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# Fruit and Tree Nuts Outlook

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## U.S. Citrus and Strawberry Production Forecast Down This Season, Avocados Up

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The next release is  
May 28, 2010.

Approved by the  
World  
Agricultural  
Outlook Board.

The index of prices received by fruit and tree nut growers was up this January and February over the same time in 2009. Growers received higher prices due to limited supplies from California and Florida. The Consumer Price Index was down less than 1 percent from January and February in 2009. Retail prices for Red Delicious apples and bananas fell due to a big apple crop this season and to increased banana shipments from Central America.

California's navel-orange utilized production forecasted by USDA's National Agricultural Statistics Service (NASS) is 1.5 million tons for the 2009/10 season, a 16 percent increase over 2008/09. Grower prices averaged \$13.04 per box from November 2009 through February 2010, 8 percent lower than the 2008/09 average of \$14.25 per box.

Florida's 2009/10 orange crop is forecast down 19 percent from last season and down 23 percent from two seasons ago. As a result, orange juice production is forecast down 22 percent from last season. The small crop and tight juice supplies has resulted in Florida processing orange grower prices averaging 39 percent higher this season through February over the same period last season.

U.S. grapefruit production is forecast down 13 percent from last season and down 25 percent from two seasons ago. Grower prices for grapefruit have been up this season, both for the fresh market and for processing.

The 2009/10 U.S. lemon crop is forecast down 10 percent from last season, but above the annual average for the last six seasons. Fresh lemon grower prices have averaged \$24.86 per 76-lb box this season, up 21 percent from last season.

Production of tangerines and clementines are forecast up for 2009/10 in all three production States—California, Florida, and Arizona. The bigger crop this season has contributed to grower prices averaging lower than any season since 2003/04.

Avocado consumption will likely increase in 2009/10 as production is anticipated to increase in California, Mexico, and Chile, the major sources for U.S. avocado consumers.

Strawberry supplies were tight this winter due to adverse weather conditions, driving up grower and retail prices.

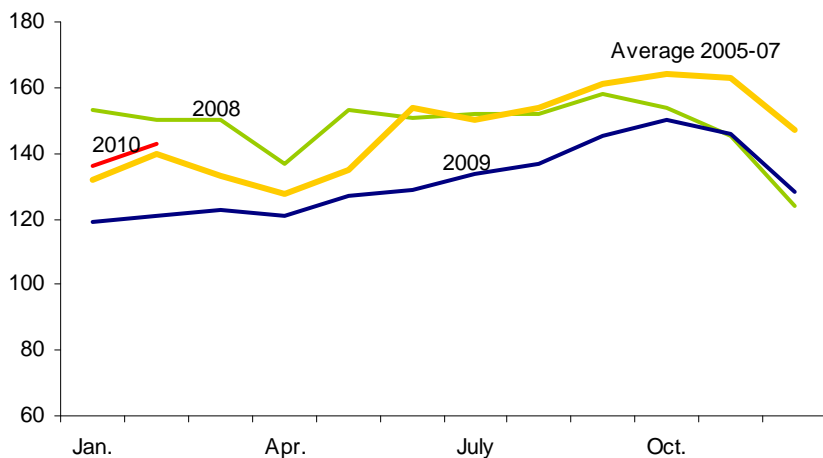
## Price Outlook

### *Fruit and Tree Nut Grower Prices Start Out Strong in 2010*

The index of prices received by fruit and tree nut growers averaged 139.5 (1990-92=100) the first 2 months of 2010, 16 percent higher than the same time in 2009. The January price index of 136 was up 6 percent from December 2009 and the third highest for any January on record (fig. 1). Growers received higher prices this January over December due to limited fruit supplies out of California. Harvesting of many California fruit crops, especially oranges and lemons, slowed in mid-January due to heavy rains and strong winds, reducing marketing supplies. At the same time, freezing temperatures in Florida disrupted the strawberry harvest, tightening strawberry supplies as well for the month. The index rose another 5 percent between January and February to 143 as tight supplies continued through the month.

Growers received higher prices this January and February for all domestically produced fruit that are in the market during the winter months, except for fresh oranges and pears, both of which had bigger crops this marketing season. Strawberry prices almost doubled in January 2010, compared with January 2009, due to the freezing temperatures in Florida and wet weather in California hampering harvesting and marketing. As supplies increased in February, prices dropped to more average amounts (table 1).

Figure 1  
**Index of prices received by growers for fruit and tree nuts**  
1990-92=100



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*.

Table 1--Monthly fruit prices received by U.S. growers

Commodity	2009		2010		2009-10 change	
	January	February	January	February	January	February
	-----Dollars per box-----				Percent	
Citrus fruit: 1/						
Grapefruit, all	4.19	3.74	7.73	6.66	84.5	78.1
Grapefruit, fresh	7.51	7.77	10.19	11.05	35.7	42.2
Lemons, all	5.90	2.62	10.04	8.52	70.2	225.2
Lemons, fresh	14.66	11.55	21.83	22.47	48.9	94.5
Oranges, all	5.74	6.04	6.06	7.07	5.6	17.1
Oranges, fresh	12.53	11.60	10.19	10.59	-18.7	-8.7
	-----Dollars per pound-----					
Noncitrus fruit:						
Apples, fresh 2/	0.272	0.237	0.296	0.296	8.8	24.9
Grapes, fresh 2/	--	--	--	--	--	--
Peaches, fresh 2/	--	--	--	--	--	--
Pears, fresh 2/	0.272	0.237	0.202	0.196	-25.7	-17.3
Strawberries, fresh	1.160	1.280	2.180	1.550	87.9	21.1

1/ Equivalent on-tree price.

2/ Equivalent packinghouse-door returns for CA, NY (apples only), OR (pears only), and WA (apples, peaches, and pears). Prices as sold for other States.

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*.

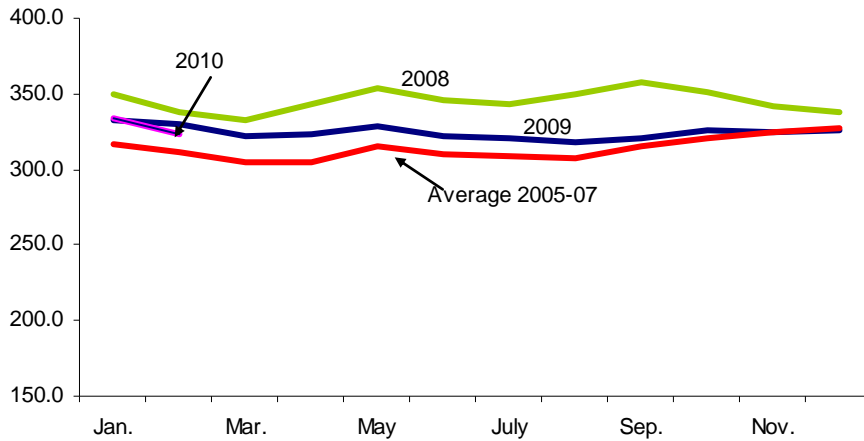
### ***Consumer Price Index for Fresh Fruit Averaging Slightly Lower at the Beginning of 2010***

The Consumer Price Index (CPI) for fresh fruit this January and February averaged 328.7 (1982-84=100), down less than 1 percent from the same 2-month average in 2009. The CPI rose 3 percent between December 2009 and January 2010, after going unchanged between October and December 2009 (fig. 2). The adverse weather conditions that hampered fruit harvesting in California and Florida in January, along with delayed shipments of summer fruit from Chile that compete in the market with citrus fruit and other domestically produced fruit found in the market during the month, helped drive up the CPI. Once harvesting resumed in February, more fruit were available at retail stores and the CPI fell 3 percent from January to 323.1.

Retail prices for Red Delicious apples and bananas fell this January and February relative to the same time last year (table 2). The big 2009/10 apple crop provided for ample supplies in the market, keeping price down from last year. Banana supplies out of Central and South America have picked up from last year, due to increased production over last-year's weather-reduced crop, bringing retail banana prices down to \$0.59 per pound, an average of 7 percent lower than the same time last year.

Smaller shipments of summer fruit from Chile drove up retail prices for fresh Thompson seed grapes in January and February and peach prices in February. Further supply disruptions may occur due to the effects of the late-February earthquake in Chile. This disruption will likely keep prices for these fruit high in March and early April. Much of Chile's fresh fruit are shipped to the United States from November through March. If the earthquake damaged fruit trees and vines, the quake's impacts on fruit availability and prices in the market may be felt in the U.S. market next fall and winter as well as later this March and early April.

Figure 2  
**Consumer price index for fresh fruit**  
 1982-84=100



Source: U.S. Dept. of Labor, Bureau of Labor Statistics, (<http://www.bls.gov/data/home.htm>).

Table 2--U.S. monthly retail prices, selected fruit, 2008-09

Commodity	Unit	2009		2010		2009-10 change	
		January	February	January	February	January	February
		--- Dollars ---		--- Dollars ---		--- Percent ---	
<b>Fresh:</b>							
Valencia oranges	Lb.	--	--	--	--	--	--
Navel oranges	Lb.	0.896	0.912	0.899	0.870	0.3	-4.6
Grapefruit	Lb.	0.794	0.750	0.841	0.832	5.9	10.9
Lemons	Lb.	1.541	1.433	1.626	1.586	5.5	10.7
Red Delicious apples	Lb.	1.233	1.191	1.141	1.153	-7.5	-3.2
Bananas	Lb.	0.629	0.641	0.586	0.587	-6.8	-8.4
Peaches	Lb.	--	1.719	--	1.976	--	--
Anjou pears	Lb.	1.261	1.297	1.264	1.226	--	--
Strawberries 1/	12-oz. pint	2.613	2.447	2.854	2.700	9.2	10.3
Thompson seedless grapes	Lb.	2.169	1.987	3.070	2.236	41.5	12.5
<b>Processed:</b>							
Orange juice, concentrate 2/	16-fl. oz.	2.570	2.611	2.501	2.481	-2.7	-5.0
Wine	liter	8.627	10.578	8.564	11.331	-0.7	7.1

-- Insufficient marketing to establish price.

1/ Dry pint.

2/ Data converted from 12-fluid-ounce containers.

Source: U.S. Dept. of Labor, Bureau of Labor Statistics (<http://www.bls.gov/data/home.htm>).

### *U.S. Citrus Production Down From Previous Two Seasons*

In March, USDA's National Agricultural Statistics Service (NASS) forecast the 2009/10 U.S. citrus crop at 10.7 million tons, 11 percent smaller than last season (table 3). If realized, it would be the smallest crop since 2006/07 and the second smallest crop since 1989/90. Adverse weather conditions and declining bearing acreage in Florida contributed to the overall decline in production, indicating reduced availability of oranges for juice and of grapefruit. Production is expected to be up from California, good news for fresh orange supplies, and from Texas. U.S. production of tangerines and mandarins is forecast up from both California and Florida.

### *California's Orange Crop Up in 2009/10*

California's navel orange utilized production forecasted by NASS is 1.5 million tons for the 2009/10 season, a 16-percent increase over 2008/09. Growers delayed the start of the harvest to improve fruit color so the 2009/10 harvest began a little later in November than usual.

The limited supplies for the month helped boost the average grower price to \$17.76 per 75-lb box, the highest November price in at least the last 30 years (table 4). The price was 9 percent above the November 2008/09 price of \$16.20 per box. Since the season has been underway, the price has dropped to \$10.86 per box in February 2010, 16 percent lower than last February's price of \$13.04 per box. The overall average price for November 2009 through February 2010 was \$13.04 per box, 8 percent lower than the 2008/09 average of \$14.25 per box.

Cold and wet weather through the winter months caused fruit quality concerns among California growers but these never materialized. The navel crop has been reported as excellent this season by industry sources with 86 percent fresh utilization by early March. Data from USDA's Agricultural Marketing Service (AMS) show total shipments this season through March 13, 2010 were 91,640 tons, more than double last season's shipments of 43,820 tons for the same time period.

NASS' California Field Office released its *2009/10 California Valencia Orange Objective Measurement Report* earlier this month. The report showed a decrease in the State's Valencia orange bearing acreage by 2,000 acres to 43,000 acres while average trees per acre remained the same as the 2008/09 season at 124. The average number of fruit per tree this season measured 704 which is the highest fruit set since the 2004/05 season. The higher fruit set has increased the overall forecast for the Valencia crop to 637,500 tons, 13 percent above the forecast NASS released in January of 562,500 tons. If realized, this would be 21 percent above last year's total crop.

