	5,000.0	3,900.0	5,000.0	0.073	0.130	0.096
Oregon	210.0	155.0	150.0	0.054	0.119	0.084
California	650.0	630.0	650.0	0.111	0.187	0.148
Total	6,220.6	4,935.0	6,081.3			
United States	10,742.1	9,131.0	10,006.8	0.086	0.127	0.105

Source: 1989 Noncitrus Fruits and Nuts Summary, NASS, USDA.

Table 35--Grapes: Total production and season-average grower prices, by States, 1987-89

State and crop	Production			Price per ton		
	1987	1988	1989	1987	1988	1989
	--Short tons--			--Dollars--		
Arizona	31,000	25,500	26,500	1,010	1,250	674
Arkansas	5,000	7,000	6,500	269	300	319
California						
All types	4,660,000	5,520,000	5,355,000	258	263	288
Wine	1,950,000	2,180,000	2,120,000	248	297	299
Table	540,000	770,000	620,000	435	363	426
Raisin 1/	2,170,000	2,570,000	2,615,000	223	205	247
Georgia	2,700	2,500	2,800	870	911	781
Michigan	60,000	53,000	43,000	260	256	265
Missouri	2,750	3,250	3,600	351	311	348
New York	178,000	157,000	152,000	228	230	254
North Carolina	1,800	3,300	1,700	360	330	406
Ohio	10,000	8,900	8,000	216	264	266
Oregon 2/		7,750	7,450		610	760
Pennsylvania	65,500	63,000	60,000	235	214	274
South Carolina	700	500	300	344	394	810
Washington	249,500	182,000	229,000	225	245	302
United States	5,266,950	6,033,700	5,895,850	259	266	290

1/ Fresh equivalent of dried and not dried.
2/ Oregon included beginning with 1988 crop.

Source: 1989 Noncitrus Fruits and Nuts Summary, NASS, USDA.

Table 36--Pears: Utilized production, by States and Pacific Coast, variety composition, 1987-89

State	1987	1988	1989	Pacific Coast	1987	1988	1989
	--Short tons--				--Short tons--		
California	337,000	302,000	316,000	Washington:			
Colorado	6,400	3,700	4,000	Bartlett	171,000	147,000	157,000
Connecticut	1,450	1,600	1,400	Other	165,000	163,000	187,000
Michigan	5,000	6,000	8,000	Total	336,000	310,000	344,000
New York	14,500	17,300	16,300	Oregon:			
Oregon	228,000	213,000	211,000	Bartlett	78,000	68,000	66,000
Pennsylvania	5,250	4,800	5,400	Other	150,000	145,000	145,000
Utah	2,500	2,000	2,600	Total	228,000	213,000	211,000
Washington	336,000	310,000	344,000	California:			
United States	936,100	860,400	908,700	Bartlett	325,000	291,000	299,000
				Other	12,000	11,000	17,000
				Total	337,000	302,000	316,000
				3 States:			
				Bartlett	574,000	506,000	522,000
				Other	327,000	319,000	349,000
				Total	901,000	825,000	871,000

Source: 1989 Noncitrus Fruits and Nuts Summary, NASS, USDA.

Table 37--Pistachios: Production, supply, and distribution, 1987/88-1989/90

Country	Marketing year 1/	Beginning stocks	Production	Imports	Total supply	Exports	Domestic consumption	Ending stocks
--Metric tons, in-shell basis--								
Greece	1987/88	30	4,030	100	4,160	35	3,000	1,125
	1988/89	1,125	3,000	10	4,135	15	3,100	1,020
	1989/90	1,020	3,500	10	4,530	100	3,300	1,130
Italy	1987/88	1,400	4,000	5,159	10,559	1,434	6,025	3,100
	1988/89	3,100	300	5,999	9,399	1,610	6,789	1,100
	1989/90	1,000	3,300	7,000	11,300	2,000	7,700	1,600
Syria	1987/88	760	12,500	1,000	14,260	0	14,000	260
	1988/89	260	17,900	500	18,660	500	15,000	3,160
	1989/90	3,160	18,000	500	21,660	1,000	16,000	4,660
Turkey	1987/88	18,000	25,000	0	43,000	7,000	20,000	16,000
	1988/89	16,000	15,000	0	31,000	3,000	18,000	10,000
	1989/90	10,000	30,000	0	40,000	5,000	22,000	13,000
United States	1987/88	11,657	15,010	2,258	28,925	4,926	18,622	5,377
	1988/89	5,377	42,640	971	48,988	8,625	25,936	14,427
	1989/90	14,427	17,690	5,500	37,617	8,600	23,017	6,000
Totals	1987/88	31,847	60,540	8,517	100,904	13,395	61,647	25,862
	1988/89	25,862	78,840	7,480	112,182	13,750	68,825	29,607
	1989/90	29,607	72,490	13,010	115,107	16,700	72,017	26,390

