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Fruit and Tree Nuts Outlook

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Declines Continue in U.S. Citrus Production

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World Agricultural
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USDA’s National Agricultural Statistics Service (NASS) current forecast for the U.S. citrus crop in 2016/17 is 7.77 million tons, down 9 percent from the final utilized total in 2015/16. This forecast shows a downward revision of almost 2 percent from the initial NASS forecast in October 2016. The domestic all-orange production forecast is 5.16 million tons, down 13 percent from 2015/16. Other major citrus crops, except tangerines and mandarins, are also expected to be smaller in 2016/17.

At the state-level, NASS forecasts 2016/17 California all-orange production at 2.07 million tons, down 4 percent from 2015/16. Both the navel and Valencia crops are expected to be smaller. The navel crop is estimated at 1.76 million tons, down 3 percent from last season, and the Valencia orange crop is estimated down 10 percent. Despite the smaller navel orange crop, fresh orange prices have been lower than last season through January 2017.

The Florida 2016/17 all-orange crop is forecast at 3.02 million tons, down almost 18 percent from last season. Grower prices for Florida processing oranges have averaged higher than last season thus far. With projected lower juice yields and a smaller orange crop, which mostly goes for processing, USDA’s Economic Research Service (ERS) forecasts orange juice production to decline 20 percent to 435 million single-strength equivalent gallons in 2016/17. Combined with lower beginning stocks, overall domestic supplies are reduced, which limits export growth.

Total U.S. grapefruit production in 2016/17 is projected down 6 percent to 754,000 tons, from 803,000 tons in 2015/16. Grapefruit grower prices have continued strong compared to last season on reduced production, especially in Florida, the largest grapefruit-producing State in terms of national and fresh-market volume.

The U.S. lemon crop is anticipated down 3 percent to 862,000 tons from the 2015/16 final utilized total of 890,000 tons. Despite lower production in Arizona and California, increased imports are likely contributing to the lower grower prices for fresh lemons.

In contrast, 2016/17 U.S. production of tangerines/mandarins is estimated at 990,000 tons—the largest crop on record, if realized. Production is expected to increase in California and Florida.

Price Outlook

Fruit and Nut Grower Price Index Lower

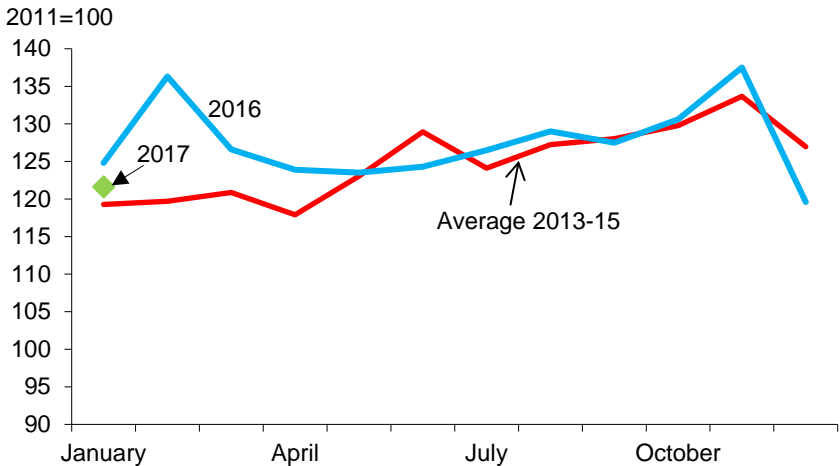
Grower prices in 2017 began the year weak compared to last year, evidenced by the lower grower price index for fruit and nuts in January. At 121.6 (2011=100), the index was down from the January 2016 index of 124.8 (fig. 1). Lower grower prices for fresh apples, pears, strawberries, and most citrus fruit (except grapefruit) held down the January index (table 1).

Large supplies of apples following the huge fall-2016 harvest continued to soften grower prices in January 2017 compared to the same time last year. More than half way through the season, storage apple supplies remain at higher-than-average levels as indicated by March 1 apple holdings data from the U.S. Apple Association, likely keeping prices below year-ago levels through the end of the season.

Despite reduced domestic pear production in 2016/17 (July-June marketing year), sluggish export demand, large supplies from Chile and other sources, and the current high-volume/lower-price apple market are all contributing to the downward pressure on fresh pear prices. With only a few months to the end of the season, tighter supplies could help strengthen prices.

Ample supplies from Florida and Mexico, the main sources of winter strawberries in the United States, eased early-winter strawberry prices. California volumes remained at seasonally low levels early into 2017, but supplies were running ahead of last year. Then heavy rains and cooler temperatures in February led to supply gaps in California, likely mitigating some of the downward push on mid-to-late-winter prices. As the weather improved in recent weeks, California fields continued to thrive, and supplies are expected to build up to peak levels in the next few months, likely driving down prices through the summer. California is the dominant strawberry producer in the United States, with year-round production.

Figure 1
Index of prices received by growers for fruit and tree nuts



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

Table 1--Monthly fruit prices received by growers, United States

Commodity	December		January		Year-to-year change	
	2015	2016	2016	2017	December	January
	-----Dollars per box-----				Percent	
Citrus fruit: ¹						
Grapefruit, all	11.43	12.15	10.70	10.77	6.3	0.7
Grapefruit, fresh	15.68	16.38	15.32	16.39	4.5	7.0
Lemons, all	24.42	21.36	23.05	22.44	-12.5	-2.6
Lemons, fresh	36.02	31.61	33.50	31.01	-12.2	-7.4
Oranges, all	9.59	9.59	8.96	9.91	0.0	10.6
Oranges, fresh	18.85	16.83	16.81	16.10	-10.7	-4.2
	-----Dollars per pound-----					
Noncitrus fruit:						
Apples, fresh ²	0.447	0.394	0.447	0.396	-11.9	-11.4
Grapes, fresh ²	1.035	1.185	--	--	--	--
Peaches, fresh ²	--	--	--	--	--	--
Pears, fresh ²	0.407	0.378	0.422	0.392	-7.1	-7.1
Strawberries, fresh	1.930	1.540	1.950	1.470	-20.2	-24.6

-- Insufficient number of reports to establish an estimate.

¹ Equivalent on-tree price.

² Equivalent packinghouse-door returns for CA, MI, NY, and PA (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*.

Fresh orange and lemon prices remained lower through January 2017 despite reduced production for the 2017/16 season. However, supply gaps in California due to recent winter rains likely boosted prices for the rest of the winter. Fresh orange prices could also receive a boost this spring and summer on forecast smaller crop of Valencia oranges in California. Meanwhile, grapefruit prices have continued strong on reduced production, especially in Florida, the largest grapefruit-producing State in terms of national and fresh-market volume. Grapefruit prices will likely continue to strengthen as U.S. supplies start to wind down seasonally during the spring.

Consumer Price Index for Fresh Fruit Continues To Drop

Declining below year-ago levels since December 2016, the Consumer Price Index (CPI) for fresh fruit was reported at 353.3 (1982-84=100) in February 2017, down from 369.0 in February 2016, but strong relative to recent years (fig. 2). Based on data from the U.S. Department of Labor, Bureau of Labor Statistics (BLS), year-to-year retail price declines for Red Delicious apples, strawberries, Thompson seedless grapes, and navel oranges (by only a small fraction) in February outweighed the upturn in grapefruit and lemon prices (table 2), weakening the February fresh-fruit CPI.