Table 3--Citrus: Utilized production, 2007/08, 2008/09 and forecast for 2009/10 1/

Crop and state	Forecast for			Forecast for		
	Utilized	2009/10	Utilized	2009/10	Utilized	2009/10
	2007/08	2008/09	as of 3-2010	2007/08	2008/09	as of 3-2010
	---- 1,000 boxes 2/ ----			---- 1,000 tons ----		
<b>Oranges:</b>						
Early/mid-season and navel:						
Arizona 3/	230	150		9	5	
California	45,000	34,500	40,000	1,688	1,294	1,500
Florida 4/	83,500	84,600	68,000	3,758	3,807	3,060
Texas	1,600	1,300	1,310	68	55	56
Total	130,330	120,550	109,310	5,523	5,161	4,616
Valencia:						
Arizona 3/	150	100		6	4	
California	17,000	14,000	17,000	637	525	638
Florida	86,700	77,800	63,000	3,901	3,501	2,835
Texas	196	159	277	9	7	12
Total	104,046	92,059	80,277	4,553	4,037	3,485
All oranges	234,376	212,609	189,587	10,076	9,198	8,101
<b>Grapefruit:</b>						
Arizona 3/	100	25		3	1	
California	5,200	5,600	4,200	174	188	141
Florida	26,600	21,700	18,800	1,131	922	799
Texas	6,000	5,500	5,490	240	220	220
All grapefruit	37,900	32,825	28,490	1,548	1,331	1,160
<b>Tangerines and mandarins:</b>						
Arizona	400	250	350	15	9	13
California	6,700	6,700	8,200	251	251	308
Florida	5,500	3,850	4,000	261	183	190
All tangerines and mand:	12,600	10,800	12,550	527	443	511
<b>Lemons:</b>						
Arizona	1,500	3,000	2,500	57	114	95
California	14,800	22,000	20,000	562	836	760
All lemons	16,300	25,000	22,500	619	950	855
<b>Tangelos</b>						
Florida	1,500	1,150	900	68	52	41
All citrus	302,676	282,384	254,027	12,838	11,974	10,668

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest following year.

2/ Net pounds per box: oranges-Arizona (AZ) and California (CA)-75, Florida (FL)-90, Texas (TX)-85; grapefruit-AZ and CA-67, FL-85, TX-80; lemons-76; tangelos -90; tangerines-AZ and CA-75, FL-95.

3/ Arizona estimates discontinued beginning with the 2009/10 crop. 4/ Includes Temples.

Source: USDA, National Agricultural Statistics Service, *Crop Production*, various issues.

Table 4--Fresh oranges: Average equivalent on-tree prices received by California growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
---Dollars/75-lb box---						
November	13.00	13.00	9.49	15.27	16.20	17.76
December	10.40	10.60	12.39	10.98	13.37	13.06
January	9.50	9.10	12.39	9.48	14.37	10.46
February	8.95	9.11	24.68	8.28	13.04	10.86
March	9.34	9.20	22.71	8.40	12.79	
April	10.47	11.30	22.74	7.61	10.25	
May	10.63	12.55	21.98	9.28	11.41	
June	9.02	12.99	18.03	11.01	12.23	
July	7.24	12.94	16.83	7.72	10.51	
August	6.84	14.84	14.63	7.72	10.61	
September	8.14	22.04	12.83	10.22	16.21	
October	7.84	14.49	14.74	10.12	16.51	
Nov.-Feb. Average	10.46	10.45	14.74	11.00	14.25	13.04

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

Total fresh orange exports from November through January 2009/10 were 113,522 tons, a 31 percent increase from 86,755 tons in 2008/09. The increase in exports this season, however, was still 37 percent lower than the same time in 2007/08, when exports totaled 155,697 tons. Canada is the No. 1 export market for U.S. fresh oranges, with shipments of 61,526 tons in 2009/10, followed by Hong Kong with 18,158 tons, and Japan with 8,396 tons.

Total fresh orange imports, through this period, were 9,696 tons, which was more than three times the quantity imported in 2008/09 of 2,628 tons, and double 2007/08 imports of 4,721 tons. Fresh orange imports for the 2009/10 season originated mainly from Mexico and the Dominican Republic. Mexican fresh orange imports totaled 8,980 tons, more than triple the 2008/09 November through January imports of 2,273 tons. The Dominican Republic shipped 608 tons to the United States, over two-and a half times the previous season's 238 tons, and 41 percent higher than the 356 tons in 2007/08.

### ***Florida's Orange Crop Forecast Down, Helping Bolster Grower Prices***

NASS forecast Florida's 2009/10 orange crop at 5.9 million tons, down 19 percent from last season and down 23 percent from two seasons ago. The harvest is comprised of 3 million tons of early- to mid season and navel oranges, 20 percent less than last season, and 2.8 million tons of Valencia oranges, 19 percent less than last season. If realized, it would be the second smallest crop since 1989/90.

Adverse weather conditions in 2009 and early 2010 were contributing factors to the forecast smaller crop this season. Florida experienced drought conditions around the time of this crop's bloom and fruit set along with other adverse weather conditions in the spring of 2009. This January, Florida experienced further damaging weather conditions with several days of very cold weather including below-freezing temperatures that were sufficient to damage its orange crop, lowering the forecast down from the October forecast. Several days of persistently cold temperatures occurred before temperatures fell into the 20-degree F range (the

temperature range that is dangerous to both the crop on the tree and the trees themselves) for a few nights. The cold days actually helped prevent greater damage than might have happened if these low temperatures occurred suddenly. By experiencing several days of very cold temperatures, the citrus trees were able to acclimate to the cold and the damage was limited mostly to just the fruit on the trees. Extensive damage to the trees that would affect crop production in the coming seasons was prevented. Florida's orange growers were further able to reduce crop loss by quickly harvesting and shipping their fruit to processors, the major market for their fruit, before extensive quality loss to the fruit. The State also provided assistance to growers by temporarily lifting certain transportation restrictions, allowing growers to quickly move their fruit from grove to processor. As a result of this quick action, more fruit were harvested and processed than NASS expected when it made its forecast for Florida oranges in February, accounting for NASS' revised forecast this month up 3 percent from the February forecast.

As a result of the expected smaller orange crop from Florida this season, USDA's Economic Research Service (ERS) forecast orange juice production at only 830 million gallons, single-strength equivalent, down 22 percent from last season and the lowest quantity since 1989/90, when low production was a result of the second consecutive season of back-to-back freezes (table 5). Big beginning juice stocks and expected increases in orange juice imports, puts the forecast for orange juice supplies this season at 1.9 billion gallons, down 13 percent from last season, but down only 2 percent from two seasons ago and up 8 percent from 2006/07. The Florida Department of Citrus is reporting that orange juice movement, both for frozen-concentrated orange juice (FCOJ) and not-from-concentrate orange juice (NFC) has been sluggish this season relative to last season which had seen a boost in orange juice demand. As a result, domestic consumption is forecast to average 4.04 gallons per person this season, down 10 percent from last season, but still higher than two seasons ago.

Retail sales of NFC orange juice had been slightly higher in October through January than the same time last season, before falling sharply in February (fig. 3). In February, snowstorms throughout the Mid-Atlantic and Northeast regions of the country curtailed shoppers, generally lowering most retail sales throughout the regions, with orange juice as one of the many items that likely experienced a decline in sales for the month. These two regions are among the strongest orange juice consumers in the country and their declined sales for the month was a big factor in the overall drop in NFC orange juice sales of 1.4 million sse gallon between January and February.

The price for a gallon of NFC orange juice averaged \$6.44 October 2009 through February 2010, down 3 percent from the same time last season, when the average price was \$6.66 per gallon. The lower retail price for orange juice during this period helped contribute to increased retail sales for this time period. Other factors that are also believed to have contributed to increased sales early in the season included: colder-than-average temperatures this winter; and consumers purchasing products, like orange juice, with their high levels of vitamin C believed to help the immune system, in response to the presence of H1N1 flu. March may possibly bring stronger sales than in February as weather conditions have returned to normal and the domestic economy has been improving.



Table 5 --United States: Orange juice supply and utilization, 1986/87 to present

Season 1/	Beginning		Imports	Supply	Exports	Domestic consumption	Ending stocks	Per capita consumption
	stocks	Production						
-----Million sse gallons 2/-----								Gallons
1986/87	204	781	396	1,381	73	1,106	201	4.57
1987/88	201	907	296	1,404	90	1,103	212	4.52
1988/89	212	970	272	1,454	73	1,148	233	4.66
1989/90	233	652	350	1,235	90	920	225	3.70
1990/91	225	876	320	1,422	94	1,170	158	4.65
1991/92	158	930	286	1,374	107	1,096	170	4.30
1992/93	170	1,207	324	1,701	114	1,337	249	5.18
1993/94	249	1,133	405	1,787	107	1,320	360	5.04
1994/95	360	1,257	198	1,815	117	1,264	434	4.77
1995/96	434	1,271	261	1,967	119	1,431	417	5.34
1996/97	417	1,437	256	2,110	148	1,398	564	5.16
1997/98	564	1,555	281	2,400	150	1,571	679	5.73
1998/99	679	1,236	350	2,265	147	1,585	534	5.71
1999/2000	534	1,493	339	2,366	146	1,575	645	5.60
2000/01	645	1,389	258	2,292	123	1,471	698	5.18
2001/02	698	1,435	189	2,322	181	1,448	692	5.05
2002/03	692	1,250	291	2,233	103	1,426	705	4.93
2003/04	705	1,467	222	2,393	123	1,448	822	4.96
2004/05	822	974	358	2,153	119	1,411	623	4.79
2005/06	623	986	299	1,909	138	1,312	459	4.41
2006/07	459	889	399	1,747	123	1,248	376	4.16
2007/08	376	1,152	406	1,934	136	1,002	795	3.31
2008/09	795	1,060	317	2,173	125	1,367	681	4.47
2009/10 f/	681	830	375	1,887	118	1,249	520	4.04

f = forecast.

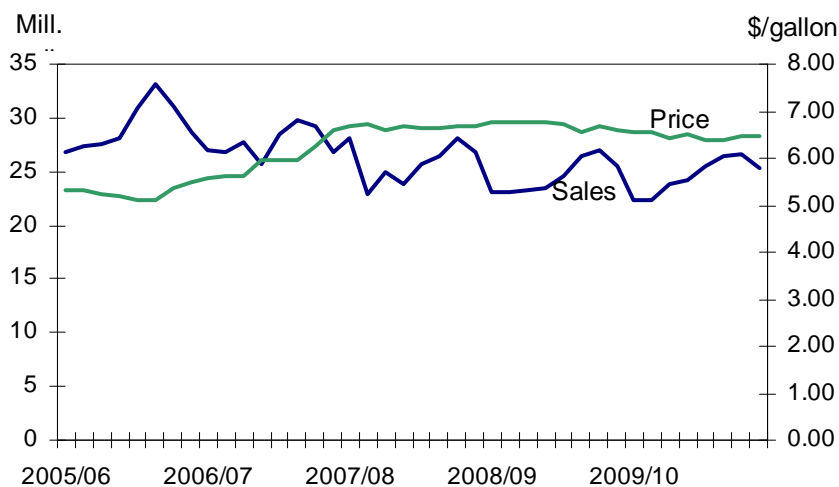
1/ Season begins in October of the first year shown as of 1998/99, prior year season begins in December.

2/ SSE = single-strength equivalent.

Source: Prepared and calculated by USDA, Economic Research Service.

Figure 3

**Retails sales of NFC orange juice, July-February 2005/06-2009/10**



Source: Florida Department of Citrus, www.fdocgrower.com.

Florida's processing orange grower prices averaged 39 percent higher this October through February over the same period last season (table 6). This season's harvest started later than normal as growers waiting for their fruit to reach maturity before picking. Once harvesting got underway in November, growers received an average price of \$4.35 per 90-lb box. Prices improved monthly, reaching an average of \$6.00 per box in February. Although monthly prices have been generally running above last season, they have been below those received the previous two seasons (2006/07 and 2007/08). Prices for oranges for processing were higher than average in 2006/07 as processors were willing to pay high prices due to the small crop and lower than normal beginning stocks. In 2007/08, the crop size had returned to normal but demand for oranges for processing was strong because beginning stocks were at the lowest level they had been in over a dozen years. Excluding these two seasons, Florida growers are seeing good returns for their crop this season. With the rising costs of producing oranges in Florida, due to increased costs associated with disease prevention and extra irrigation this season during the drought and freezes, growers need these higher returns to stay viable. Despite the higher returns, the value of this season's crop is likely to be down from last season due to the smaller crop.

### ***Grapefruit Production Declines for Third Straight Season***

U.S. grapefruit production is forecast at 1.2 million tons this season, down 13 percent from last season and down 25 percent from two seasons ago. If realized it will be the lowest production since the hurricane-damaged crop of 2004/05 and the third straight season of declining production. Production in Florida, which accounts for almost 70 percent of the total domestic crop, is expected to be down 13 percent from last season. Texas' crop is forecast to be the same size as last season's and California's crop is forecast down 13 percent.