1/ Marketing years are as follows: Italy, Syria, and United States, September-August; Greece and Turkey, October-September.

Note: U.S. Census Bureau export figures do not match these data due to variations in actual dates of shipments.

Source: Horticultural Products Review, FAS, USDA.

Table 38--Walnuts: Production, supply, and distribution, 1987/88-1989/90

Country	Marketing year 1/	Beginning stocks	Production	Imports	Total supply	Exports	Domestic consumption	Ending stocks
--Metric tons, in-shell basis--								
China (mainland)	1987/88	0	147,000	0	147,000	38,400	108,600	0
	1988/89	0	177,100	0	177,100	47,300	129,800	0
	1989/90	0	151,000	0	151,000	40,000	111,000	0
France	1987/88	0	26,500	6,700	33,200	11,500	21,700	0
	1988/89	0	21,500	11,400	32,900	10,900	22,000	0
	1989/90	0	26,200	8,000	34,200	11,500	22,700	0
India	1987/88	3,480	20,000	0	23,480	11,000	11,000	1,480
	1988/89	1,480	17,000	0	18,480	9,000	9,000	480
	1989/90	480	17,000	0	17,480	8,000	9,200	280
Italy	1987/88	100	20,000	7,021	27,121	2,343	19,278	5,500
	1988/89	5,500	11,000	9,500	26,000	2,500	22,000	1,500
	1989/90	1,500	18,000	9,000	28,500	3,000	23,000	2,500
Turkey	1987/88	5,000	65,000	0	70,000	2,000	62,000	6,000
	1988/89	6,000	64,000	0	70,000	4,000	61,000	5,000
	1989/90	5,000	62,000	0	67,000	4,000	59,000	4,000
United States	1987/88	32,909	224,075	549	257,533	72,706	118,329	66,498
	1988/89	66,498	189,600	189	256,287	77,343	124,329	54,615
	1989/90	54,615	195,045	100	249,760	85,000	127,431	37,327
Totals	1987/88	41,489	502,575	14,270	558,334	137,949	340,907	79,478
	1988/89	79,478	480,200	21,089	580,767	151,043	368,129	61,595
	1989/90	61,595	469,245	17,100	547,940	151,500	352,327	44,113

1/ Marketing years are as follows: United States, August-July; Italy and Turkey, September-August; China, France, and India, October-September.

Note: U.S. Census Bureau export figures do not match these data due to variations in actual dates of shipments.

Source: Horticultural Products Review, FAS, USDA.