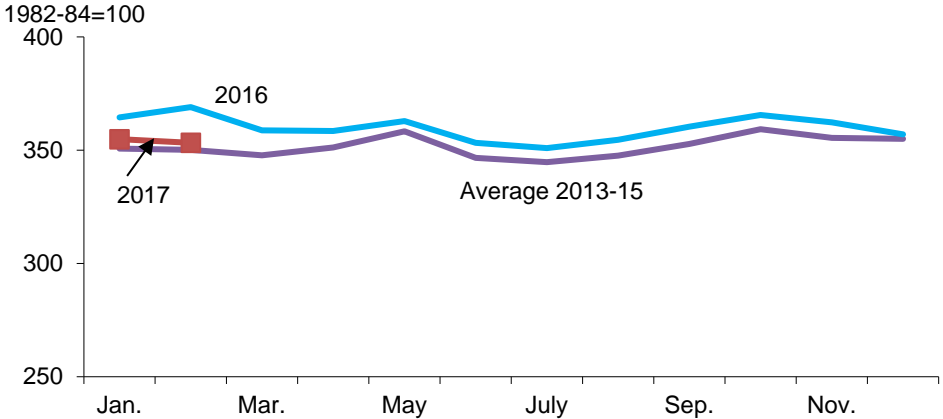
As with grower prices, elevated supplies are driving down apple and strawberry retail prices. For apples, this was indicated by the CPI for apples, which was consistently down from previous-year levels during the period from December 2016 to February 2017. Fresh-apple holdings remained raised through first-quarter 2017 and across most varieties, pointing to continued lower prices in coming months. Barring unfavorable weather, strawberry supplies will be ramping up volumes through the summer as the domestic market fully transitions to California supplies, likely continuing to weaken prices.

Grape import volumes from the Southern Hemisphere (mostly from Chile and some from Peru) have been coming in strongly since late 2016, but movement to market for these imports has been slow due to lingering California table grape inventories available to retailers, according to industry sources. USDA Agricultural Marketing

Service (AMS) data showed advertised retail prices for different varieties of table grapes averaged weaker than last year through much of the winter. The buildup in imported inventories has caused grape retail prices to fall below year-ago levels. Chile's production in 2016/17 is rebounding from the previous year's weather-reduced crop, prompting increased exports to top markets, including the United States. Reports of an earlier start to the 2016/17 Chilean grape season portend an earlier finish, which could ease some of the downward pressure on fresh grape prices this spring.

Banana retail prices strengthened some in February after registering mostly below year-ago levels since August 2016. AMS shipment data indicate cumulative import volumes this season through mid-March down from same time last year, likely providing some upward push on prices.

Figure 2
Consumer Price Index for fresh fruit



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

Table 2--U.S. monthly retail prices for selected fruit, 2016-17

Commodity	Unit	2016		2017		2016-17 change	
		January	February	January	February	January	February
--- Dollars ---							
Fresh:							
Navel oranges	Pound	1.196	1.194	1.186	1.191	-0.8	-0.3
Grapefruit	Pound	1.021	0.985	1.163	1.125	13.9	14.2
Lemons	Pound	1.956	1.922	1.937	1.970	-1.0	2.5
Red Delicious apples	Pound	1.450	1.441	1.247	1.200	-14.0	-16.7
Bananas	Pound	0.581	0.573	0.573	0.573	-1.4	0.0
Peaches	Pound	--	--	--	--	--	--
Anjou pears	Pound	--	--	1.577	1.570	--	--
Strawberries ¹	12-oz. pint	2.920	3.149	2.612	2.367	-10.5	-24.8
Thompson seedless grapes	Pound	3.535	3.614	3.238	2.836	-8.4	-21.5
Processed:							
Orange juice, concentrate ²	16-fl. oz	2.731	2.752	2.608	2.653	-4.5	-3.6
Wine	liter	12.180	12.233	12.391	12.363	1.7	1.1

-- Insufficient marketing to establish a price.

¹ Dry pint.

² Data converted from 12-fluid-ounce containers.

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

Lower U.S. Citrus Crop Expected for 2016/17

USDA's National Agricultural Statistics Service (NASS) current forecast for the U.S. citrus crop in 2016/17 is 7.77 million tons, down 9 percent from the final utilized total of 8.56 million tons in 2015/16 (table 3). This forecast shows a downward revision of almost 2 percent from the initial NASS forecast of 7.89 million tons in October 2016. Downward adjustments have been made to the initial forecasts for oranges (1 percent), mandarins/tangerines (1 percent), and lemons (6 percent). As of the March 2017 NASS *Crop Production* report, the domestic all-orange production forecast is 5.16 million tons, down 13 percent from 2015/16. Grapefruit production is expected to suffer another year of decline, dropping to 754,000 tons in 2016/17, 6 percent below last season and 17 percent smaller than 2014/15. Increased production is expected for mandarins/tangerines, with a 6-percent gain year-over-year, while lemon production is forecast to decrease 3 percent to 862,000 tons.

California Orange Production Decreased Slightly During 2016/17

The March issue of the NASS *Crop Production* report forecast the 2016/17 California all-orange production at 2.07 million tons, down 4 percent from 2015/16. While still a reduction, the year-over-year decline is not projected to be as steep as initially forecast in October 2016. The navel crop is estimated at 1.76 million tons, down 3 percent from last year. Heavy rains this winter mitigated the effects of the drought afflicting California for the past 5 years, but muddy groves delayed harvesting in February and early March. Movement of California oranges has been slower, with shipments through early March down 15 percent from the same period last year, based on AMS data. While the recent rains slowed the harvest, momentum picked up again once the weather improved.

According to the March *California Valencia Orange Objective Measurement Report*, Valencia orange-bearing acreage decreased to 30,000 acres, from 32,000 acres the prior year. The average trees per acre increased from 123 to 124; however, the average fruit set per tree in 2016/17 is down, declining 34 percent to 461 fruit per tree. This is the lowest average set per tree since the 2008/09 season. With less fruit on the trees, and the average fruit size up by only 2 percent, production is expected to decline. The March *Crop Production* report estimates 312,000 tons of Valencia oranges in California, 10 percent less than last season's final utilized production of 348,000 tons.

Despite the forecast decrease in the navel orange crop, fresh orange November prices were 7 percent below last season at \$19.76 per 80-pound box, interrupting a 3-year cycle of growing prices (table 4). Lower prices continued into December (down 13 percent from December 2015) and January (down 6 percent from January 2016). With navel orange production forecast to decrease this season, prices should recover, due partially to tight supplies and high quality.