According to data from the Florida Citrus Administrative Committee (FCAC), fresh grapefruit utilization this season through mid-March was down 5 percent from last season. So far this season, however, the share of grapefruit going to the fresh market is higher than the previous two seasons, indicating strong demand for fresh grapefruit. Strong demand, along with the smaller crop, has helped drive up grower prices which have averaged \$11.80 per box this season through February, up 33 percent from last season and the highest since the hurricane-reduced crops of 2004/05 and 2005/06 (table 7).

Although total shipments, domestic and exports, were down this season compared with last, shipments to Canada, the second biggest export market, were at their highest through January 2010 in seven seasons. Demand has also been up from the Netherlands, but was down from the No. 1 export market, Japan.

Utilization of grapefruit for processing was down this season through mid-March relative to the past two seasons, according to FCAC data. While the smaller crop is part of the reason, another major factor was the large shipments of oranges to the processors after the freezing temperatures, reducing their capacity for grapefruit-juice processing. As the orange juice processing winds down, demand for the remaining grapefruit should be strong, as processors try to build up grapefruit juice supplies.

Table 6--Processing oranges: Average equivalent on-tree prices received by Florida growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
---Dollars/90-lb box---						
October	--	0.40	4.25	--	0.35	--
November	2.04	3.23	7.45	5.16	3.88	4.35
December	2.32	3.94	8.05	5.47	4.40	4.40
January	2.52	4.33	8.55	5.81	4.64	5.40
February	2.71	5.24	9.25	6.10	4.83	6.00
March	3.59	6.04	11.15	6.95	5.87	
April	4.27	6.31	11.45	7.32	6.25	
May	4.37	6.52	11.85	7.39	6.30	
June	4.26	6.73	12.15	7.17	6.65	
Oct.-Feb. Average	2.40	3.43	7.51	5.64	3.62	5.04

-- = Not available.

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

Table 7--Fresh grapefruit: Average equivalent on-tree prices received by U.S. growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
-----Dollars per box-----						
October	16.05	16.90	15.15	13.16	12.29	15.28
November	19.93	14.66	12.41	14.01	8.53	12.50
December	18.87	14.37	11.89	11.16	8.24	10.00
January	19.41	15.29	9.95	9.35	7.51	10.19
February	18.93	13.89	8.27	8.26	7.77	11.05
March	18.32	12.60	7.77	7.66	8.28	
April	18.91	12.11	8.08	8.53	8.65	
May	17.78	15.13	10.54	9.44	7.81	
Oct.-Feb. Average	18.64	15.02	11.53	11.19	8.87	11.80

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

With fewer fruit being sent to processing, ERS forecasts 2009/10 grapefruit juice production at 77 million sse gallons, down 7 percent from last season, and the lowest since 2004/05, when the crop was decimated by hurricanes (table 8). With beginning stocks at their lowest in 3 years, total supplies are forecast at 127 million sse gallons. U.S. per capita grapefruit juice consumption is forecast to fall about 10 percent this season from last, with reported reduced juice movement by the Florida Department of Citrus.

Grower prices for Florida's processing grapefruit have been improving as the season progresses, reaching a high of \$2.81 per 85-lb box in February (table 9). Prices so far this season, October 2009 through February 2010, averaged \$0.78 per box, the highest in three seasons. As the season winds down, demand for grapefruit for processing should increase, likely increasing prices in March and April. In response to tight juice supplies this season and higher prices paid to growers for their fruit, retail prices for not-from concentrate grapefruit juice rose in January and February. Continued higher retail prices may affect consumer demand for grapefruit juice through the remainder of this season.

Table 8--Grapefruit juice: Supply and utilization 1991/92-2009/10

Year 1/	Supply				Utilization			
	Production	Imports	Beginning stocks	Total	Ending stocks	Exports	Consumption	
	----- Million sse gallons 1/-----				1/-----		Gallons	
1991/92	120	4	42	165	39	23	104	0.40
1992/93	186	2	39	227	70	22	134	0.52
1993/94	169	1	70	240	59	17	163	0.62
1994/95	191	1	59	251	72	22	157	0.59
1995/96	171	1	72	244	66	27	151	0.56
1996/97	192	0	66	258	86	21	151	0.55
1997/98	166	0	86	252	68	18	167	0.60
1998/99	171	1	68	240	54	24	161	0.58
1999/2000	203	5	54	263	82	33	148	0.52
2000/01	183	1	82	266	75	39	152	0.53
2001/02	179	0	75	255	84	36	135	0.47
2002/03	140	0	84	224	72	38	114	0.39
2003/04	147	0	72	219	65	42	111	0.38
2004/05	49	11	65	126	35	24	67	0.22
2005/06	80	6	35	121	42	19	60	0.20
2006/07	121	1	42	164	58	20	86	0.29
2007/08	111	0	58	169	60	16	94	0.31
2008/09	84	1	60	144	48	16	80	0.26
2009/10 f/	77	2	48	127	38	17	73	0.24

1/single-strength equivalent. f = forecast.

Source: Prepared by USDA, Economic Research Service.

Table 9--Processing grapefruit: Average equivalent on-tree prices received by Florida growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
	---Dollars per 85-lb box---					
October	3.88	1.90	1.70	--	-2.15	-2.50
November	4.14	3.03	0.47	-0.20	-0.14	-0.53
December	5.01	3.69	1.32	-0.08	-0.05	1.71
January	5.57	4.77	1.32	0.43	0.07	2.41
February	5.77	5.17	1.24	0.79	0.18	2.81
March	5.24	4.61	1.00	0.81	0.33	
April	4.39	4.04	0.81	0.75	0.37	
May	4.24	3.23	-0.03	0.69	--	
Oct.-Feb. Average	4.87	3.71	1.21	0.24	-0.42	0.78

-- = Not available.

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

### ***Smaller U.S. Lemon Crop in 2009/10 Strengthens Grower Prices***

The 2009/10 U.S. lemon crop is forecast at 855,000 tons, down 10 percent from last season, but above the annual average for the last six seasons of 836,000 tons. California's crop, which comprises 89 percent of the total, is forecast down 9 percent, Arizona's crop is forecast down 17 percent.

AMS shipment data showed seasonal lemon shipments through mid-March down about 9 percent from last season. Partially to compensate for lower domestic supplies, imports have been up this season. Trade data, available through the U.S. Census Bureau through January, showed imports up 10 percent over the same time

last season. In August, the beginning of the 2009/10 lemon season, imports were lower than the previous two seasons, as fruit from last season's big crop were still in the marketplace. By September, however, imports began increasing, coming from both Chile, which was finishing up its lemon season, and from Mexico, which begins its harvest about the same time as in the United States. By October, Mexico became the major source outside the United States for lemons in the U.S. market. While monthly shipments from Mexico have been higher since October than last season, they were considerably lower than two seasons ago when freezing temperatures damaged the U.S. lemon crop, reducing the quantity of U.S. supplies for fresh market.

Fresh lemon exports, August 2009 through January 2010, were down for the second consecutive season through this period. Japan is the biggest export market for U.S. lemons. Since Japan is still dealing with a weakened economy, their shipments of U.S. lemons increased only slightly from last season. Shipments to Canada fell 10 percent during this time period. The highlights for the industry in the international market this season included the fast growing China market, and the relatively new markets for U.S. lemons in the United Arab Emirates and Chile.

Fresh lemon grower prices have averaged \$24.86 per 76-lb box this season, August 2009 through February 2010, ranging from a high of \$27.88 in October to a low of \$21.83 in January (table 10). Prices started out lower at the beginning of the 2009/10 season compared with the previous three seasons due to the overlap between the end of the 2008/09 lemon crop and the new-season crop. As the new season progressed and only this season's lemons were in the market, prices rose in September and October, before falling seasonally during the winter months.

Table 10--Fresh lemons: Average equivalent on-tree prices received by U.S. growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
--Dollars per 76-lb box--						
August	20.31	15.72	27.01	43.40	35.58	26.16
September	19.73	13.41	31.37	46.10	28.14	27.46
October	17.87	12.06	34.03	47.98	20.69	27.88
November	16.39	12.35	26.55	48.00	18.72	25.42
December	16.53	12.33	18.31	42.66	14.54	22.79
January	16.33	10.99	16.24	45.50	14.66	21.83
February	15.40	13.47	37.31	47.10	11.55	22.47
March	15.00	16.00	37.71	45.90	8.65	
April	17.71	23.82	36.71	43.20	8.78	
May	26.71	28.02	36.11	44.40	11.18	
June	21.31	27.62	38.21	45.90	17.98	
July	20.51	26.22	40.91	43.00	22.98	
Aug.-Feb. Average	17.51	12.90	27.26	45.82	20.55	24.86

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

### ***U.S. Tangerine/Clementine Crop Forecast Up in 2009/10***

Production of tangerines and clementines are forecast up for 2009/10 in all three production States—California, Florida, and Arizona. California is now the leading producer, with more of its acreage planted to easy-peeler varieties, coming into production each season. NASS forecasts California will produce 308,000 tons of clementines and mandarins in 2009/10, the biggest amount ever. Florida, formerly the major specialty citrus producer in the United States, is forecast to produce 190,000 tons of tangerines, up 4 percent from last season, but down 27 percent from 2007/08.

The bigger crop this season has contributed to grower prices averaging lower than any season since 2003/04. Grower prices started low in October, the first month of the new season, at \$10 per box, 45 percent lower than October 2008 (table 11). Prices then increased, reaching a high of \$19.09 per box in January, slightly higher than the previous January and above the average of the preceding five Januarys. Marketing of Florida's early-variety tangerine was completed by the end of February, but Honey tangerines were still in the market, as were the later-variety clementines out of California.

### ***Ample Tree Nut Supplies Moderated Terminal Market Prices***

Large beginning stocks for walnuts at the start of the 2009/10 season brought down terminal market prices for October through December from the same months last season (table 12). Prices began stabilizing in January, with the low end of the range at \$1.50 per pound in January, the same as last season and the high end of the price range at \$2.00 per pound, lower than last season, January through March.

The pecan crop was big this season, as a result of the trees being in an "on cycle" of production. This contributed to lower prices at the terminal markets this season compared with last season. Prices, this season, however, have been stronger than in 2007/08, the last "on cycle" for pecan trees.

Almond supplies are also plentiful this season. Although almond production is forecast down for 2009, large beginning stocks have resulted in almond supplies being the second-highest on record after the 2008/09 season. Domestic shipments during the early months of the new season were up from last season, but slower than later months. That, along with the industry working to reduce the stock from the previous season, resulted in terminal market prices with a low range of \$0.95 per pound during the early months of the new season. There were, however, also some sales at the high end of the range at \$2.40 per pound, but these sales were very light, with most sales falling in between these two prices.

Terminal market prices for pistachio nuts began the season with prices averaging lower than the previous three seasons, with a range of \$1.76-\$4.20 per pound. The low end of the price range doubled in January to \$3.89 per pound with the upper range remaining at \$4.20 per pound. Strong domestic demand this season through February has helped boost prices at the lower end.

Table 11--Fresh tangerines and mandarins: Average equivalent on-tree prices received by U.S. growers, 2004/05-2009/10

Month	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
--Dollars per box 1/--						
October	15.90	20.12	16.67	15.65	18.14	10.00
November	16.46	19.78	21.69	23.88	22.75	15.63
December	16.40	17.18	21.77	21.21	15.58	15.38
January	17.12	15.85	19.58	21.18	18.92	19.09
February	15.82	13.79	18.29	19.52	24.03	12.79
March	16.15	11.78	17.58	20.39	19.24	
April	19.79	11.25	21.02	17.45	22.26	
May	16.00	8.57	20.50	6.65	--	
Oct.-Feb. Average	16.34	17.34	19.60	20.29	19.88	14.58

1/ The net weight of a tangerine box for Florida: 95 pounds, for Arizona and California: 75 pounds.

Source: USDA, National Agricultural Statistics Service, Agricultural Prices, various issues.