Table 39--Fresh fruit: Representative truck rates for selected fruits, 1989 1/

Commodity, shipping point, and market	--Dollars per package--											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Apples (tray packed ctn.)												
Washington, Central to:												
Atlanta	2.85	2.85	2.93	2.93	2.93	2.93	2.93	2.88	2.88	2.93	2.88	2.88
Chicago	2.10	2.10	2.20	2.20	2.18	2.18	2.20	2.15	2.15	2.10	2.10	2.15
Dallas	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.30	2.35	2.35
Denver	1.65	1.65	1.55	1.55	1.60	1.60	1.60	1.60	1.55	1.55	1.55	1.55
Los Angeles	1.65	1.65	1.60	1.60	1.63	1.63	1.63	1.55	1.55	1.45	1.55	1.60
New York City	3.35	3.33	3.35	3.30	3.30	3.30	3.33	3.33	3.33	3.30	3.30	3.30
New York, Eastern to:												
Atlanta	1.25	1.25	1.25	1.25	--	--	--	--	--	1.25	1.25	1.25
New York City	0.58	0.58	0.58	0.58	--	--	--	--	--	0.58	0.58	0.58
W. Virginia and Virginia to:												
Atlanta	0.93	0.93	0.93	0.93	--	--	--	--	--	0.90	0.90	1.00
New York City	0.74	0.74	0.74	0.74	--	--	--	--	--	0.85	0.80	0.80
Grapefruit (4/5 bu. ctn.)												
Florida to:												
Atlanta	0.75	0.75	0.68	0.70	0.85	0.90	--	--	--	0.55	0.55	0.63
Chicago	1.35	1.35	1.25	1.30	1.58	1.75	--	--	--	1.20	1.20	1.28
New York City	1.38	1.38	1.25	1.35	1.60	1.80	--	--	--	1.23	1.23	1.28
Grapes (23 lb. lug)												
California, Kern District to:												
Atlanta	1.21	1.21	1.21	1.24	--	--	--	1.47	1.26	1.32	1.24	1.15
Chicago	1.12	1.12	1.12	1.18	--	--	--	1.41	1.21	1.15	1.12	1.09
Dallas	0.91	0.91	0.82	0.91	--	--	--	1.06	0.91	0.94	0.85	0.82
New York City	1.59	1.59	1.59	1.59	--	--	--	2.03	1.79	1.71	1.74	1.65
Citrus (7/10 bu. ctn.)												
California, Southern to:												
Atlanta	2.05	2.05	2.00	2.00	2.25	3.03	3.45	2.50	2.40	2.15	2.10	1.95
Chicago	1.75	1.75	1.75	1.80	2.00	2.60	3.25	2.40	1.85	1.90	1.80	1.80
Dallas	1.50	1.50	1.45	1.60	1.70	2.15	2.15	1.80	1.65	1.55	1.55	1.55
New York City	2.70	2.70	2.65	2.65	3.00	4.50	4.90	3.70	3.15	2.90	2.85	2.85
Oranges (4/5 bu. ctn.)												
Florida to:												
Atlanta	0.75	0.75	0.67	0.75	0.90	0.98	--	--	--	0.65	0.60	0.63
Chicago	1.33	1.33	1.25	1.35	1.58	1.75	--	--	--	1.28	1.25	1.33
New York City	1.33	1.33	1.28	1.35	1.60	1.80	--	--	--	1.33	1.25	1.35

-- = Not available.

1/ Reported from sample of shippers and/or truck brokers in specified areas for shipments during the first week of each month.

Source: Fruit and Vegetable Truck Rate Report, AMS, USDA.

Table 40--Monthly average fruit prices received by growers, United States, 1989-90

Commodity and unit	1989												1990	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Noncitrus:														
Apples for fresh use (dols./lb.)	0.181	0.180	0.166	0.144	0.135	0.108	0.098	0.161	0.191	0.159	0.134	0.122	0.125	0.130
Pears for fresh use (dols./ton)	336	362	368	350	397	491	480	398	382	387	369	351	349	389
Peaches for fresh use (dols./lb.)	---	---	--	--	0.266	0.220	0.196	0.223	0.266	---	---	---	---	---
Strawberries for fresh use (dols./lb.)	0.830	0.935	0.712	0.441	0.350	0.554	0.310	0.350	0.650	0.950	1.300	1.200	0.980	1.040
Citrus:														
Oranges: (\$/box) 1/														
Fresh use	6.97	6.22	6.58	6.92	8.76	9.94	10.34	9.84	8.94	10.11	9.23	7.77	7.69	7.58
Processing	6.29	6.50	5.66	7.04	8.41	8.19	0.37	0.36	0.36	1.10	2.26	4.62	4.29	4.27
All	6.38	6.45	5.98	7.01	8.46	8.53	6.52	5.78	5.62	6.22	6.47	5.63	4.70	4.93
Grapefruit: (\$/box) 1/														
Fresh use	5.94	5.65	5.63	6.35	6.84	5.92	9.21	9.32	12.96	10.84	7.34	6.80	9.17	10.93
Processing	2.32	3.04	3.12	2.49	1.99	-0.41	-0.21	-0.23	-0.24	0.31	1.87	2.23	1.59	2.99
All	4.35	4.10	3.91	4.40	4.65	3.51	5.65	5.63	6.10	8.18	5.54	5.18	4.62	4.68
Lemons: (\$/box) 1/														
Fresh use	8.97	10.33	11.87	12.96	15.66	18.66	19.86	20.32	21.68	21.70	16.30	13.71	12.83	14.94
Processing	-1.69	-1.98	-2.06	-2.12	-2.12	-2.12	-2.12	-2.26	-0.58	-0.62	-0.60	-0.34	-0.20	-0.20
All	3.74	4.08	5.24	7.20	11.32	14.66	15.17	15.23	17.80	13.47	9.87	7.48	7.99	8.84
Tangerines: (\$/box) 1/														
Fresh use	18.21	17.33	15.28	14.22	11.54	11.54	---	---	---	27.70	25.37	17.75	28.68	21.68
Processing	2.79	3.35	3.65	3.31	0.36	0.36	---	---	---	0.40	0.92	1.87	1.99	2.92
All	12.21	12.09	10.38	10.24	3.82	3.41	---	---	---	21.73	19.56	13.30	13.97	16.93