The slower movement to market is not affecting exports. Historically, the bulk of U.S. fresh orange exports occur in the spring. Fresh orange exports for the season to date (November through January) were at 153,773 short tons, up 5 percent from the same time last season. Increase in export volume has occurred during the first 3

Table 3--Citrus: Utilized production, 2014/15, 2015/16 and forecast for 2016/17¹

Crop and State	Utilized		Forecast for	Utilized		Forecast for
	2014/15	2015/16	2016/17 as of 03-2017	2014/15	2015/16	2016/17 as of 03-2017
	---- 1,000 boxes ² ----			----1,000 tons ----		
Oranges:						
Early/mid-season and navel:						
California	39,000	45,500	44,000	1,560	1,820	1,760
Florida ³	47,400	36,100	33,000	2,133	1,625	1,485
Texas	1,170	1,351	1,450	50	57	62
Total ⁴	87,570	82,951	78,450	3,743	3,502	3,307
Valencia:						
California	9,200	8,700	7,800	368	348	312
Florida	49,550	45,500	34,000	2,230	2,047	1,530
Texas	282	340	350	12	14	15
Total	59,032	54,540	42,150	2,610	2,409	1,857
All oranges	146,602	137,491	120,600	6,352	5,911	5,164
Grapefruit:						
California	4,800	3,800	4,100	192	152	164
Florida	12,900	10,800	8,900	548	459	378
Texas	4,250	4,800	5,300	170	192	212
All grapefruit	21,950	19,400	18,300	910	803	754
Tangerines and mandarins:						
Arizona	170	--	--	7	--	--
California	18,700	21,700	23,000	748	868	920
Florida	2,265	1,415	1,490	108	67	70
All tangerines and mandarins	21,135	23,115	24,490	862	935	990
Lemons:						
Arizona	2,000	1,750	1,550	80	70	62
California	20,600	20,500	20,000	824	820	800
All lemons	22,600	22,250	21,550	904	890	862
Tangelos ⁴						
Florida	665	390	--	30	18	--
All citrus ⁵	212,952	202,646	184,940	9,059	8,557	7,770

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

²Net pounds per box: oranges in California (CA)-80 (75 prior to the 2010-11 crop year), Florida (FL)-90,

Texas (TX)-85; grapefruit in CA-80 (67 prior to the 2010-11 crop year), FL-85, TX-80; lemons-80 (76 prior to the 2010-11 crop year); tangelos-90; tangerines and mandarins in AZ and CA-80 (75 prior to the 2010-11 crop year), FL-95.

³Includes Temples. Beginning in 2016/17, Temples included in tangerines and mandarins for Florida. ⁴Beginning in 2016/17, tangelos are included in tangerines and mandarins for Florida. ⁵Totals may not be equivalent to the sum of the categories due to rounding.

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

months of the 2016/17 season relative to the same period last year, and it represents the first increase in U.S. fresh orange exports since the 2013/14 season. Increased exports to several major markets in East Asia have compensated for slightly lower shipments to Canada, the leading export market for U.S. oranges. USDA's Economic Research Service (ERS) forecast U.S. orange exports to reach 698,000 tons in 2016/17, down nearly 4 percent from last season.

From November 2016 through January 2017, fresh orange imports were 12,962 short tons, down 30 percent from the same period last season but 10 percent above the previous 5-year import average for the same three months. January imports were down 6 percent year-over-year, but remained 15 percent above the 5-year average. Typically, the first 3 months of imports represent 7 percent of total imports for the year. Given the smaller fresh-orange crop, but with a weakening dollar, ERS forecasts imports to be 171,502 short tons in 2016/17. If realized, imports would

Table 4--Fresh oranges: Average equivalent on-tree prices received by California growers, 2011/11-2016/17

Month	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	----- Dollars/box ¹ -----					
November	15.52	15.20	18.17	20.14	21.20	19.76
December	13.53	12.90	15.97	19.24	19.40	16.96
January	11.73	11.50	21.77	17.84	16.90	15.96
February	11.13	10.10	23.67	16.74	14.3	
March	10.84	10.13	23.41	16.14	13.14	
April	13.81	11.45	23.90	16.60	12.65	
May	15.47	14.05	23.70	16.77	14.17	
June	14.92	15.31	20.74	15.78	13.55	
July	11.03	11.90	18.17	14.24	12.7	
August	10.23	12.30	17.67	16.34	13.3	
September	12.53	14.80	18.27	20.04	14.9	
October	12.13	15.30	15.77	21.24	13.8	
Nov.-January average	13.59	13.20	18.64	19.07	19.17	17.56

¹75-lb box prior to 2010/11; 80-lb box thereafter.

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

be 5 percent below last season's final of 180,529 short tons. Mexico and Chile are the two most important suppliers of fresh oranges for the U.S. market. Mexico has shipped 22 percent fewer fresh oranges to the United States through January than in 2015/16, but 21 percent more than the past 5-year average for the same period. Imports from Chile normally take place between July and October.

Florida Orange Production Continues to Decline

Florida's 2016/17 all-orange crop is forecast at 3.02 million tons, down almost 18 percent from last season's 3.67 million tons. Currently, the non-Valencia orange forecast is 1.49 million tons, which is down 9 percent from 2015/16, and 30 percent below the 2.13-million-ton 2014/15 harvest. The non-Valencia crop has been revised downward since the October 2016 initial production forecast of 1.53 million tons, which would have been 6 percent less than the previous season's utilized harvest. According to the Florida Citrus Administrative Committee (FCAC) March 12 Utilization Report, all early- and mid-season oranges, as well as navels, were nearly fully harvested. The Valencia crop has faced similar downward revisions and is currently estimated at 1.53 million tons, down 25 percent from 2015/16. Harvest of Valencia oranges is slowed with 94.8 percent of fruit still on tree, which is well above last season with 76.3 percent for the same period but below 2014/15 at 98.1 percent. Aside from disease pressure, primarily citrus greening, moderate drought conditions in Florida's southern citrus-producing counties this season are also likely contributing to reduced production.

With overall Florida orange production down and about 95 percent of the oranges destined for processing, ERS forecasts orange juice production to decline 20 percent to 435 million single-strength equivalent (sse) gallons in 2016/17 (table 5). Lower juice yields and the decline in overall production so far this season will be supplemented by more imports. ERS forecasts imports to increase to 421 million sse gallons. If realized, this would represent an 8-percent increase from a season

ago. Already, year-over-year increases in imports have been reported in 3 out of 4 months of the marketing season. Lower beginning stocks and the decline in production have reduced overall domestic supply availability by 13 percent, which in turn limits increases in export volume. Monthly exports this season are sluggish, lagging below last season's volumes for 3 out of 4 months, with a rebound in January. Based on these early indications and lower domestic production levels, ERS forecasts U.S. orange juice exports to be down 2.5 percent for this season relative to last season.

Decreased exports and increased imports are estimated to offset lower domestic production and drive up orange juice ending stocks. ERS forecasts 2016/17 ending stocks at 470 million sse gallons, a 15-percent increase from last season's ending stocks. With lower beginning stocks and lower production, domestic consumption levels dip 26 percent to 706 million sse gallons. Per capita consumption is forecast to drop to 2.17 gallons per person for the 2016/17 season.

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

Season ¹	Beginning stocks	Production	Imports	Supply	Exports	Domestic consumption	Ending stocks	Per capita consumption
-----Million SSE gallons ² -----								Gallons
1986/87	202	773	396	1,371	72	1,099	200	4.55
1987/88	200	899	296	1,394	89	1,095	210	4.49
1988/89	210	961	272	1,443	72	1,140	231	4.63
1989/90	231	646	350	1,227	89	914	223	3.68
1990/91	223	868	320	1,411	94	1,161	156	4.61
1991/92	156	921	286	1,363	107	1,086	170	4.26
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	1,425	423	5.32
1996/97	423	1,437	256	2,116	148	1,397	571	5.15
1997/98	571	1,555	281	2,407	150	1,720	537	6.27
1998/99	537	1,236	350	2,124	147	1,447	530	5.21
1999/00	530	1,493	339	2,362	146	1,571	645	5.59
2000/01	645	1,387	258	2,291	123	1,470	698	5.18
2001/02	698	1,433	189	2,321	181	1,452	688	5.06
2002/03	688	1,250	291	2,229	103	1,419	707	4.90
2003/04	707	1,467	222	2,395	123	1,451	822	4.96
2004/05	822	970	358	2,149	119	1,407	623	4.77
2005/06	623	986	299	1,909	138	1,312	459	4.41
2006/07	459	889	399	1,747	123	1,248	376	4.15
2007/08	376	1,156	404	1,935	136	1,152	647	3.80
2008/09	647	1,060	317	2,025	125	1,221	679	3.99
2009/10	679	840	328	1,848	147	1,143	557	3.70
2010/11	557	919	265	1,742	210	1,140	391	3.67
2011/12	391	959	223	1,574	154	971	449	3.10
2012/13	449	847	421	1,717	159	1,024	534	3.25
2013/14	534	663	418	1,615	158	974	483	3.07
2014/15	483	610	458	1,551	111	937	518	2.93
2015/16	518	543	390	1,451	92	950	410	2.94
2016/17F	410	435	421	1,266	89	706	470	2.17