Table 12--Average monthly terminal market inshell tree nut prices, 2006-2010

Month	Almonds					Pecans				
	Peerless					Various varieties				
	2006	2007	2008	2009	2010	2006	2007	2008	2009	2010
-----Dollars per pound-----										
January	1.52-2.24	1.48-1.60	1.30-1.50	1.08-1.76	1.10-2.34	1.00-2.60	2.20-3.00	1.20-2.90	1.50-3.00	1.20-3.04
February	1.36-1.56	1.50-1.60	1.30-1.40	1.10-1.50	1.20-1.30	1.80-1.94	2.20-3.00	1.30-1.80	2.10-2.60	1.90-2.00
March 1/	1.48	1.50-1.60	1.30-1.40	1.10-1.30	1.20-1.30	1.20-2.00	2.20	1.40-1.80	2.10	1.90-2.00
April	1.48	1.50-1.60	1.30-1.40	1.20-1.30		1.20-2.00	2.20	1.40-1.80	2.10	
May	1.48	1.50-1.60	1.30	1.20-1.30		1.90-2.40	2.20-2.70	1.40-1.80	2.10	
June	1.48	1.50-1.60	1.30	1.20-1.30		2.40	2.60-2.70	1.40-1.80	2.10	
July	1.48-1.72	1.50	1.30	1.20-1.30		2.40-2.44	2.60	1.40-1.80	2.10	
August	1.60-1.72	1.40-1.50	1.30	1.20-1.30		2.44	--	1.40-1.80	2.10	
September	1.60-1.72	1.30-1.40	1.30	1.20-1.30		2.44	--	2.80	2.10	
October	1.12-1.75	0.94-1.97	1.24-1.94	0.95-2.40		2.30-3.0	1.40-2.96	2.20-3.00	1.90-2.72	
November	1.12-2.33	0.94-1.98	0.93-1.76	0.95-2.40		1.75-3.12	1.30-3.34	1.61-3.05	1.44-2.72	
December	1.12-1.78	1.00-2.15	1.02-1.72	0.95-2.34		1.75-3.12	1.30-3.34	1.60-3.05	1.20-3.04	
-----Dollars per pound-----										
Walnuts										
Mostly Hartley										
-----Dollars per pound-----										
January	0.76-1.83	1.00-2.13	1.40-2.42	1.50-2.60	1.50-2.00	3.40-4.40	3.44-3.61	2.88-3.44	2.44-4.40	3.89-4.20
February	1.26-1.52	1.00-1.73	1.90-2.38	1.50-2.25	1.70-2.00	3.52-3.61	3.44-3.61	3.20-3.44	3.00-4.40	3.89-4.20
March 1/	1.30-1.32	1.40-1.50	2.20-2.38	1.50-2.25	1.80-2.00	3.52-3.61	3.44-3.68	3.20-3.44	4.00-4.40	3.89-4.20
April	1.30-1.32	1.44-1.50	2.20-2.38	1.50-2.25		3.52-3.61	3.44-3.68	3.20-3.44	4.00-4.20	
May	1.30-1.32	1.44-1.50	2.20-2.38	1.50-2.00		3.52-3.61	3.20-3.61	3.20-3.44	4.00-4.20	
June	1.30-1.32	1.44-1.60	2.30-2.33	1.60-2.00		3.52-3.61	3.20-3.61	3.20-3.44	4.00-4.20	
July	1.26-1.32	1.60-1.70	2.30-2.33	1.60-2.00		3.04-3.61	3.20-3.61	3.20-3.44	4.00-4.20	
August	1.26-1.30	1.60	2.60-2.50	1.60-2.00		3.04-3.61	3.20-3.61	3.20-3.44	3.89-4.20	
September	1.26-1.44	--	2.60	1.60-2.00		3.04-3.61	2.88-3.61	3.20-3.33	3.89-4.20	
October	1.06-3.50	1.40-2.70	1.64-4.50	1.32-2.33		3.16-5.07	2.88-3.44	2.44-4.40	1.76-4.20	
November	1.06-3.50	1.40-2.70	1.52-2.60	1.32-2.33		3.16-5.50	2.88-3.44	2.24-4.40	1.76-4.20	
December	1.06-3.25	1.40-4.50	1.52-2.69	0.99-2.33		3.60-5.50	2.88-5.22	2.24-5.67	1.76-4.20	

-- = Not available. 1/ March 2010 data are through March 6.

Source: USDA, Agricultural Marketing Service.

## U.S. Avocado Consumption To Top Last Year's Record-High

In the growing U.S. fresh fruit market, domestic per capita consumption of avocados increased an average 10 percent annually over the past 10 marketing seasons (1999/2000-2008/09), the second-fastest growth rate after blueberries.

Only in two of those past 10 seasons did domestic per capita avocado consumption decline—in 2002/03 when domestic production declined 20 percent and in 2007/08 when sharply higher export shipments competed with domestic shipments for available supplies (table 13). Domestic avocado production in 2008/09 declined to its lowest level since 1979/80, yet per capita consumption rose to a record 3.8 pounds per person, mainly with imports of Mexican avocados driving the supply growth. Consumption will likely continue to grow in 2009/10 as anticipated production increases in all three of the United States' major sources for avocados—California, Mexico, and Chile—is projected to boost domestic supplies up to a record 1.2 billion pounds. Even with a strong export market, this level of supplies should be sufficient to meet the demand growth in the domestic market. ERS is projecting 2009/10 consumption to reach the 4.0 pounds per person mark, surpassing the record high last season by 7 percent.

Based on a crop projection estimate from the California Avocado Commission, avocado production in California for the 2009/10 marketing season is expected to more than double the very small crop size in 2008/09, and be the largest crop since 1992/93. About 90 percent of U.S. avocado production is from California and therefore the expected rebound in their production will be reflected in the overall U.S. avocado crop. ERS projects 2009/10 U.S. avocado production to increase from 232 million pounds last season to a 5-year high of around 473 million pounds. California avocado groves showed very little wind damage and pest problems this growing season, signaling potential for a very good quality crop. However, fruit were slow to size, especially those in the southern growing region, forcing a delayed start to this season's shipments. Normally, fruit from southern California groves start showing up in the market around late January or February. For this season, California avocado supplies began to increase to promotable levels in March, thanks to the heavy rains in January and February which aided in the sizing of fruit.

Although California and Florida shipments were down early this winter, increased imports from Mexico and Chile provided sufficient volume for retailers during those months, keeping prices to consumers down from the same time last year, according to AMS data. January-February Hass avocado retail prices averaged \$1.02 each, from \$1.14 the same time last year. While Chile's shipping season has finished, continued increased volume expected from California and Mexico through the spring and summer will continue to put downward pressure on prices relative to last year in the coming months. California's northern growing region, typically shipping avocados beginning around May or June, reportedly had a lot of fruit on trees, so growers were forced to harvest some early to prevent an oversupply in the spring and early summer and also to help the remaining fruit gain size. Achieving both these situations would keep prices from slipping further in the coming months. Meanwhile, Florida avocado shipments have wound down for the season, with supplies down 17 percent from a year ago, based on AMS data.

The expected big 2009/10 crop in California should mean there will be increased availability for the export market. There are at least 40 countries around the world that serve as export markets for U.S. avocados. Canada receives the bulk of the volume and South Korea is also an important market. U.S. avocados continue to face growing competition in their key export markets, especially with major producers—Mexico and Chile. Over the last 10 years, U.S. exports ranged from 3



Table 13--Fresh avocados: Supply and utilization, 1980/81 to date

Season 1/	Supply			Utilization			
	Utilized production	Imports 2/	Total supply	Exports 2/	Consumption		
					Total	Per capita	
	-- Million pounds --						Pounds
1980/81	527.6	1.9	529.5	50.7	478.8	2.08	
1981/82	383.4	1.5	384.9	24.9	360.0	1.55	
1982/83	458.0	3.4	461.4	28.9	432.5	1.85	
1983/84	553.0	7.3	560.3	41.9	518.4	2.19	
1984/85	457.0	3.7	460.7	24.1	436.6	1.83	
1985/86	369.4	15.8	385.2	22.6	362.6	1.51	
1986/87	614.0	4.0	618.0	47.2	570.8	2.35	
1987/88	414.0	12.5	426.5	38.8	387.7	1.58	
1988/89	397.0	10.3	407.3	21.6	385.7	1.56	
1989/90	249.2	29.5	278.7	10.9	267.8	1.07	
1990/91	328.6	37.6	366.2	10.1	356.1	1.41	
1991/92	326.4	53.2	379.6	13.8	365.8	1.43	
1992/93	576.8	18.1	594.9	33.7	561.2	2.16	
1993/94	318.0	52.8	370.8	21.3	349.5	1.33	
1994/95	348.0	41.0	389.0	28.9	360.1	1.35	
1995/96	389.0	56.0	445.0	20.6	424.5	1.58	
1996/97	382.0	58.8	440.8	9.2	431.6	1.58	
1997/98	354.0	133.7	487.7	10.3	477.4	1.73	
1998/99	316.6	121.7	438.3	13.9	424.4	1.52	
1999/00	374.6	173.3	548.0	5.5	542.5	1.92	
2000/01	472.6	162.1	634.7	3.9	630.8	2.21	
2001/02	462.7	262.4	725.1	4.1	721.0	2.50	
2002/03	370.8	311.1	681.9	2.7	679.2	2.34	
2003/04	488.7	320.3	809.1	3.5	805.6	2.75	
2004/05	326.8	582.5	909.3	2.9	906.3	3.06	
2005/06	629.0	424.8	1,053.8	14.5	1,039.3	3.48	
2006/07	320.2	769.1	1,089.3	4.9	1,084.4	3.59	
2007/08	385.9	694.1	1,080.0	13.6	1,066.4	3.50	
2008/09	231.7	951.8	1,183.6	5.4	1,178.2	3.83	
2009/10 F	473.4	805.0	1,278.5	8.0	1,270.5	4.10	

F = Forecast.

1/ Marketing season extends over 12 months, with California marketings running from November of the first year listed through November of the following year, and Florida marketings running from June of the second year listed through the following February. 2/ Imports and exports are on a calendar year.

Source: USDA, Economic Research Service calculations.

to 6 million pounds (or around 1 to 2 percent of production) except in 2005/06 when exports were 14.5 million pounds and in 2007/08 at 13.5 million pounds. Exports were much higher during both those marketing seasons than other seasons over the past decade, but volumes still do not match up to high levels achieved during the mid-1980s through mid-1990s when exports averaged around 25 million pounds annually.

Chile's avocado crop for this season benefited from improved crop-growing weather with production rebounding from a sharply smaller crop last season due to a freeze. The Chilean avocado industry was mostly unharmed by the strong earthquake that shook the country on February 27. Shipments were winding down for the season when the earthquake occurred and most export-bound supplies had already left the country. AMS data indicate Chilean weekly shipments to the United States slowed by almost 40 percent in late February through the first week of March from the average weekly shipments during the first three weeks in February. In addition to seasonal declines, the drop in shipments reflects the slow movement of Chilean products, in general, as the country assessed earthquake damage to all sectors of its economy. Relative to last season, however, the earthquake did not prevent Chile's avocado industry from shipping much higher volumes to the United States late in the season.

In Mexico, a combination of favorable weather during the growing season and continued implementation of phytosanitary programs to control pests led to increased production potential for their avocado crop, with 2009/10 total production forecast to increase to a record 1.18 million metric tons, up almost 6 percent from the previous season, according to USDA's Foreign Agricultural Service (FAS).

Mexico's domestic market consumes most of that country's avocado production, but growing international demand for their Hass avocados, particularly from the United States, (Mexico's main export market), as well as from other important markets such as Japan, Canada, France, and El Salvador, and potential markets like China, has influenced increased plantings in recent years. Hence, avocado production in Mexico is expected to continue to trend upward in the next few years as these recent plantings come into bearing. Exports from Mexico for 2009/10 are forecast to remain about unchanged from 2008/09, but volumes going to the U.S. market are projected to increase by 10 percent.

***Weather Limits Strawberry Supplies, Sending Early-Winter Prices Higher***

Freezes and heavy rains were to blame for tight strawberry supplies in the United States early this winter, driving strawberry prices sharply higher in January and February. Even with increased imports, primarily from Mexico, domestic supplies during those two months were down by 35 percent and 17 percent from the same time last year, based on AMS shipment data. In the early part of January, Florida's winter strawberry crop was affected by sub-freezing temperatures lasting for almost two weeks, damaging fields and forcing harvest activities into almost a complete halt during that period. Freeze damage to the crop, however, was minimized as growers remained vigilant in their use of irrigation throughout the duration of the freeze to shield their strawberry plants from the frigid temperatures. Because Florida is the major U.S. producer of strawberries during January and February, its lack of presence in the market during those months drove up demand for California and Mexican strawberries. However, while supplies increased from Mexico, heavy rains across southern California in mid-January and early-February also tightened early-season shipments from the region, keeping prices strong.

U.S. strawberry grower prices in January and February reached record-high levels for the month, averaging \$2.18 per pound and \$1.55 per pound, respectively. Last year the same time, January and February grower prices averaged \$1.16 and \$1.28 per pound. Price declines in February were influenced by the slightly higher supply volume available that month. In anticipation of the heavy rains in California, growers rushed to pick harvest-ready berries prior to the storms and this led to the slight increase in February supplies from volume available in January. Also, increased supplies in late February were a sign that fields were recovering in both California and Florida. Lack of promotable supplies in January and February made strawberries more expensive at retail, with consumers having to pay \$2.85 per 12 ounce pint in January and \$2.70 in February, up from \$2.61 and \$2.45 for the same 2 months in 2009.