-- = Not available.

1/ Equivalent on-tree returns.

Source: Agricultural Prices (monthly), NASS, USDA.

International Competition In the Processed Peach Industry

by Kirby Moulton*

Abstract: *Preliminary results of a global competition study of the canning peach industry are presented. Factors leading to the competitiveness of the major world canned peach producers vis-a-vis production costs and subsidies are analyzed using data collected and interviews conducted in the United States and 14 other countries. U.S. producers appear to be at an absolute cost disadvantage relative to other major producer countries. A demand analysis of the Pacific Rim suggests that canned peach imports are not related to increasing income, and market growth cannot be pegged to projected income growth in these countries.*

Keywords: *Canned peaches, global competition, EC canned peach subsidies*

Despite excellent returns in recent years, the U.S. processed peach industry faces some important changes in its competitive position. Imports, which were virtually negligible before 1983/84, climbed to a high level through 1988/89 (table A-1). No longer fueled by an over-valued dollar as they were between 1983 and 1986, the imports now reflect the emergence of low-cost competitors able to satisfy U.S. market requirements.

Increased competition is apparent also in export markets. U.S. exports of canned peaches dropped drastically after the European Community (EC) implemented its subsidy scheme for processed fruit. The scheme virtually closed the EC market to U.S. exports and diverted them mostly towards the Pacific Rim. U.S. processors now find themselves in increasingly vigorous competition in Pacific Rim markets

with low-cost processors from South Africa and Chile and subsidized processors from Greece.

After years of sometimes acrimonious negotiation, the EC and the United States reached an agreement in 1989 to eliminate "unfair" subsidies to EC fruit processors. The agreement may eliminate some pressures on U.S. processors, but still leaves Greece at least with an apparent absolute cost advantage over the United States.

The competitive inroads into domestic and international markets were not particularly painful for the United States in marketing years 1987/88 and 1988/89 because prices were high and U.S. supplies relatively tight. Over the next few years, however, global supplies of peaches for processing are expected to increase about 10 percent. This will cause prices to drop and competition to escalate.

Unless the U.S. processing peach industry can stimulate consumer demand through new product development, product differentiation, or better service, it may need to reduce output. Clearly, U.S. processors have an incentive to better understand the emerging

competitive climate that will affect their future profits.

The United States dominates global production of canned peaches, pears, and mixed fruits (table A-2). Its output is far greater than that of any other country. For example, U.S. canned peach production was half again as large as that in Greece, and production of canned pears and fruit cocktail was three times that of Italy in 1988. However, production of canned peaches is increasing in Greece (double in 10 years) and declining in the United States (off 39 percent in 10 years).

The Raw Product Situation

Canned peach production in four EC countries totaled 388,000 metric tons in 1988, 10 percent above U.S. output. This production, coupled with restrictive import policies, has made the EC a net exporter of canned peaches and apricots and virtually self-sufficient in canned pears. South Africa is the principal supplier of canned peaches to the EC, but imports represent a declining share of total supply. Canned peach imports by the United States, on the other hand, have increased in volume and market share. Imports averaged 10

*Economist, Department of Agricultural and Resource Economics, University of California, Berkeley.