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

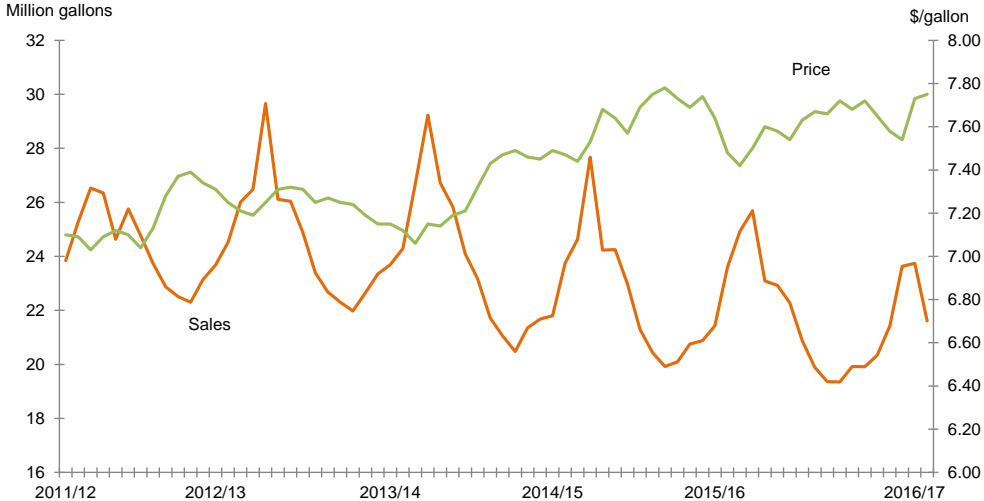
²SSE = single-strength equivalent.

Source: USDA, Economic Research Service.

The Florida Department of Citrus’s (FDOC) Nielsen retail sales data through February shows a trend of overall increased price per gallon and lesser sales. Total orange juice sales volume from October through mid-February is down 8 percent compared to the same time last year, with prices up 2 percent. Not-from-concentrate (NFC) orange juice sales are down 6 percent through mid-February, with prices up 2 percent (fig. 3). Prices for the season so far are averaging \$7.64 per gallon, compared to \$7.52 per gallon last year.

Grower prices for Florida processing oranges averaged \$7.30 per box this season through January, 8 percent higher than the same period in 2015/16 (table 6). Higher producer prices are important to offset rising production costs associated with growing disease pressure and resulting treatments. The FCOJ yield is now forecast at 1.43 gallons per box, 1 percent above last season’s final yield of 1.41 gallons per box.

Figure 3
Monthly NFC orange juice retail sales and price, 2011/12-2016/17



NFC = Not from concentrate.
Source: Florida Department of Citrus, www.fdocgrower.com.

Table 6--Processing oranges: Average equivalent on-tree prices received by Florida growers, 2011/12-2016/17

Month	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	----- Dollars per 90-lb box -----					
October	--	--	--	--	--	--
November	8.10	5.38	7.08	--	--	6.40
December	8.60	5.82	7.90	7.25	6.31	7.25
January	8.80	6.00	8.20	8.15	7.21	8.25
February	9.60	6.17	8.20	8.56	8.09	
March	10.90	8.40	10.35	10.04	8.72	
April	11.20	8.60	10.75	10.20	8.90	
May	11.10	8.70	10.95	10.30	9.00	
June	--	8.80	11.45	10.30	--	
Oct.-January average	8.50	5.73	7.73	7.70	6.76	7.30

-- = Insufficient data to establish price.
Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, various issues.

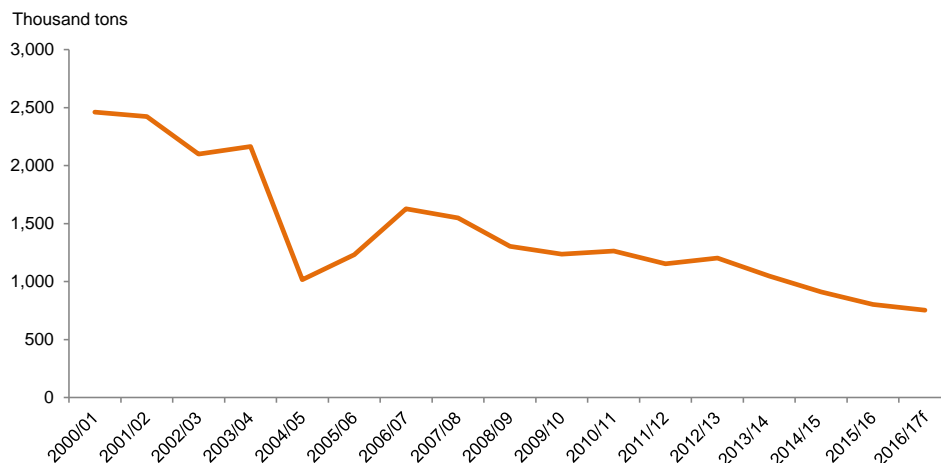
Grapefruit Production To Decline in 2016/17

Total U.S. grapefruit production is projected down 6 percent to 754,000 tons in 2016/17, from 803,000 tons in 2015/16 (fig. 4). Forecast increases in Texas (up 10.4 percent) and California (up 7.9 percent) are not large enough to offset losses in Florida (down 17.6 percent). Florida's estimated grapefruit crop of 378,000 tons was revised upwards since October's initial forecast of 319,000 tons. In March, Florida's grapefruit harvest continued at a steady pace but at levels lower than those of last season, driving up grower prices.

The season-average U.S. grower price for fresh grapefruit through January was \$18.79 per box, 16 percent above the same period last season (table 7). October prices were \$25.87 per box, up nearly 48 percent from the October 2015. While remaining above year-ago levels, prices have weakened each month since October as more fruit reached the market. However, Florida grapefruit supplies are decreasing quickly, which may shorten the season and result in some price rebound. Movement of fresh grapefruit reported by AMS shows a slowdown of 19 percent through early March when compared to the same period the year before.

Slow movement is also noted in the Florida Citrus Administrative Committee (FCAC) utilization report through mid-March, with 20 percent of the Florida grapefruit crop waiting to be harvested, compared to only 9 percent remaining on tree for the same period last year. The FDOC shipment data through March 12, 2017, has total fresh grapefruit movement down 27 percent season-to-date. Harvest was on going, with red grapefruit having the largest quantities going to the fresh market. FCAC currently has about 71 percent of all grapefruit going to processing through mid-March, with 96 percent of white grapefruit sent to processing and a corresponding 63 percent of red grapefruit. These figures are subject to change as the season progresses and more fruit moves from field to market.