Gradual warming up of temperatures in Florida following the freeze helped strawberry fields recover and production resumed, but shipments remained at below-normal levels through February. Exposure to several cold mornings and the need for more warm-weather days has slowed the recovery process for the plants. Florida shipments are finally making a rebound in March, traditionally the tail end of their shipping season, and available supplies are likely to last through April. Massive harvesting taking place in Florida in March raised their shipments for the month through the end of the third week, up substantially from previous weeks, resulting in sharply lower free-on-board (f.o.b.) shipping point prices. California strawberry fields were stripped of damaged berries, and improved weather has

helped increase yields, resulting in promotable volumes beginning around mid-March. Granted favorable growing weather in the coming months, seasonal supply increases from California, typical of other years, are expected this spring as Florida exits the market. California's total production, however, may be down from last year due to losses from the January rainstorms and smaller area planted and harvesting forecast for 2010.

Back in January, NASS released this year's strawberry area forecast for California, Florida, and Oregon—the top three strawberry-producing States in the country. Total strawberry area for 2010 was forecast to decline by 1,500 acres in California and by 100 acres in Oregon. Production area in Florida, on the other hand, was forecast to increase by 100 acres. Mostly influenced by fewer acres in California, combined harvested area for the three States is forecast to be down by 1,300 acres this year, totaling 48,200 acres. Both California and Florida were forecast to harvest this season's entire planted area while 300 acres in Oregon will not be harvested. With the forecast decline in harvested acreage and based on 3-year average yields per acre, ERS projects a potential drop in U.S. strawberry production of 6 to 7 percent from a year ago. Additional weather problems that may arise during the remaining growing and harvesting period could further reduce the projected production for this year. On the flip side, the possibility of significant increases in yields, should excellent weather conditions prevail this spring and summer, could bring about moderation to the currently projected production decline for 2010.

California remains the dominant strawberry-producing State in the country, representing over 80 percent of total harvested area and close to 90 percent of total volume produced. Strawberry area in California has expanded over the last 10 years (declining only in 2001, 2007, and likely in 2010) in response to increasing consumer demand and higher grower prices, especially in the fresh fruit side of the market. U.S. strawberry production for fresh use increased an average 8 percent annually year-after-year since 2002, except in 2008, at the same time that fresh strawberry imports into the country also continued to climb (table 14). The presence of imports in this market is year round, but most of the shipments coincide with the domestic shipping season. Hence, the recent growth in imports, averaging 16 percent annually in the past 5 years, signals continued strong demand to fill in for supply needs in the domestic market, especially with robust exports taking up around 12 percent of the fresh-market crop. U.S. fresh strawberry exports set new record-highs each year since 2005, reaching 272 million pounds in 2009. Canada received 85 percent of the total export volume in 2009 and exports to the country increased by 9 percent. Though exports fell significantly to Mexico and the United Kingdom, both major markets for the industry, exports were strong to East Asia, most particularly to Japan, Hong Kong, and Taiwan, and to the Middle East.

Strawberries rank as the fifth most popular fresh-market fruit in the United States, following bananas, apples, oranges, and grapes, and they top the list for berries. Domestic fresh strawberry demand has trended upwards with average annual consumption estimated at 6.0 pounds per person from 2005-09, almost double the average during the early 1990s. Per capita consumption rose consecutively over the last 8 years, reaching an estimated 7 pounds per person for the very first time in 2009. The frozen strawberry market serves more as a residual market for strawberries, given the higher returns in the fresh market. Demand for frozen

Table 14--Fresh strawberries: Supply and utilization, 1980 to date

Year	Supply			Utilization		
	Utilized production	Imports	Total supply	Exports	Consumption	
					Total	Per capita
-- Million pounds --			Pounds			
1980	482.1	12.7	494.8	47.1	447.7	1.97
1981	537.5	6.7	544.2	44.4	499.8	2.17
1982	589.6	4.5	594.1	44.0	550.1	2.37
1983	585.4	5.1	590.5	46.4	544.1	2.32
1984	748.2	8.8	757.0	56.3	700.7	2.96
1985	754.1	9.6	763.7	51.5	712.2	2.99
1986	734.8	13.0	747.8	51.5	696.3	2.89
1987	780.4	33.2	813.6	57.1	756.5	3.12
1988	855.5	39.4	894.9	78.0	816.9	3.33
1989	861.6	36.0	897.6	93.0	804.7	3.25
1990	863.6	32.2	895.8	85.7	810.1	3.24
1991	968.2	31.5	999.7	95.2	904.4	3.57
1992	999.7	23.8	1,023.5	102.3	921.2	3.59
1993	1,010.8	31.4	1,042.2	102.1	940.1	3.62
1994	1,147.7	43.7	1,191.4	126.4	1,065.0	4.05
1995	1,145.6	58.8	1,204.4	111.4	1,093.1	4.10
1996	1,212.6	67.3	1,279.9	116.0	1,163.9	4.32
1997	1,201.8	31.9	1,233.7	115.8	1,117.9	4.10
1998	1,132.2	58.1	1,190.3	109.3	1,081.1	3.92
1999	1,305.2	94.8	1,400.0	124.3	1,275.7	4.57
2000	1,433.3	76.2	1,509.5	136.5	1,373.0	4.86
2001	1,259.7	70.7	1,330.4	128.1	1,202.3	4.21
2002	1,406.3	89.9	1,496.2	156.9	1,339.3	4.65
2003	1,642.4	90.3	1,732.7	194.8	1,537.9	5.29
2004	1,694.4	94.4	1,788.8	182.6	1,606.3	5.48
2005	1,811.0	122.7	1,933.7	207.6	1,726.1	5.83
2006	1,910.9	153.4	2,064.3	229.1	1,835.2	6.14
2007	1,973.3	157.7	2,131.0	240.3	1,890.7	6.27
2008	2,091.1	143.0	2,234.1	269.2	1,964.9	6.45
2009 1/	2,288.0	187.2	2,475.2	271.7	2,203.4	7.17

1/ Preliminary.

Source: USDA, Economic Research Service calculations.

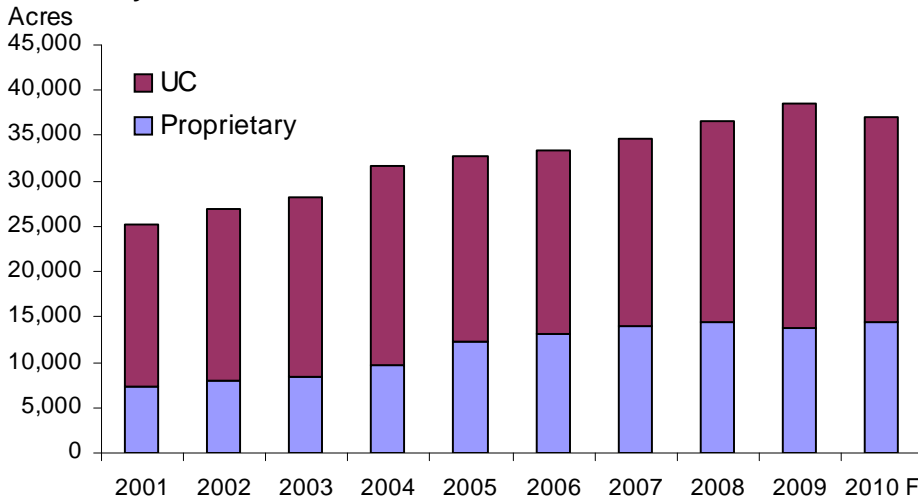
strawberries has remained fairly steady over the past decade, with annual consumption averaging between 1 and 2 pounds per person.

In California, there are five major strawberry growing districts—Orange County/San Diego, Oxnard, and Santa Maria in the south and Watsonville/Salinas and San Joaquin in the north. There are also two strawberry planting seasons in California. Acreage planted in the fall produces for the winter, spring, and summer strawberry market, and makes up around 90 percent of California's total strawberry area. Fall supplies come from plantings done during the summer. The smaller strawberry area forecast for California in 2010 stems from the fewer acres planted last fall in almost all of the State's strawberry-growing districts, except in Oxnard, which is the second-largest producing district in the State. According to the *California Strawberry 2010 Acreage Survey* released by the California Strawberry Commission, strawberry acreage planted in the fall decreased by 6 percent from the previous year while acreage for this summer is projected to increase almost 17 percent from last summer. Oxnard and Santa Maria growing districts will account for all of the acreage this summer.

Strawberry varieties developed by the University of California continue to represent a majority of California's strawberry area. However, proprietary varieties are capturing a growing share of the State's strawberry acreage, with expanding presence in Oxnard, Watsonville-Salinas, and Santa Maria districts (fig. 4). Over the past 10 years, acreage planted to proprietary varieties rose from an average of 30 percent from 2001-03 to around 39 percent from 2007-09.

Figure 4

**Proprietary varieties are increasing in share of California's strawberry area**



F = Forecast.

Source: California Strawberry Commission, Acreage Survey, various years.

The acreage survey indicated acreage planted to UC varieties is projected to decline by 10 percent from a year ago for a total of 22,464 acres while acreage planted to proprietary varieties is projected to increase 5 percent to 14,479 acres, representing 39 percent of the State's total acreage. Among UC developed strawberry varieties, Albion continues to be the most predominantly planted, with more than half of total acreage (excluding those planted with proprietary varieties). Other prominent UC varieties include Ventana and Camino Real, varieties that became available for the first time in 2002. Declines in acreage are expected for these three major UC varieties in 2010. Acreage growth is expected for the San Andreas variety, a more recent UC variety that has similar production patterns to Albion but exhibits more superior qualities, planted primarily in the Oxnard district but also has acreage in Santa Maria, Watsonville/Salinas, and Orange and San Diego County growing districts. Very limited acreage was first reported for this variety in 2008, representing only a tiny fraction of the State's total strawberry area. It is a very new variety in that licensing and transfer outside of California only started in January 2010. Acreage planted to the San Andreas variety in 2009 rose sharply, capturing 3 percent of total acreage and for 2010; this share is expected to increase to 7 percent.

***Less-Than-Ideal Weather and Recent Earthquake Limit Chilean Fruit Supplies This Winter, Prices Higher***

AMS data indicated U.S. fruit imports from Chile this winter through the second week in March were behind in volume from the same time a year ago, including shipments of grapes, peaches, nectarines, plums, blueberries, apples, and pears. Prior to the magnitude 8.8 earthquake in Chile on February 27, imports from the country for each of these fruit were already showing lower volumes for this season from the previous. Rains and freezing weather in Chile during the spring season and the alternate-bearing nature of the fruit trees (for the stone fruit crops—peaches, nectarines, and plums) were reported to have both contributed to reduced fruit set in orchards. In addition, cold weather during the harvest season slowed fruit maturity, delaying harvest for most of these fruit.

Chilean grape shipments to the U.S. market (Chile's top fruit export to the United States) for this winter through March 13 were down 26 percent from the same time last year. Aside from the spring freeze, strong markets for Chilean grapes in Europe and Latin America also have been reported to have contributed to the lower shipments to the United States earlier this season, driving prices for imported grapes higher in the U.S. market. The northern grape-growing region in Chile, which ships mostly during the early winter and through February experienced the most crop loss due the spring freeze. Grape vineyards in the central and south of the country were less affected by the spring freeze but have reported smaller grapes and fewer bunches due to below-normal spring temperatures.

Then there was the recent massive earthquake (including a series of strong aftershocks), affecting mostly the central and southern portions of Chile. The epicenter of the earthquake was reported approximately 70 miles off the southern coast of one of Chile's largest cities—Concepcion—and about 270 miles from the capital, Santiago. Initial reports about the country's fresh fruit industry were that the earthquake most heavily impacted production regions VI, VII, VIII, and the Metropolitan region. These four regions combined account for over 60 percent of Chile's fruit production area.

Chile's fruit producers and exporters are still assessing the full impact of the earthquake to their industry. While the long-term effects will likely take some time to measure, short-term prospects for the industry appear more promising. Industry reports indicated that Chile's fruit industry had come out of this disaster with less damage than initially suspected. Immediately following the earthquake, there were reports of fruit drop in orchards, and damage to some packing houses, cold storage facilities, water channels and reservoirs, roads, bridges, and ports, as well as power failure. After initial assessments, industry reports indicated that a number of key packing facilities escaped with minimal damage and already have returned to normal capacity. Growers affected by blocked roads and damaged bridges were mostly able to transport their produce via alternate roads. Ports closed in order to inspect for damage but returned to almost full capacity a few days after the earthquake. Key ports such the Port of Valparaiso and San Antonio were repaired quickly and the port of Coquimbo remained fully operational, providing special treatment to perishable products, according to a press release from the Chilean Exporters Association (ASOEX). Electric power had mostly been restored in packing facilities and orchards. A series of strong aftershocks, including the most recent on March 11, did not result in major infrastructure damage to the fruit industry but were expected to cause further disruptions in the flow of produce.