Note: This article is based on preliminary results of a competition study conducted by the University of California and funded by the California Cling Peach Advisory Board and ERS under cooperative agreement number 58-3 AEL-8-00087.

Table A-1--U.S. imports of canned peaches, 1985-89

Country	Quantity					Value				
	1985	1986	1987	1988	1989	1985	1986	1987	1988	1989
	--Metric tons--					--1,000 dollars--				
Chile	4,985	3,134	4,262	9,182	25,357	3,108	1,689	2,591	6,424	8,066
Argentina	1,335	19	---	716	7,231	751	10	---	376	1,903
Greece	5,610	9,360	9,037	23,251	53,387	2,995	5,094	5,327	15,310	14,883
Spain	10,678	1,130	2,017	---	6,383	5,826	675	1,203	---	2,007
Italy	223	140	0	792	3,153	147	82	5	617	1,107
Other	8,629	4,845	4,210	7,413	2,874	5,305	2,459	2,493	4,818	520
Total	31,460	18,628	19,526	41,354	98,385	18,132	10,009	11,619	27,545	28,486

Table A-2--Production of canned fruits, 1988

Country	Peaches	Pears	Fruit cocktail
United States	352	186	189
Greece	225	1/	22
Italy	70	50	70
Spain	60	11	1/
France	33	19	20
Japan	23	1/	4
South Africa	68	23	39
Argentina	40	1/	7
Australia	26	32	1/
Chile	28	1/	1

1/ Negligible quantity.

Table A-3--Expected processor raw product cost for peaches, 1988-1989

Producing area	1988-1989		
	1988	1989	Difference
	--\$ per metric ton--		
Greece	141	203	62
South Africa	151	168	17
Italy	168	217	49
Spain	175	229	54
Chile	191	160	-31
Australia	219	261	42
United States	234	240	6

percent of domestic production in 1986-88, compared with 5 percent in 1982-84.

The production base for processed peaches is likely to increase 90,000-100,000 metric tons of raw product by 1995, 10 percent above current global production levels.^{1/} Although the rate is highly speculative, growth is anticipated in Greece (15 to 20 percent), South Africa (about 15 percent) and the United States (11 percent). Some expansion is also expected in Chile as growers look for alternatives to fresh fruits.

Fresh market peach varieties are not well suited for processing, hence opportunities to switch fresh and processing outlets are limited to those markets where clingstone varieties are accept-

able for fresh use. Some clingstone varieties are better than others for processing, which is changing the varietal mix of orchards in several countries, notably Argentina and Chile.

Grower Prices and Net Costs to Processors

Grower prices in U.S. dollar terms vary from year to year according to market conditions and exchange rate variations. Prices reported for 1988 by USDA's Foreign Agricultural Service (FAS) and by those interviewed, showed Greece to have the lowest net cost to processors for peaches at \$141 per metric ton (table A-3). South Africa followed with \$151 and Italy was third lowest with \$168. The U.S. price of \$234 per metric ton was the highest among reporting countries.

Preliminary information on 1989 peach prices indicates a global increase in processors' costs after subsidies are

taken into account (table A-3). The increases reflect lower EC subsidies, inflation in producing countries, changes in exchange rates, and a relatively strong demand stemming from tight market conditions for some products. To the extent that increases in raw product costs are reflected in finished product prices, shipments probably will decrease and carryover supplies in 1990/91 will increase. Shifts in market shares favoring Chile, because of a cost decrease, and California, because of a relatively small cost increase, are likely. The California base price for processing peaches in 1989 was \$240 per metric ton (table A-4).

The Processing Situation

Most people interviewed for this study were pessimistic about the profitability and long-run outlook for canned peaches. Exceptions were in Greece and Chile (and to some extent in Argentina), where relatively low-cost produc-

^{1/}This projection is based on interviews reported in: Moulton, Kirby, *Some Comments on Global Competition in the Canning Peach Industry*, Berkeley: University of California Agricultural Economics, July, 1989.

ers anticipated gaining market share from countries with relatively high costs such as the United States, Australia, and Italy. Processors in Spain believed that investment opportunities were more promising in value-added products, mandarin oranges, and other specialty products. Consolidation of some Spanish processors is expected to alter their long-term strategies concerning peaches.