Figure 4
Total U.S. grapefruit production, 2000/01-2016/17



f = forecast

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

Table 7--Fresh grapefruit: Average equivalent on-tree prices received by U.S. growers, 2011/12-2016/17

Month	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
----- Dollars/box ¹ -----						
October	10.44	16.28	7.96	15.42	17.54	25.87
November	10.09	11.40	12.63	12.99	16.51	16.53
December	10.13	9.87	12.73	12.49	15.68	16.38
January	10.03	10.70	13.07	10.92	15.32	16.39
February	10.29	9.16	11.73	10.43	14.95	
March	11.64	7.73	11.89	10.34	14.59	
April	12.67	9.11	10.85	9.92	18.06	
May	13.49	8.26	8.70	--	--	
Oct.-Jan. average	10.17	12.06	11.60	12.96	16.26	18.79

¹The net weight of a grapefruit box for Florida=85 lbs, for Arizona and California=80 lbs (67 prior to the 2010-11 crop year), and for Texas=80 lbs.

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

Table 8--Processing grapefruit: Average equivalent on-tree prices received by Florida growers, 2011/12-2016/17

Month	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
----- Dollars per 85-lb box -----						
October	3.00	-0.53	--	-0.04	-1.68	1.93
November	3.82	1.76	1.36	1.77	2.44	3.79
December	3.59	2.50	2.27	2.45	3.86	3.91
January	3.91	3.23	2.58	2.95	5.73	6.11
February	4.34	3.55	2.95	2.94	6.22	
March	4.41	3.47	2.91	3.16	5.85	
April	0.20	3.25	2.48	3.13	0.89	
May	--	--	--	--	--	
Oct.-Jan. average	3.58	1.74	2.07	1.78	2.59	3.94

-- = Insufficient data to establish price.

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

Season-to-date fresh grapefruit imports are experiencing a significant increase, with October 2016-January 2017 volumes 222 percent above the volume registered last season for the same period and 175 percent higher than the previous 4-year average. Though season-to-date exports are down 7 percent, most of the exports for the season are to occur in the coming months.

Season-to-date retail grapefruit juice sales are currently down 4 percent, with juice prices holding steady, according to FDOC's February Nielsen sales report. As fruit reaches processors throughout the season, domestic availability will increase and likely place downward pressure on prices, assisting in bolstering consumption. However, prices tend to strengthen during the latter half of the year due to seasonal declines in supplies. Florida grower prices for processing grapefruit are up from last season for the first 4 months of 2016/17 (table 8). Prices in January 2017 averaged \$1.93 per 85-lb box, which is the strongest price since 2012/13 for the same month. Despite the higher processing grapefruit grower prices, the FDOC reports grapefruit juice retail prices unchanged at \$7.77, season-to-date.

Forecast Lemon Production Drops Slightly for 2016/7 Season

The U.S. lemon crop is anticipated to be down 3 percent to 862,000 tons from the 2015/16 final utilized total of 890,000 tons, but only 1 percent down from the average utilized production of the last three seasons (table 3). Both Arizona and California are forecast to experience decreases in production this season. Specifically, production in Arizona is forecast to be down 11 percent, while California output will decrease 2 percent.

Despite lower domestic production, fresh lemon grower prices from August 2016 through January 2017 were 8 percent below the same period last season. The average price for the season through January is \$34.30 per box, compared to \$37.37 over the same period in 2015/16 (table 9). AMS reports that movement is down 9 percent this season through mid-March; however, increased imports are partially mitigating a sluggish domestic market and likely contributing to the ongoing lower prices. Slow movement is likely due to recent rains in California, which delayed harvesting. This season's forecasted decrease in production could reduce available supply and generate upward pressure on prices as the season continues.

Fresh lemon exports from August of 2016 through January 2017 are up less than 1 percent compared to last year, reaching 51,810 tons. Japan and Canada remain the two top destination markets for U.S. fresh lemons. Although season-to-date export shipments to both top markets are up, declines in other important market destinations such as South Korea and Australia are countering this growth.

Imports of fresh lemons from August 2016 through January 2017 were 6 percent above the same period last year, reaching 66,448 tons. Roughly 80 percent of lemon imports occur between August and January. The U.S. lemon market continues to be dominated by imports from Mexico and Chile. Mexico continues to be the main supplier of fresh lemons to the United States, and increased its exports to the United States so far this season by 17 percent. Fresh lemon imports from Chile, the second

Table 9--Fresh lemons: Average equivalent on-tree prices received by U.S. growers, 2011/12-2016/17

Month	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
	----- Dollars per box ¹ -----					
August	25.09	21.62	31.62	43.81	39.40	36.98
September	22.59	20.25	33.38	44.45	36.15	36.28
October	19.50	19.47	35.17	44.88	39.39	35.95
November	18.97	17.30	32.94	39.86	39.74	33.94
December	19.77	16.48	30.53	34.69	36.02	31.61
January	21.12	15.82	31.71	32.84	33.50	31.01
February	18.50	14.37	30.79	31.24	33.63	
March	17.89	13.72	30.73	30.05	32.40	
April	18.89	17.62	32.92	30.51	32.40	
May	21.29	21.92	35.02	37.81	37.30	
June	22.29	24.62	38.52	45.01	40.00	
July	20.59	25.82	44.22	47.21	37.90	
Aug.-Jan. average	21.17	18.49	32.56	40.09	37.37	34.30

¹Beginning in 2010/11, boxes are 80 lb. Prior to 2010/11, box size was 76 lb.

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

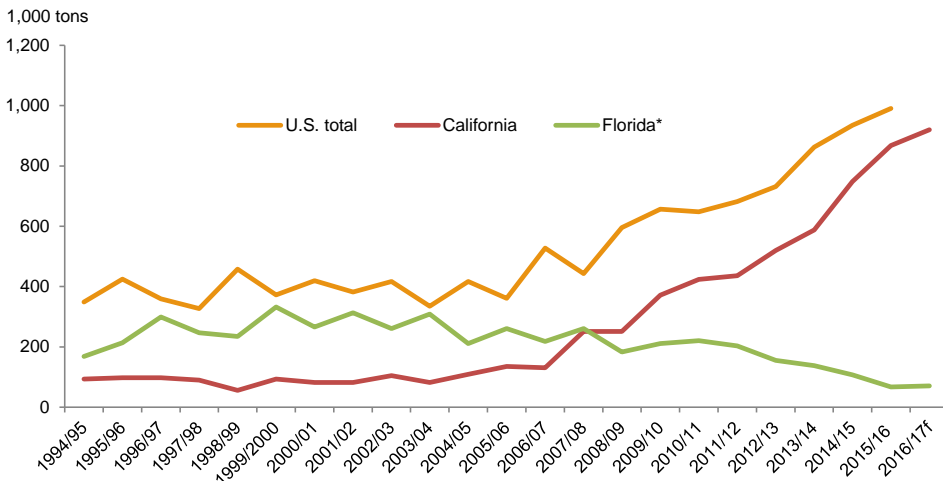
most important supplier, have decreased 24 percent. Important changes in the domestic market for fresh lemon may occur if the United States allows imports of lemons from Northwest Argentina.

Tangerines Production in California and Florida Is Up Thru 2016/17

Total production of U.S. tangerines and mandarins is estimated at 990,000 tons in 2016/17. If realized, this will be a 6-percent crop gain from the previous season and the largest production since records began in 1964/65. As of March’s NASS Crop Production report, California’s crop is estimated at 920,000 tons, up 6 percent from last season, if realized. Florida’s tangerine production is expected to increase by 4 percent year-over-year to total 70,000 tons. This increase, however, is solely attributed to NASS’s inclusion of Royal tangerines (classified as Temples prior to 2016/17) and tangelos to the State’s tangerine production estimate beginning in 2016/17. Prior to 2016/17, Temples were included in reporting Florida’s orange production and Florida tangelo production was reported separately. Based on the *Citrus March Forecast* report from the NASS Florida field office, Florida’s production of early-variety tangerines (Fallglo and Sunburst) and Honey tangerines, which together comprise about two-thirds of total production, actually declined by 30 percent in 2016/17.