Chile had already reached peak harvest periods for many of its fruit when the recent earthquake occurred, so there was already a significant volume of fruit on its way to export markets, particularly for grapes, peaches, nectarines, and plums. Blueberry supplies were winding down for the season but shipments of apples and pears were just starting, as normally peak volume comes during the spring with supplies lasting into the summer months. Because of the earthquake and succeeding aftershocks, disruptions in the country's fruit distribution system was expected to lead to a shortage in Chilean fruit supplies arriving at U.S. ports during the second half of March, furthering the current strength in prices. However, without other emerging difficulties, late-season shipments, especially those for grapes, apples, and pears, will likely resume promotable levels in the spring, moderating the strength in prices.

In February, free-on-board (f.o.b.) shipping-point prices for Chilean Thompson seedless and Flame seedless grapes entering the Port of Philadelphia ranged from \$16 to \$18 per 18-pound bagged container of large-size grapes, compared with \$14 to \$16 the same time last year. With the anticipation of a temporary shortage in the couple of weeks following, March f.o.b. prices for the same varieties through the second week already climbed to the \$20 to \$30 range. Last year for the same period in March, prices fell between \$10 and \$14. At the retail level, prices reported by AMS for red/green grapes in February averaged \$1.73 per pound, up from \$1.64 in February 2009. During the first two weeks in March, retail prices rose to an averaged \$1.83 per pound, about 17 cents higher than the average during the same time a year ago.

Early-season Chilean apples and pears (size 70s and 80s) entering the Port of Philadelphia were also being priced higher, with f.o.b. prices during the first two weeks in March for Gala apples at \$28 to \$30 per 18 kilogram carton tray pack and for Summer Bartlett and Bosc pears within the range of \$24 to \$28, also per 18 kilogram container. Last year the same time, their prices ranged from \$24 to \$28 for apples and \$18 to \$24 for pears.

## Fruit and Tree Nuts Trade Outlook

### *Oranges, Apples, and Tree Nut Exports Strong this Season*

Bigger crops of fresh oranges and apples have helped drive up exports of these crops so far this season through January. This season's orange crop, which started this past November, was larger than last season, providing more oranges available for export, boosting exports 28 percent over last season (table 15). With reported good quality and fruit size, international demand has been strong this season from Canada, Hong Kong, Japan, and South Korea. Shipments to Canada so far this season have been the biggest in a dozen years. Those to Hong Kong have exceeded every year since 2001/02. Although higher than last season, fresh orange shipments to Japan are only about half the quantity shipped throughout the 1990s up through 2007/08.

Fresh apple exports are also up this season, August 2009 through January 2010, although the increase, at 3 percent, is modest. Shipments to Mexico, the No. 1 export market for U.S. fresh apples were running 14 percent below the same time last season. As a result of a trade dispute with the United States over trucking, Mexico levied a strong tariff on U.S. apples, driving up their price in the Mexican market and contributing to lower demand. Exports were also down 14 percent to the No. 2 market, Canada. Helping offset the declining demand in these two important markets has been the very strong demand in Indonesia and India. India is a relatively new market for U.S. fresh apples, with shipments of major quantities only beginning in 2000/01; India has shown strong growth ever since.

Almond exports have been up so far this season August 2009 through January 2010. Although the 2009 crop was smaller than last year's, very large beginning stocks coming into the season resulted in almond supplies down only 1 percent from last season. The California Almond Board showed shipments to the China/Hong Kong market through February were more than double the quantity shipped last season. This market has now become the No. 1 destination for U.S. almonds, surpassing previously top markets in Western Europe. China has not felt the same economic difficulties as much of the rest of the world and its economy has been strong over the last year. With its currency pegged to the U.S. dollar, the weak dollar through the early part of this season made U.S. almonds very affordable in China, helping drive up demand. The Chinese have also shown an increased interest in overall nut consumption as research studies have shown the health benefits from eating nuts. While shipments to China are a mix of inshell and shelled almonds, shelled almonds accounted for over half the shipments. This season, a doubling in demand for inshell almonds by China has been the driving factor in the bigger shipments. Shipments were also up to Spain and Germany so far this season, the No. 2 and No. 3 markets. Almost all of the almonds shipped to these two countries are the higher valued shelled nuts. Shipments to India, a rapidly growing market for U.S. almonds, fell 11 percent this season through February. India is the major market for inshell almonds, although China is quickly catching up.

Similar to this year's almond crop, the smaller walnut crop was offset by large beginning stocks, and ERS estimates total supply will be up 1 percent from last year. If realized, supplies will be the highest in the U.S. walnut industry's history. The California Walnut Board reports both domestic and export walnut shipments have been up this season, September 2009 through February 2010. Once



again, shipments to China have shown the strongest growth, largely for the same reasons as for almonds. Shipments to China during this period have increased eightfold over the same time last season for inshell walnuts and more than doubled for shelled walnuts. The bigger shipments to China are coming at a time when USDA's Foreign Agricultural Service is forecasting a big walnut crop in China. Although China's walnut production continues to grow, so do incomes, and demand for U.S. walnuts is likely to stay strong in the coming years. Inshell walnut shipments to China were only exceeded by those to Turkey and Italy. This season, Turkey is the No. 1 market for U.S. inshell walnuts; its shipments more than double the quantity last year. Shipments to Italy were up 18 percent. Shipments of shelled walnuts doubled to both Japan and Korea, and were up 54 percent to Germany.

The 2009 pistachio crop is in an "on cycle" of production, providing sufficient supplies to meet strong international demand, resulting in increased exports so far this season, which began September 2009. Also contributing to increased exports over last season is a return to normalcy for the industry. Last season's marketing was plagued by the discovery of *Salmonella* in some products, requiring recalls of some pistachios but affecting the whole industry in general as consumers steered away from pistachio products while the industry dealt with recalls. According to data from the Administrative Committee for Pistachios, exports through February were up to most major international markets, except Canada and Russia. While Western Europe is still the No. 1 market for U.S. pistachio nuts, led by the Netherlands, Germany and Luxembourg, the No. 1 country was China. Shipments to China more than doubled over last season to date, and shipments to China/Hong Kong almost equal that of all those sent to Western Europe.

Pecan production is also in an "on cycle" this season. The higher production contributed to increased exports of both inshell and shelled pecans this October 2009 through January 2010. Shipments so far this season are the highest in history, with Hong Kong/China accounting for all the growth and receiving 83 percent of the inshell and half of the shelled international shipments. This is a relatively new market for the pecan industry, with much of the growth taking place in only the last few years. Shipments of inshell pecans were also strong to Mexico, previously the No. 1 market, nearly doubling during this time period over the same time last season. Vietnam is also emerging as an important market for U.S. inshell pecans. Shipments of shelled pecans were also up to the now No. 2 market, Canada, as well as to the next biggest markets, the Netherlands and Israel.

### ***Banana Imports Showing Signs of Rebounding***

After adverse weather conditions in major banana-producing countries hampered banana imports last season, increased shipments from Guatemala and Costa Rica helped drive imports up 2 percent over last January (table 16). Shipments from Ecuador, the next major source, however, were down for the month. Bananas are the No. 1 fruit imported into the United States. Shipments in January alone exceeded shipments of any other single fruit for their whole season.

Tangerine/clementine imports were down this season, October 2009 through January 2010, mostly due to a drop in clementine shipments, the major fruit in this category. Clementine shipments were down from Spain, the major import source for the U.S. market and from Morocco, the next major source. A decline in Spain's

production, as well as continued strong demand for clementines in the European Union market contributed to the decline. At the same time, U.S. production of clementines and other easy-peel varieties out of California is offsetting domestic demand for imports of these fruit.

Table 15--U.S. exports of selected fruit and tree nut products

Commodity	Marketing season	Season-to-date (through January)		Year-to-date change
		2009	2010	
		----- 1,000 pounds -----		Percent
Fresh-market:				
Oranges	November-October	234,260	299,659	27.9
Grapefruit	September-August	284,162	261,850	-7.9
Lemons	August-July	103,005	99,620	-3.3
Apples	August-July	879,262	909,513	3.4
Grapes	May-April	734,919	653,967	-11.0
Pears	July-June	254,174	270,549	6.4
Peaches (including nectarines)	January-December	678	479	-29.4
Straw berries	January-December	13,353	15,351	15.0
Cherries	January-December	193	358	85.1
		----- 1,000 sse gallons 1/ -----		
Processed:				
Orange juice, frozen concentrate	October-September	13,614	14,646	7.6
Orange juice, not-from-concentrate	October-September	25,037	24,251	-3.1
Grapefruit juice	October-September	5,909	2,300	-61.1
Apple juice and cider	August-July	3,602	11,001	205.4
Wine	January-December	6,719	6,258	-6.9
		----- 1,000 pounds -----		
Raisins	August-July	172,630	190,672	10.5
Canned pears	June-May	10,317	9,167	-11.1
Canned peaches	June-May	56,753	24,451	-56.9
Frozen straw berries	January-December	2,312	2,369	2.5
		----- 1,000 pounds -----		
Tree nuts:				
Almonds (shelled basis)	August-July	500,707	591,133	18.1
Walnuts (shelled basis)	September-August	99,656	164,280	64.8
Pecans (shelled basis)	October-September	17,842	41,968	135.2
Pistachios (shelled basis)	September-August	75,328	81,409	8.1

1/ Single-strength equivalent.

Source: U.S. trade data provided by the U.S. Department of Commerce, U.S. Census Bureau.

Table 16--U.S. imports of selected fruit and tree nut products

Commodity	Marketing season	Season-to-date (through January)		Year-to-date change
		2009	2010	
		----- 1,000 pounds -----		Percent
Fresh-market:				
Oranges	November-October	5,255	19,393	269.0
Tangerines (including clementines)	October-September	166,926	136,089	-18.5
Lemons	August-July	66,045	72,670	10.0
Limes	January-December	64,062	60,256	-5.9
Apples	August-July	77,430	56,140	-27.5
Grapes	May-April	609,819	556,325	-8.8
Pears	July-June	40,211	32,959	-18.0
Peaches (including nectarines)	January-December	36,286	24,761	-31.8
Bananas	January-December	661,070	674,341	2.0
Mangoes	January-December	28,040	28,680	2.3
		----- 1,000 sse gallons 1/ -----		
Processed:				
Orange juice	October-September	92,210	119,068	29.1
Apple juice and cider	August-July	233,158	262,380	12.5
Wine	January-December	18,232	18,624	2.2
		----- 1,000 pounds -----		
Canned pears	June-May	43,619	38,921	-10.8
Canned peaches (including nectarines)	June-May	99,054	88,917	-10.2
Canned pineapple	January-December	73,558	67,217	-8.6
Frozen straw berries	January-December	12,974	9,518	-26.6
		----- 1,000 pounds -----		
Tree nuts:				
Brazil nuts (shelled basis)	January-December	1,804	1,170	-35.1
Cashew s (shelled basis)	January-December	18,655	22,519	20.7
Pine nuts (shelled basis)	January-December	1,012	234	-76.9
Pecans (shelled basis)	October-September	30,892	59,647	93.1

1/ Single-strength equivalent.

Source: U.S. trade data provided by the U.S. Department of Commerce, U.S. Census Bureau.

## Commodity Highlight

### *The Importance of Juice To The U.S. Fruit Industries*

Americans consumed an equivalent to 103.2 pounds of fruit as juice between 2006 and 2008 (fig 5). Juice is an important component of total U.S. fruit consumption, accounting for an average of 38 percent of all fruit use during this period. Among the major fruit juices, the average American consumed the equivalent of 56 pounds of oranges, 26 pounds of apples, 5 pounds of grapes, and 4 pounds of grapefruit annually, with total fruit juice consumption equal to an average of 7.6 gallons (single-strength equivalent).