The observed pessimism is contrary to trends between 1980 and 1988 (figure 1). During that period, average annual consumption worldwide increased 9 percent, while average production dropped 2 percent. Even with an allowance for potential reporting errors, it appears that production and consumption have at least not moved apart. In the United States, average annual consumption dropped 9 percent, but production dropped 27 percent. Production and consumption were up over 20 percent in the rest of the world. The result has been a larger world market share for non-U.S. processors.

The gap between production and consumption that emerged in the United States stimulated planting that will add to cling peach supplies over the next 5 years. This same gap, and the growing demand in other countries, motivated expanded production in the rest of the world. The prospect of increased grower prices under the EC's Common Agricultural Policy (CAP) also was a factor in expanded production in Greece and Spain.

Processing Costs

Over time, the relative position of processors is affected by changes in raw product cost, other input costs, subsidies, and variations in exchange rates. Estimated processing costs vary from country to country depending on input costs and how fixed costs and overhead are allocated. Average costs of production in 1988 for a standard case (24/2-1/2 choice 1/2s) are reported in table A-5. These values have changed during 1989 as the dollar exchange rate has fluctuated. No adjustments have been

made to account for differences in accounting practices.

Additionally, not all of the estimates have been checked against an engineering model of peach processing to see if they appear reasonable. Also, there is some question about the accuracy of

reported grades because many choice graded peaches turn out to be in the upper range of good quality.

The cost comparisons tend to support what many have believed, that South Africa is the lowest-cost producer of canned peaches at approximately \$10

Figure A-1

Production and Consumption of Canned Peaches

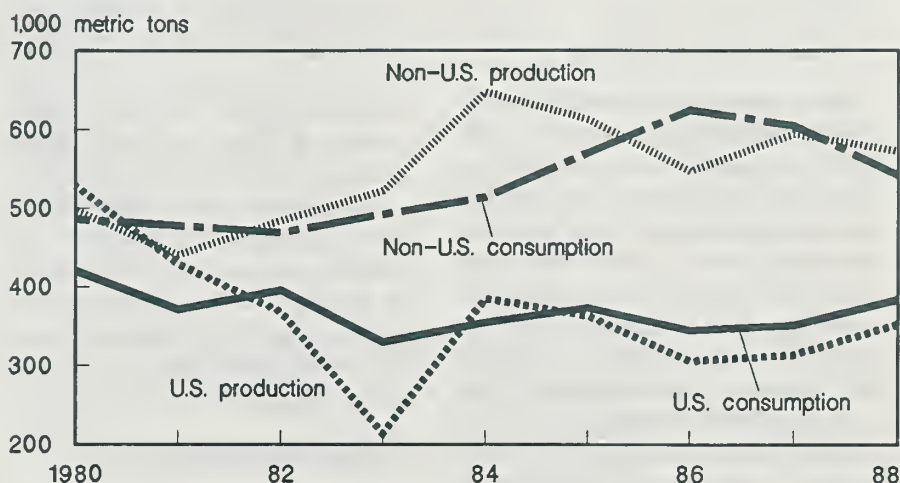


Table A-4--Processing peach prices in selected countries related to the California base price, 1989

Country	Percent of California price	Dollar difference
Chile	67	-80
South Africa	70	-72
Argentina	71	-70
Greece	85	-37
Italy	90	-23
Spain	95	-11
United States	100	0
Australia	109	+21

Table A-5--Estimated net raw product and processing costs for canned peaches, and percent of U.S. cost, 1988

Country	Grower price	Processing	Cost
	Dollars/metric ton	Dollars/standard case 1/	Percent of U.S. cost
Greece	141	11.50	79
South Africa	151	10.00	69
Italy	168	15.50	107
Argentina	170	12.50	86
Spain	175	13.50	93
Chile	191	11.50	79
Australia	219	13.50	93
United States	234	14.50	100

1/ Derived from industry estimates for choice halves of case size 24/2-1/2.

per case (the overhead component in this cost was about 10 percent).