The FCAC reported 7 percent of early-season tangerines/royals are yet to be harvested, which is an indication of a slower season. In 2015/6 there were only 2 percent left, whereas in 2014/2015 the harvest for the earlier varieties was already completed. Honey tangerine harvest is underway, with only 20 percent remaining as of March 12, according to the FCAC. AMS reports that tangerine movement is down 21 percent this season through early March.

Figure 5
U.S., California and Florida total tangerine production, 1994/95-2016/17



f = forecast.
 *Beginning in 2016/17, Royal tangerines (previously classified by NASS as Temples and included in Florida's orange production) and tangelos were included in reporting Florida's tangerine production.
 Source: USDA, National Agricultural Statistics Service (NASS), *Crop Production*.

Noncitrus Fruit

Ample Winter Strawberry Supplies Dampen Prices

Early 2017 strawberry supplies were abundant, thanks to weather-induced rebounding supplies from Florida and Mexico—main suppliers of strawberries in the U.S. market during the winter months. AMS data show cumulative shipment volumes from Florida and Mexico this season through early March were each up over 40 percent from the same period a year ago, leading to lower strawberry prices through most of the winter.

U.S. strawberry grower prices averaged \$1.47 per pound in January, down from the January 2016 average of \$1.95 per pound. In February, strawberry shipping-point prices in Central Florida averaged around \$10.40 per flat (18 (1-pound) containers with lids), down from \$15.65 the same time last year; Mexican strawberries, however, averaged higher prices than last year. Strawberry retail prices showed consistent lower trends, with averages in January and February dropping between 10-25 percent from the same two months last year, based on BLS data.

Along with the winding down of supplies from Florida and Mexico, supply gaps in California due to recent heavy rains have led to significantly lower strawberry shipments from the State to date and provided strength to early March prices. California strawberry fields, however, continue to thrive, and, as acreage is projected to be fairly steady for the 2017 harvest year, state-wide production has the potential to match or exceed last year's crop of 2.88 billion pounds, barring other major weather problems for the remainder of the season. If this potential is realized, prices are likely to weaken this spring through the summer relative to last year. California is the largest strawberry-producing State, supplying approximately 91 percent of total volume.

California strawberry acreage steady: Total strawberry acreage in California for 2017 is reported at 36,141 acres, relatively unchanged from 2016, according to the California Strawberry Commission's report *2017 California Acreage Survey*. Eighty-three percent of this acreage was planted last fall, producing for the winter, spring, and summer of 2017. Fall 2016 planted acreage increased almost 3 percent from the previous year. Among five growing districts, acreage expanded in the two largest districts—Watsonville/Salinas and Santa Maria—each accounting for 45 percent and 30 percent of fall planted area, respectively. Projected planted acreage for this summer, for production during the fall season, is anticipated to be down 10 percent from last year. More than half of this acreage will be in the Oxnard district where summer planted area is projected to remain relatively steady from last year. However, between 11-18 percent declines are anticipated in Santa Maria and the Watsonville/Salinas districts.

Record-high fresh per capita use in 2016; frozen use down: The fresh market is the principal outlet for U.S. strawberry production, of which over 86 percent is consumed in the domestic market. U.S. fresh strawberry per capita use increased to record-breaking levels year-after-year since 2002 until 2014 and 2015, when it declined primarily due to reduced domestic production (table 10). Imports, mostly from Mexico, also declined in 2015. As both domestic production and imports rebounded in 2016, estimated fresh per capita use increased to around 8.0 pounds

Table 10--Fresh strawberries: Supply and utilization in the United States, 1980 to 2016

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	6.26
2008	2,091.1	143.0	2,234.1	269.2	1,964.9	6.45
2009	2,288.0	187.2	2,475.2	271.8	2,203.3	7.17
2010	2,319.6	198.3	2,517.9	279.8	2,238.1	7.23
2011	2,332.4	243.5	2,575.9	279.6	2,296.4	7.36
2012	2,455.2	351.3	2,806.5	301.6	2,504.8	7.97
2013	2,508.5	330.6	2,839.1	306.3	2,532.7	8.00
2014	2,454.3	356.0	2,810.3	273.7	2,536.6	7.95
2015	2,437.2	314.4	2,751.6	273.4	2,478.2	7.70
2016 ¹	2,510.5	364.7	2,875.2	277.0	2,598.1	8.02

¹ Preliminary.

Source: USDA, Economic Research Service.

last year, up 4 percent from the previous year and matching the previous record in 2013.

The Processing Strawberry Advisory Board of California reported the 2016 pack estimate for frozen strawberries in the United States rose 4 percent from the previous year to 494.0 million pounds, product-weight equivalent. Compounding this increase was a 14-percent rise in beginning inventories, boosting overall frozen strawberry supplies in 2016 to 1,013.5 million pounds, up nearly 4 percent from the previous year and the highest on record (table 11). Though exports rebounded slightly in 2016 from the previous year (increases mostly to top markets—Canada and Mexico), reduced domestic demand raised ending inventories to 304.8 million pounds, 16 percent above the previous 5-year average. Historically, the U.S. frozen strawberry market has served as a residual market for the fresh, with the domestic market receiving about two-thirds of total frozen supplies.

Table 11--Frozen strawberries: Supply and utilization in the United States, 1980 to 2016

Year	Industry pack ²	Imports	Beginning stocks	Total supply	Ending stocks ³	Exports	Consumption	
							Total	Per capita product weight
							<i>Pounds</i>	
----- Million pounds-----								
1980	253.1	83.5	132.5	469.1	151.9	4.4	312.8	1.37
1981	210.6	60.1	151.9	422.6	115.2	6.6	300.8	1.31
1982	272.7	34.9	115.2	422.8	139.9	7.1	275.8	1.19
1983	292.7	42.6	139.9	475.2	176.6	5.9	292.7	1.25
1984	231.4	50.9	176.6	458.9	166.0	8.0	284.9	1.21
1985	229.2	59.7	166.0	454.9	167.1	6.6	281.2	1.18
1986	237.6	52.5	167.1	457.2	146.6	8.5	302.1	1.26
1987	334.4	75.3	146.6	556.3	236.0	10.8	309.5	1.27
1988	274.6	64.3	236.0	574.9	235.2	17.8	321.9	1.31
1989	238.2	55.0	235.2	528.4	167.2	20.5	340.7	1.38
1990	305.9	72.1	167.2	545.2	198.3	32.8	314.1	1.26
1991	330.2	70.5	198.3	599.1	219.9	26.1	353.1	1.39
1992	268.5	58.2	219.9	546.6	173.8	30.0	342.8	1.34
1993	365.7	54.5	173.8	594.0	214.1	40.4	339.5	1.31
1994	369.0	55.2	214.1	638.3	244.7	63.1	330.4	1.26
1995	371.1	73.5	244.7	689.4	255.1	53.1	381.2	1.43
1996	330.1	56.9	255.1	642.1	212.0	46.9	383.2	1.42
1997	328.2	61.0	212.0	601.1	220.5	47.3	333.3	1.22
1998	373.8	54.2	220.5	648.6	201.4	59.6	387.6	1.40
1999	419.8	89.8	201.4	711.0	277.7	55.6	377.7	1.35
2000	439.7	78.0	277.7	795.4	310.5	42.8	442.2	1.57
2001	422.4	76.0	310.5	808.8	243.7	42.9	522.2	1.83
2002	415.9	112.7	243.7	772.2	263.7	45.4	463.1	1.61
2003	429.1	120.1	263.7	812.9	247.2	22.9	542.8	1.87
2004	433.6	125.7	247.2	806.4	293.6	22.0	490.9	1.67
2005	416.5	161.6	293.6	871.7	218.8	22.2	630.7	2.13
2006	458.5	181.5	218.8	858.8	202.5	28.1	628.2	2.10
2007	502.2	182.2	202.5	886.8	280.2	32.0	574.6	1.90
2008	424.9	173.8	280.2	878.9	235.2	35.0	608.6	2.00
2009	482.4	170.3	235.2	887.9	322.5	32.1	533.4	1.74
2010	459.0	188.0	322.5	969.5	263.1	34.3	672.1	2.17
2011	458.3	193.1	263.1	914.6	291.7	45.1	577.7	1.85
2012	497.9	215.6	291.7	1,005.2	303.0	53.5	648.7	2.06
2013	460.0	199.3	303.0	962.3	279.1	62.9	620.3	1.96
2014	465.3	224.2	279.1	968.6	206.8	63.3	698.4	2.19
2015	473.2	298.9	206.8	978.9	235.9	50.3	692.8	2.15
2016 ¹	494.0	283.6	235.9	1,013.5	304.8	54.0	654.7	2.02