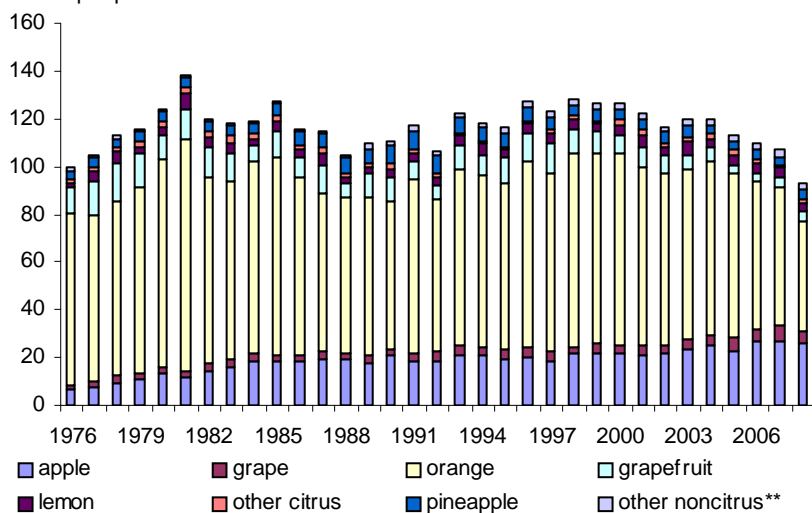
The production of juice is critical to the economic welfare of some fruit industries in the United States, with much of their fruit going to juice processing each season. For example, over 95 percent of Florida's oranges go to making juice. Similarly, much of the Concord and Niagara grape production in the Lake Erie States, Michigan, and Washington goes to juice, as does a large portion of the apple production in Michigan, Pennsylvania, and Virginia.

Orange juice has traditionally been the major fruit juice consumed in the United States. In the 1980s and 1990s, orange juice accounted for as much as two-thirds of all fruit juice consumption. At the height of its demand in the late 1990s, per capita orange juice consumption reached 5.7 gallons annually (table 17). Since then, however, orange juice consumption has been on the decline, averaging only 3.9 gallons a person from 2007-2009. Consumption declined partially because of reduced production due to weather and disease-reduced crops from Florida, the major orange juice producer in the United States, but also due to reduced consumer demand demonstrated through slowed movement of juice from packing to distribution and large stocks remaining at the end of each of the past few seasons. The reasons for reduced consumer demand for orange juice are not clear, nor is it clear if this is a temporary or long term trend. Despite its decline in demand, orange juice is still the No. 1 fruit juice consumed in the United States.

Figure 5

#### **Per capita juice consumption, fresh-weight equivalent, 1976-2008**

Pounds per person



\*Tangerines, tangelos, and limes. \*\*Cranberries and prunes.

Source: U.S. Dept. of Agriculture, Economic Research Service, Fruit and Tree Nuts Situation and Outlook Yearbook 2009

Table 17--Selected fruit juices: Per capita consumption, 1980/81 to date

	Orange	Grapefruit	Lemon	Lime	Apple	Grape	Pineapple	Cranberry	Prune
	-- Gallons, single-strength equivalent--								
1980/81	4.72	0.72	0.25	0.01	1.08	0.25	0.31	NA	0.09
1981/82	4.30	0.69	0.18	0.01	0.96	0.24	0.28	NA	0.10
1982/83	5.78	0.61	0.17	0.01	1.21	0.24	0.29	NA	0.08
1983/84	4.82	0.33	0.12	0.01	1.32	0.33	0.28	NA	0.06
1984/85	4.81	0.61	0.15	0.01	1.53	0.29	0.27	NA	0.07
1985/86	5.00	0.48	0.11	0.02	1.53	0.23	0.34	NA	0.07
1986/87	4.57	0.68	0.21	0.01	1.52	0.22	0.39	NA	0.07
1987/88	4.52	0.36	0.10	0.01	1.62	0.30	0.43	NA	0.06
1988/89	4.66	0.60	0.11	0.01	1.60	0.27	0.43	NA	0.07
1989/90	3.70	0.90	0.14	0.02	1.45	0.31	0.44	0.15	0.04
1990/91	4.65	0.52	0.13	0.02	1.72	0.28	0.50	0.14	0.04
1991/92	4.30	0.40	0.12	0.02	1.51	0.36	0.50	0.17	0.33
1992/93	5.06	0.52	0.17	0.01	1.56	0.38	0.47	0.16	0.04
1993/94	5.13	0.62	0.18	0.01	1.78	0.35	0.41	0.15	0.04
1994/95	4.93	0.59	0.12	0.02	1.77	0.29	0.35	0.19	0.04
1995/96	5.16	0.56	0.15	0.01	1.57	0.45	0.38	0.16	0.03
1996/97	5.30	0.55	0.16	0.02	1.69	0.38	0.38	0.17	0.03
1997/98	5.74	0.61	0.13	0.01	1.79	0.27	0.29	0.21	0.03
1998/99	5.71	0.58	0.12	0.01	1.79	0.27	0.29	0.21	0.03
1999/2000	5.60	0.53	0.15	0.02	1.78	0.44	0.32	0.23	0.02
2000/01	5.18	0.54	0.20	0.02	1.78	0.34	0.30	0.20	0.02
2001/02	5.04	0.47	0.14	0.01	1.77	0.33	0.31	0.17	0.03
2002/03	4.92	0.40	0.20	0.01	1.79	0.37	0.32	0.21	0.03
2003/04	4.95	0.38	0.13	0.03	1.93	0.40	0.34	0.23	0.03
2004/05	4.77	0.23	0.16	0.03	2.11	0.38	0.27	0.23	0.03
2005/06	4.40	0.20	0.14	0.03	1.86	0.51	0.26	0.23	0.03
2006/07	4.15	0.29	0.14	0.02	2.20	0.44	0.27	0.25	0.04
2007/08	3.30	0.31	0.12	0.03	2.26	0.56	0.22	0.23	0.04
2008/09 2/	4.36	0.31	0.17	0.04	2.14	0.45	0.27	0.27	0.03

Source: USDA, Economic Research Service, *Fruit and Tree Nuts Situation and Outlook Yearbook 2009*

The strong presence of orange juice in domestic juice consumption has resulted in a downward trend in overall juice usage, although not at as rapid a pace. The growing presence of noncitrus juice consumption has helped moderate the overall decline (fig. 6). The rise in consumption of noncitrus fruit juices is led by growing demand for apple juice, especially since about 2004/05, but also from increases in grape and cranberry juices. Other noncitrus fruit juices have also entered the market, such as pomegranate and mango juices, but data are not available on these fruit, and are not included in this analysis.

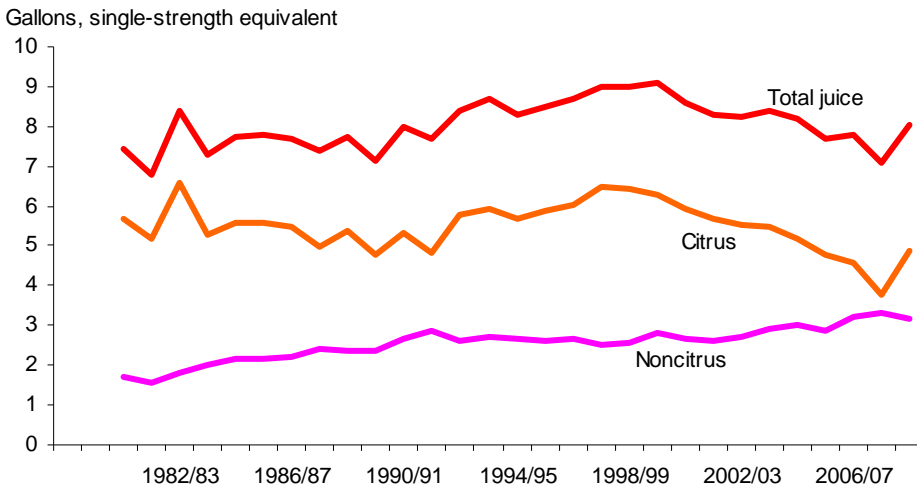
### ***The Importance of Juice to the U.S. Fruit Industries***

Juice production and the importance of juice demand in overall revenues for the fruit industries are both localized and industry-specific. For example, while orange juice is a major usage of Florida oranges and the demand for orange juice affects Florida's orange growers' returns, the use of oranges for juice is mostly a residual market for California growers. They use those oranges that do not meet grade standards for the fresh market and have a much smaller effect on overall grower returns. Similarly, California's grapefruit and lemon industries also use the juice market for culled fruit. Florida's grapefruit industry relies on the processing market for about 40 percent of its harvest; the remaining 60 percent generally goes to the fresh market. While not as reliant on juice demand for its grapefruit marketing as are the orange producers, Florida's grapefruit growers are still dependent on demand for grapefruit juice for its overall annual returns.

Noncitrus fruit producers, especially those producing apples and grapes rely much less on juice markets for their revenues. That said, as mentioned above, specific States or specific fruit varieties are much more heavily reliant on juice markets as their major source of income. Also, some noncitrus fruit also have other processed uses to which they sell their fruit, as well as the fresh market. Apples, for example, also go to making sauce, dried, and frozen slices. Grapes are also used for wine and raisins, however, some grape producers grow specifically for these markets and their fruit would not be used in the juice industry.

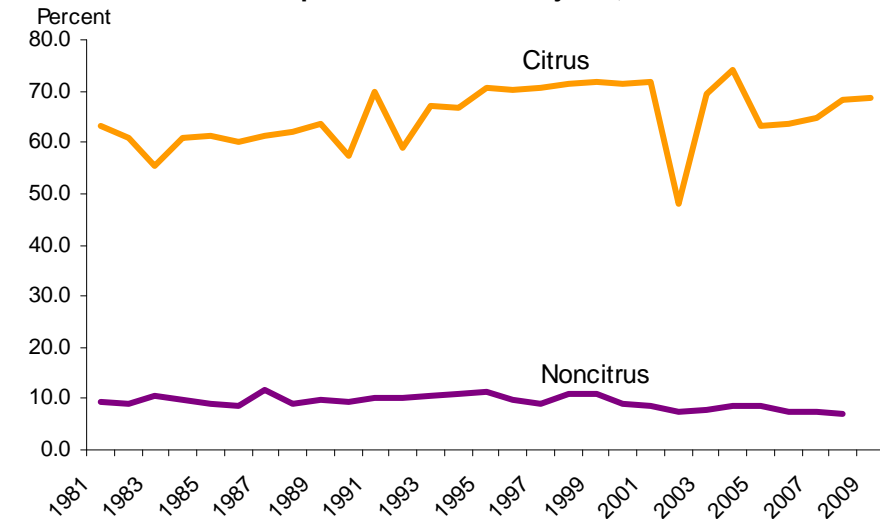
In general, only about 7 to 8 percent of noncitrus fruit production each year goes into making juice (fig. 7). For apples, about 16 percent of each crop went to juice during 2004-08, down from almost 25 percent during the 1980s and 1990s. Juice accounts for slightly less than half the quantity of apple going to processing.

Figure 6  
**U.S. per capita juice consumption, 1980/81-2008/09**



Source: USDA, Economic Research Service, *Fruit and Tree Nuts Situation and Outlook Yearbook 2009*

Figure 7  
**Share of annual fruit production used for juice, 1981-2008**



Source: USDA, Economic Research Service calculations.

In the grape industry, only about 7 percent of total production each year during 2004-08 went to making juice, although over 85 percent of each year's crop goes to some form of processing. The amount going to the juice market has remained fairly constant since 1980, even as the grape crop has grown. For Concord and Niagara grape producers, however, about 90 percent of their crop goes to making juice. In the cranberry industry, the juice market had traditionally been the major destination for the fruit, with the Cranberry Marketing Board estimating about 94 percent of the crop going to make juice every year. Over the past few years, however, a new, dried cranberry industry has taken off, providing another, strong avenue for the use of cranberries. While the demand for cranberries for drying competes with juice for its share of the crop, new plantings in recent years have been spurred by the growth in demand for dried cranberries and the crop size has remained sufficient to accommodate the dried cranberry market as well as an increase in the volume of cranberries used for juice.

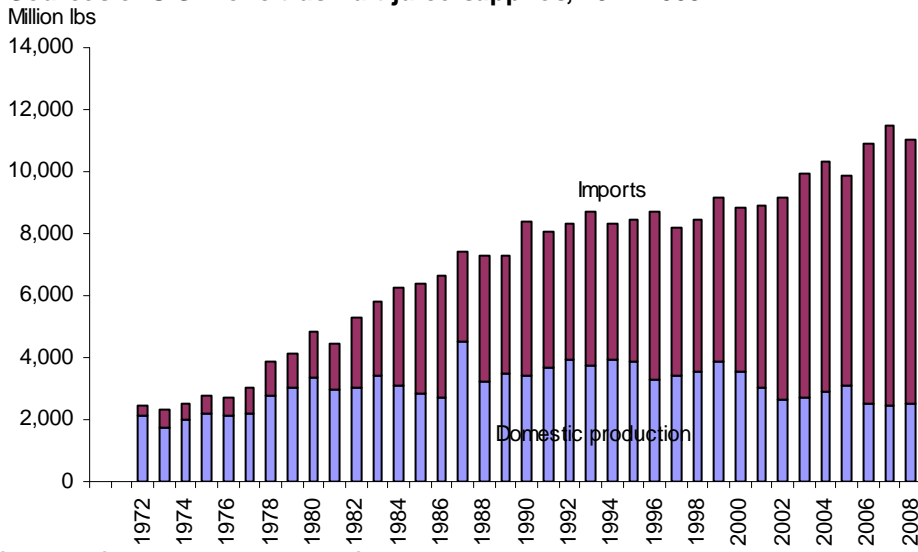
### ***Increasing Use of Imported Juices in U.S. Fruit Juice Consumption***

The share of the U.S. noncitrus fruit crops used to make juice remained stable during the 1990s but has been declining slightly since 2000, despite increases in production of many of the crops that are used to make juice (fig. 8). At the same time, U.S. consumption of noncitrus fruit juices increased at a rate of 2 percent annually since 2000. To compensate for increasing demand for noncitrus juices, consumed either as the juice itself, such as apple juice, orange juice, grape juice, etc. or used as an ingredient in other juices, drinks, or other beverages, processors have increased the quantity of some juice imports. As a result, the quantity of imported juice consumed each year as a share of total fruit juice supply has been growing, especially since the mid-1990s (fig.9).