The 1989 EC subsidy to peach processors is lower than in 1988 and is estimated to be about \$2.70 per case in Greece, \$2.84 in Italy, and \$2.53 in Spain. The "sugar price rebate" paid for peaches in heavy syrup that are exported from the EC is worth an added \$1.00 per case. The processing costs in table A-5 include the EC subsidy, but not the sugar rebate.

Economic Relationships

Over the past 2 years, world prices for canned peaches have generally been high in response to lower production. Processors in low-cost countries have maintained lower prices than California processors in many Pacific Rim markets. Their ability to do so represents lower costs in some cases and a willingness not to cover all fixed costs in others. Because of their relatively high cost, California producers are under extreme pressure to differentiate their product in terms of quality, reliability of service, or product form. The objective is to make California products less sensitive to changes in relative prices.

Demand Factors in the Pacific Rim

An analysis of canned peach imports into the Pacific Rim showed that demand is sensitive to changes in relative prices. The price elasticity of demand, a measure of this sensitivity, ranges between -2.5 and -3.4 for imports of U.S. canned peaches. This favors low-cost producers relative to high-cost producers. The drop in California's market share in Japan is evidence of this. Elasticity of import demand for major markets from all sources has not been estimated because of data limitations, but interviews with industry members suggest that import demand is likely to be inelastic. If so, this means that a general rise in prices, such as might occur in 1989 due to higher raw product costs, would reduce total shipments slightly. However, market shares

would shift, favoring producers with lower relative price increases.

Changes in income do not explain changes in peach import volume except in Hong Kong. This indicates that other factors affect demand. These include promotion and changes in consumer preferences not reflected in income. Analysis of price and income relationships could only explain about 55 to 75 percent of the change in imports.

In the United States, import demand for canned peaches is negatively correlated with domestic production of the same marketing year. Although imports increase as domestic prices rise, the relationship between changes in price and changes in import levels is very weak, and probably not significant. The driving force appears to be the need to fill domestic market requirements not being met by U.S. production. A similar situation exists for processed pears and tomato products.

Competition With the EC

The competitive position of the EC on world markets for processed fruits is enhanced through its CAP. The CAP is based on the premise that ensuring a minimum price to growers provides stable use of agricultural resources and a reasonable level of income to growers. The mechanics of the subsidy scheme involve payments to processors to offset their added costs in paying the minimum price to growers. The level of such payments has become an issue because the subsidy paid to processors has more than offset the added costs arising from minimum grower prices and given processors a competitive edge in world markets.

This advantage gave Greece a competitive edge against the United States and Australia and other EC processors even though Greece has higher labor costs. The United States filed a complaint under the General Agreement on Tariffs and Trade (GATT) about the EC subsidy. The EC agreed to calculate its subsidy so processors could pay minimum grower prices and not be given an

advantage in world markets because of the subsidy.

The agreement was revised and strengthened in 1989 in three ways. First, the EC agreed to lower 1989/90 subsidy rates for canned peaches (and pears) so as not to unfairly subsidize processors. Second, the EC and the United States agreed on definitions and methods to be used in measuring compliance with the agreement. Finally, the EC agreed to modify the basic regulation governing subsidies to processors in order to implement the agreement. The United States terminated the trade investigation into this matter once modifications had been made by the EC.

New Canned Fruit Agreement^{2/}

Under the new fruit agreement, the EC agreed to set 1989/90 subsidies so that when converted to local currencies using the politically determined agricultural exchange rate (the so called "green rate"), they will compensate processors for the added cost of paying minimum grower prices, but not otherwise subsidize processing operations. The compensation is to make the cost of peaches and pears to processors no less than the trade weighted average of such fruit prices paid by non-EC processors. The results for the 1989/90 year are outlined in tables A-6, A-7 and A-8.

The minimum grower price for processing peaches and pears in the EC is considerably higher than in California. The new subsidy arrangements more than offset this difference so that the net cost to processors is below that in California, but higher than in South Africa, Chile, and probably Argentina.

The difference in finished product costs for peaches between California and Greece in 1989/90 will be about \$0.74 per case (if other factors do not change); about \$0.46 per case with respect to Italy; and \$0.23 per case against Spain. This represents a significant narrowing

^{2/} The material on EC prices and subsidies was provided by the Foreign Agricultural Service, USDA.

of the cost advantage held by these countries in 1988/89.