¹Preliminary.²After 2002, estimates from the Processing Strawberry Advisory Board of California. Previous estimates from the American Frozen Food Institute.³Stock data from USDA, National Agricultural Statistics Service, *Cold Storage Summary*.

Source: USDA, Economic Research Service.

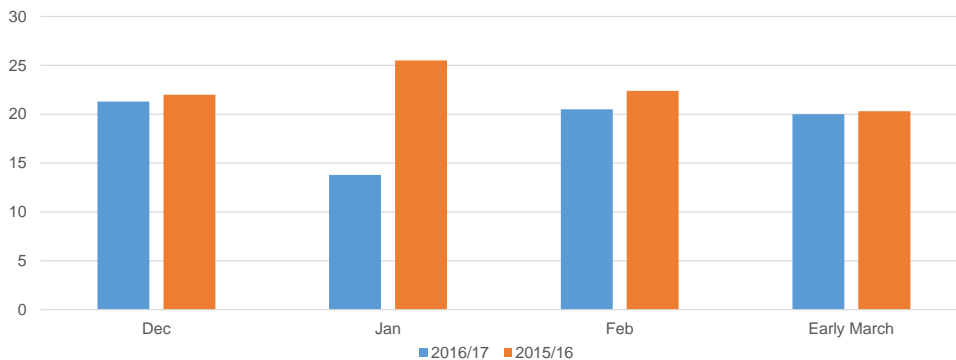
Imports Fill Void in U.S. Winter Blueberry Market

The fall and winter period mark the off-season for U.S. blueberry production. It is during this period when the domestic market transitions mostly to Southern Hemisphere supplies, with Chile as the main source. Mexican supplies also enter this market during the winter but extend throughout the spring, overlapping with early domestic production. Imports from Chile typically peak in January and February and wind down in April. However, unlike last season, Chile had an earlier harvest, prompted by a mild winter and warm spring in the region, which led to a spike in U.S. imports in December 2016 and continued large imports in January 2017.

Blueberry prices lower this winter: Huge supplies coming in from Chile late last year initiated the downward pressure on early 2017 prices (fig. 6). AMS data showed volumes from Chile in December 2016 were up 71 percent from the same time the previous year. Although dwarfed by Chile's supplies, significant increases

Figure 6
Average free-on-board shipping-point prices for Chilean blueberries ¹

\$ per flat (12 (1-pint) cups with lids per flat)



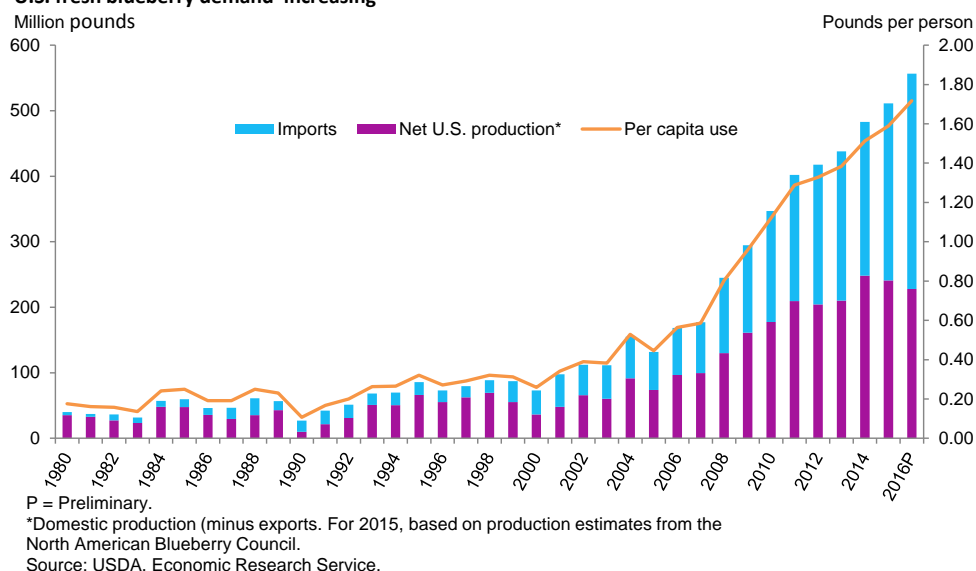
¹Nonorganic blueberries, port of entry in Miami area.
Source: USDA, Agricultural Marketing Service, Market News portal.

in imports from Mexico also compounded the supply-demand situation in the U.S. market, with continued higher year-over-year shipments through early March 2017. Although Chilean blueberry import shipments have slowed into early 2017, their prices continued to average below year-ago levels through much of the winter. Free-on-board shipping-point prices for Mexican blueberries crossing through Arizona, California, and Texas also averaged lower in January 2017 at \$12 per flat of 12 (6-ounce) cups with lids, compared with \$19 in January 2016, but have rebounded since. Having ample supplies to promote at retail this winter, U.S. consumers found blueberries to be cheaper, with advertised retail prices averaging 7-21 percent lower each month from December 2016 to early March 2017 than the same time the previous year across all package sizes.

Initial domestic production up, but supply gaps likely due to freeze: Domestic production kicks off with the Florida crop, with harvest commencing in March and reaching peak supplies in April. While still limited, early shipments from Florida during the first two weeks in March 2017 had total volume up 50 percent from the same time last year. Winter was mild in Florida, providing for better growing conditions for the crop compared to last year's cold and wet weather that delayed the harvest and led to tight supplies. Industry sources have indicated Florida supplies will gain momentum by late March and have ample promotable volume in April. Potential tight supplies in Georgia this spring due to a mid-March freeze in the U.S. southeast will likely strengthen blueberry prices this spring. Florida supplies usually keep a market presence until Georgia enters the market in mid-to-late April, followed by other major producing States that come into production during the summer months.