While the orange juice industry has always used imported juice, primarily from Brazil, to compensate during years of short domestic supplies and to blend with early season oranges to improve the color and flavor of its frozen concentrated orange juice, imports played a much smaller role in meeting supply needs of other fruit industries. Changing structures of several domestic fruit industries over the past decade have resulted in the increased presence of imported juices as part of overall domestic juice consumption. This is especially true of lime, pineapple, and prune juices. The loss of the domestic lime industry in Florida due to weather and disease-related damages to the crop, and the reduced pineapple acreage for Hawaii's pineapple industry have resulted in greater reliance on imported lime and pineapple juices to meet domestic needs. The decline in U.S. demand for prunes, the major use of the prune variety of plums caused the California industry to reduce the number of trees planted. As a result, the quantity of fruit available for making prune juice declined and imports have steadily increased to meet reviving domestic demand after a decline in the late 1990s through about 2003 (table 18). These juices, however, account for only a small share of total fruit juice consumption, together accounting for only about one-third of a gallon consumed per capita annually. Primarily, the strong shift towards imports in recent years has been driven by the growing demand for imported apple and grape juices.

Figure 8

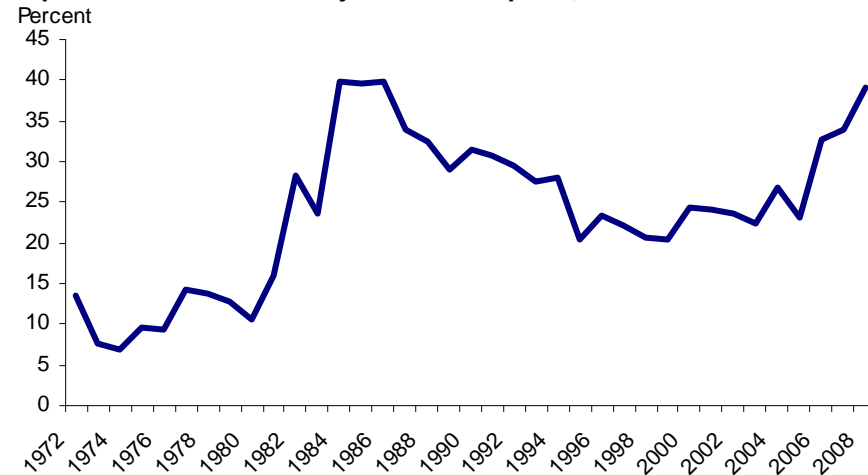
### Sources of U.S. noncitrus fruit juice supplies, 1972-2008



Source: USDA, Economic Research Service calculations.

Figure 9

### Imports as a share of fruit juice consumption, 1972-2008



Source: USDA, Economic Research Service, *Fruit and Tree Nuts Situation and Outlook Yearbook 2009*

Table 18--Imports as a share of domestic fruit juice and wine consumption, 1972 to 2008

Year	Apple	Grape	Wine	Prune	Pine- apple	Grape- fruit	Lemon	Lime	Orange	Total juice	
					----Percent----						
1972	15.3	5.8	16.2	NA	20.4	0.0	0.0	0.0	19.0	13.9	
1973	23.6	32.9	11.9	NA	23.2	0.0	0.0	0.0	9.4	8.4	
1974	23.1	15.5	11.8	NA	24.5	0.0	0.0	0.0	8.1	7.7	
1975	24.1	2.0	12.0	NA	31.6	0.0	0.0	0.0	13.4	9.9	
1976	25.7	1.1	13.7	NA	32.6	0.0	0.0	0.0	11.4	10.0	
1977	31.5	1.9	15.3	NA	40.8	0.0	0.0	0.0	17.8	14.4	
1978	33.2	1.1	18.1	NA	45.4	0.0	0.0	0.0	17.3	14.7	
1979	21.7	1.6	17.7	NA	52.7	0.0	0.0	0.0	15.8	13.7	
1980	31.0	1.9	17.9	NA	56.7	0.0	0.0	0.0	10.6	12.0	
1981	35.7	3.3	22.6	NA	57.4	0.0	0.0	0.0	21.0	17.2	
1982	49.3	3.1	19.4	NA	56.6	0.0	0.0	0.0	41.3	26.5	
1983	48.9	7.9	25.6	NA	49.8	0.0	0.0	0.0	27.8	23.9	
1984	58.1	10.8	25.1	NA	59.1	0.0	0.0	0.0	50.7	37.0	
1985	59.9	13.5	22.9	NA	70.1	0.0	2.7	21.2	51.6	36.5	
1986	64.4	11.7	19.2	NA	69.6	0.0	33.2	20.9	45.5	36.1	
1987	41.9	10.8	19.0	NA	54.5	0.0	10.5	43.6	44.0	31.7	
1988	63.8	24.1	15.0	NA	57.5	0.0	12.2	18.2	33.7	29.6	
1989	55.0	31.4	14.9	11.1	67.5	0.0	22.3	57.1	30.3	26.9	
1990	63.9	37.2	14.2	9.3	72.0	2.7	55.4	60.5	30.4	28.7	
1991	57.0	37.0	13.2	6.0	73.3	1.2	47.2	61.6	27.9	28.2	
1992	52.8	47.9	12.9	5.9	72.4	4.1	34.9	52.8	25.9	26.6	
1993	59.7	27.2	12.6	23.6	82.9	1.4	27.5	52.8	24.1	25.3	
1994	54.8	22.4	15.0	37.0	79.8	0.5	23.9	92.8	30.3	26.3	
1995	53.7	41.0	14.5	27.8	83.6	0.6	20.0	97.4	15.7	19.5	
1996	63.4	58.8	17.5	14.4	81.7	0.3	17.9	93.0	18.5	22.5	
1997	60.1	43.1	16.8	14.0	81.0	0.1	22.7	95.7	18.2	21.1	
1998	60.2	45.9	19.1	14.9	77.7	0.1	24.8	84.6	18.3	20.4	
1999	60.6	42.2	19.1	9.1	80.3	0.8	34.9	86.8	17.9	20.3	
2000	62.9	42.1	17.1	7.0	78.7	3.3	43.7	93.7	22.1	23.2	
2001	69.5	53.2	20.7	11.1	80.0	0.6	37.0	98.3	21.6	24.2	
2002	77.3	48.8	20.8	22.1	81.8	0.2	52.1	99.9	17.5	23.6	
2003	79.8	45.6	25.2	24.7	86.1	0.4	40.4	99.9	13.0	23.4	
2004	75.9	57.1	25.4	40.6	87.9	0.4	50.5	99.9	20.4	27.2	
2005	75.7	40.6	23.2	68.0	89.0	16.8	45.5	99.9	15.3	23.6	
2006	81.6	54.4	29.7	55.9	91.3	9.2	53.4	99.9	25.4	32.9	
2007	86.0	47.6	30.6	60.3	99.9	1.1	49.5	99.9	22.8	34.0	
2008	81.7	47.5	30.5	57.9	99.9	0.3	61.0	99.9	32.0	38.4	

NA--Not available.

Source: USDA, Economic Research Service calculations.

In recent years, apple juice imports, mostly in the form of concentrated apple juice, have increased. Since 2000, these imports have increased at a rate of 6.3 percent annually, contributing heavily to the overall increase in the share of imports in U.S. fruit juice consumption. While the United States has long imported apple juice to compensate for domestic supply shortages usually due to weather factors reducing a year's crop, until the early 1980s imports accounted for less than one-third of domestic consumption. During the 1980s, the structure of the domestic juice industry began to change. Until this time, the sources of apples for juice were fairly evenly distributed between Michigan, the Mid-Atlantic States, California, and Washington. By the late 1980s, however, Washington's apple industry became a much stronger player in the juice industry, accounting for a third to a half of all apples going to making juice. Its juice industry includes a large quantity of apples that have been culled from the fresh market or excess fruit during years of low international demand, driving down prices growers received for their apples for juice. As a result, Washington has been able to provide more, lower price apples for the juice market. Beginning in 2003, apple juice imports began to soar. Supplies were down from Washington that year and demand for low-cost apple juice was growing. Although China had been a source of imported apple juice



concentrate for many years, beginning in 2003 it became the most important imported source, driving down imports from Argentina, Germany, and Chile, as well as from domestic suppliers. By 2007, China accounted for 82 percent of concentrated, not frozen apple juice imported, and the import share of U.S. apple juice consumption has averaged over 80 percent annually.

The influence of grape juice imports on U.S. grape juice consumption has not been as strong as for the apple juice industry, but it too has grown since the mid-1990s. Prior to this time, imports were mostly used to supplement domestic supplies during off-production years. Unlike the apple industry, where the share of domestic production going to juice has been declining over time, in the grape juice industry the share of production going to juice has remained fairly constant and the quantity of grapes going to juice has shown moderate growth since the 1990s and much of the first decade of the 2000s. Also unlike the apple industry, much of the grape juice production comes from Concord and Niagara grapes and production is independent of grapes grown for other uses. The rise in grape juice imports is mostly driven by increased demand for the juice used to blend with other beverages.

### ***How Americans Consume Fruit Juices***

Consuming fruit juices in juice form remains an essential means of fruit juice usage in the United States. This is especially true of orange juice and grapefruit juice, despite recent declines in demand for both. AC Nielsen Homescan data show orange juice to be far and above all other fruit juices bought by consumers during 2004 to 2008. A far second, although showing growth during this period, was purchases of cranberry juice. While the quantity of cranberries used to make juice is small relative to many other fruit, cranberry juice, as it is sold for consumption, consists of a blend of pure cranberry juice and either other fruit juices or water and sweetener. Pure cranberry juice is very tart and mostly consumed as cranberry cocktail or other similar blends. As such, the increased consumption of cranberry juice helps increase the demand for other fruit juices that may be used in the blended juice. Apple juice ranked third among fruit juices consumed as juice. Purchases of apple juice increased between 2006 and 2007.

Outpacing all fruit juice purchase during this period, however, were the purchases of fruit juice beverages, those beverages containing fruit juice, but generally not a pure juice. This category, does however, also includes individual serving sizes of fruit juice and juices that are a combination of more than one fruit, but it also includes a strong presence of beverages with fruit juice as a relative small component, such as Gatorade, Capri Sun, Hi-C, Sunny Delight, and many of the increasingly popular teas that use fruit juice for product differentiation. The increase in demand for these beverages has helped boost demand for apple and grape juice, which are among the most popular juices used for blending to help sweeten other juices and many fruit beverages.

Juices are also used to make other processed products. Grape juice is an important product in jams and jellies, as well as in pie fillings and some confectionaries. This is also true of cranberry juice used to make cranberry sauce and jelly, and apple juice used in other apple products as well as a sweetener in other processed food products.

### ***Where Is Fruit Juice Consumption Going In the Coming Years?***

At the present time, although Americans continue to consume fruit juices, the fruit beverage category, where pure juice is used as an ingredient, but is not the major component of the product, appears to be one of the more rapid growth beverage industries. Over the past 5 years, consumers have increased purchases of these beverages at a greater pace than for juice alone. The increasing demand for some fruit juices appear to be in response to their suitability as an ingredient in these beverages more than for the growing demand by consumers for pure juice. These juices are useful as a substitute for some sweeteners in products that claim to be natural as well as for beverages marketing for children. In the coming years, demand for juice as an ingredient, particularly apple juice and grape juice, is likely to continue to increase. As such, so will the demand for imports of these juices. Demand is also likely to increase for new varieties of fruit juices, such as pomegranate and mango juices. At the same time, it is less certain if Americans will increase their consumption of pure juices.

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The *Fruit and Tree Nuts Situation and Outlook Yearbook* has over 130 tables of annual or monthly time-series data on specific fruit commodities. Data include bearing acreage, production, prices, trade, per capita use, and more. To order a copy, call 1-800-999-6779.

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