Changes in raw product costs due to higher minimum grower prices in the EC will be significant between 1988/89 and 1989/90. Changes in California will be less and California's competitive position should improve if finished product prices adjust to the new input cost levels, and other cost factors don't intervene. Differences in the number of cases per ton from the standard assumed here will also affect cost comparisons.

The differences noted for the EC countries result from changes in the subsidy, the agricultural exchange rate between the European Currency Unit (ECU) and local currencies, and the U.S. dollar exchange rate. The estimated contribution of each factor to differences in peach costs per case are presented in table A-9. While these factors are not the only ones affecting costs, they are the major ones explaining differences between 1989 and 1990.

Total processing costs per case are based on estimates obtained during interviews with industry personnel, engineers, and public agencies during 1989. The estimates for 1989 account only for changes in raw product costs and do not reflect changes in other input costs (table A-10). They indicate that California's cost position relative to the EC improved about 5 to 10 percent as the result of subsidy, green rate, and dollar rate changes in the EC and raw product cost changes in California.

Conclusions

The world supply of peaches for processing is likely to increase about 10 percent over the next 5 years or so. Demand analysis conducted in the Pacific Rim suggests that imports are not related to increases in income and therefore market growth cannot be anticipated on the basis of projected income growth in these countries. Consequently, it is likely that increased supplies will lead to more intense competition for market share.

Table A-6--Peach prices paid by EC processors, 1989/90

Items	Greece	Italy	Spain
Minimum grower price (ECU/T)	287.81	287.81	266.84
Processing subsidy	113.54	113.54	94.81
Net processor cost	174.27	174.27	172.03
ECU "green" rate	179.387	1,690	152.896
Local currency cost	31,262d	294,516L	26,303p
\$ exchange, 1st qtr 89	154d/\$	1,357L/\$	115p/\$
Local cost in \$U.S.	203.00	217.03	228.72
Non-EC wtd. av. (\$/T)	203	203	203

Table A-7--Comparison of processor costs for peaches in the United States and selected countries, 1988/89

Production area	Processor pays to grower	Processor aid from the EC	Net cost to processor per U.S. ton per case 1/	
--U.S. dollars per ton--				
Greece	303	120	183	4.06
Italy	325	128	197	4.34
Spain	322	114	208	4.57
California	218	0	218	4.80

1/ Based on standard conversion of 45 cases per U.S. ton of input.

Table A-8--Changes in raw product costs for peaches in California and selected countries, 1988/89-1989/90

Production area	Raw product cost per case		
	1988/89	1989/90	Difference
--Dollars--			
Greece	2.82	4.06	1.24
Italy	3.35	4.34	.99
Spain	3.49	4.57	1.08
California	4.68	4.80	.12

Table A-9--Difference in raw product costs per case of peaches among EC countries, 1988/89-1989/90

Production area	Estimated value of change in			Total
	EC subsidy	ECU rate	Dollar rate	
Greece	.60	.69	-.04	1.24
Italy	.70	.15	.13	.99
Spain	.78	-.03	.33	1.08

Table A-10--Impact of EC subsidy, ECU rate, and exchange rate on total costs per case of peaches from 1988 to 1989 in California and selected EC countries

Production area	Estimated total cost		Change
	1988	1989	
--Dollars--			
Percent			
Greece	11.50	12.74	10.8
Italy	15.50	16.49	6.4
Spain	13.50	14.58	8.0
California	14.50	14.62	1.0

U.S. processors appear to be at an absolute cost disadvantage relative to other major producer countries. However, the magnitude of this disadvantage varies between countries and over years depending on exchange rates, subsidy policies, and crop conditions. The 1989 agreement with the EC concerning EC

subsidy levels narrows the cost advantage held by EC processors and should result in some increase in the U.S. share of world markets.

The strategies available in dealing with world competition include improvements in quality and service, new prod-

uct development, and strong promotional programs to build preferences for U.S. product. Evidence from interviews in Pacific Rim markets and analysis of data from those markets suggest, but do not prove, that promotional strategies are critical to success in those markets.

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