Domestic demand continues to climb: Fresh blueberry demand in the United States continues to grow on generally expanding domestic production and imports (fig. 7). In 2016, U.S. production increased, but the fresh-market crop declined due to smaller crops in Georgia, Florida, New Jersey, North Carolina and California—major producing States that have a larger share of their crops destined for the fresh market, based on estimates from the North American Blueberry Council. With increased imports, however, U.S. fresh blueberry per capita use in 2016 is estimated at 1.71 pounds, surpassing the record-high 1.58 pounds in 2015.

Figure 7
U.S. fresh blueberry demand increasing



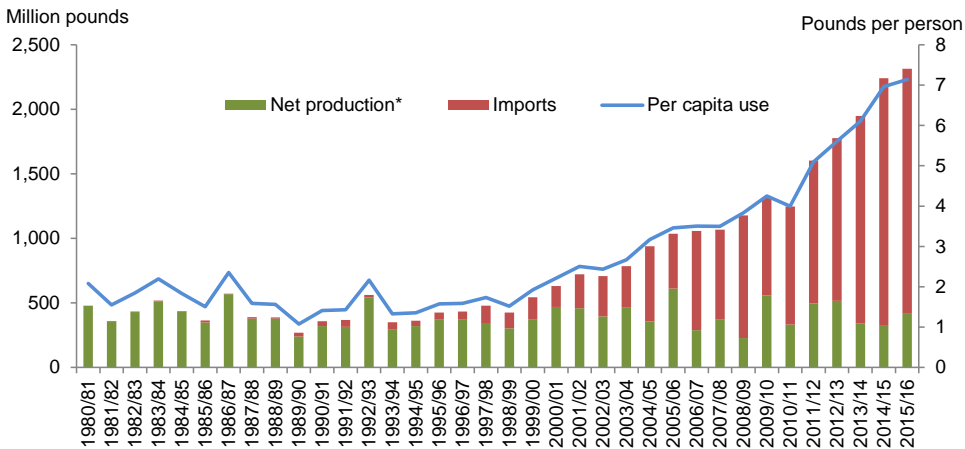
Avocado Supplies Reduced

U.S. avocado supplies are running lower than a year ago due to reduced imports from Mexico and a smaller crop in California. Arrival volumes from Mexico through early March 2017 have been erratic, with the year-to-date total down 9 percent from the same time last year, based on data compiled by the Hass Avocado Board. In California, harvest this winter has been limited to the typical maintenance picking and is expected to get in full swing this spring for the 2016/17 marketing season. However, although winter rains have aided fruit quality, avocado production in California is anticipated to be down in 2016/17, following a large harvest during the previous season.

Smaller California Crop to Boost Grower Prices: Early projections from the California Avocado Commission (CAC) indicate state-wide production to decline by as much as 44 percent from last season. This much of a year-over-year drop in production would yield only about 220 million pounds (or 110,000 tons) for California’s 2016/17 crop, down from NASS’s 2015/16 crop estimate of 392.0 million pounds (historical CAC pack estimates track closely estimates from NASS) and well below the previous 5-year average of over 350 million pounds. As California produces about 85 percent of all U.S. avocados each year, this huge decline point to a significant reduction in 2016/17 domestic production, likely raising grower prices for the season. During the 2015/16 season, the large domestic crop, along with near record-high imports, drove U.S. avocado grower prices to an average \$1,320 per ton, down from \$1,880 per ton the previous season.

Reduced supplies elevating prices for U.S. consumers: Harvest slowdowns in Mexico during the earlier part of the country’s 2016/17 avocado shipping season (July-June) may be partly to blame for the lower volumes exported to the United States to date. Although increased imports from Chile have partially offset import declines from Mexico in 2016/17 thus far, lower overall volumes have boosted prices for U.S. consumers. From January through early March, U.S. advertised retail prices for conventional-type Hass avocados have averaged \$1.15 each, up

Figure 8
Avocado imports play a dominant role in meeting growing U.S. demand



*Domestic production minus exports.
 Source: USDA, Economic Research Service.

from \$1.04 for the same period last year, based on AMS data. The USDA’s FAS’ overseas office in Mexico, however, reported in early December 2016 that exports from Mexico have resumed a normal pace but it remains to be seen whether or not higher imports from Mexico this spring and summer do materialize.

For more than a decade, imports have trended higher and served a dominant role in meeting the growing demand for avocados in the United States. Much of this growth in imports has been facilitated by Mexico’s year-round access to the U.S. avocado market. Recent-year imports have totaled nearly 2.0 billion pounds annually, making up over 80 percent of total supplies for domestic use, up from 424.8 million pounds in 2005/06 (or 41 percent of total supplies for domestic use). As a result, U.S. fresh avocado per capita use reached a record 7.1 pounds in 2015/16, more than double the estimate from a decade ago (fig. 8).

Tropical Fresh Fruit Supplies Lower

This year’s early supplies of fresh tropical fruit in the United States are lagging 2016 levels, based on import volumes. AMS shipment data show combined imports of bananas, pineapples, papayas, and mangoes in 2017 through early-March were down 18 percent from the same period a year ago. Cumulative import supplies of these more mainstream tropical fruit were mostly down, except for papayas. Yet, at retail, prices for these fruit have generally been lower this winter.

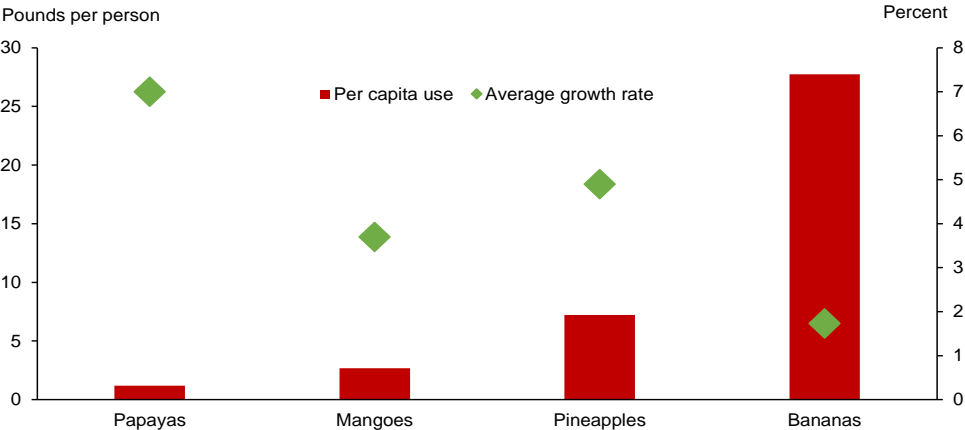
Making up 70 percent of combined cumulative shipments to date, banana imports were down 17 percent, mostly reflecting lower shipments from Guatemala, Ecuador, Honduras, Colombia, and Nicaragua. Despite reduced supplies, U.S. consumers continue to pay lower prices for bananas, in part due to diminished demand stemming from harsh winter weather in parts of the country and from a variety of competing fresh fruit now available in the market during the winter. BLS reported banana retail prices averaging steady to slightly below year-ago levels during the first 2 months of 2017.

Mango and pineapple imports have slowed more rapidly than banana imports, with declines of 18-32 percent. Season-to-date mango volumes were down from Peru and Ecuador, the result of an earlier harvest that helped boost both countries late-2016 supplies while reducing early-2017 volumes. However, despite some early-crop losses in Mexico from heavy rains and strong winds, mango shipments to the U.S. market increased year-to-year each month this winter to date. Like bananas, mango prices have averaged unchanged to 14-15 percent lower than the same time last year thus far. AMS data show U.S. advertised retail prices for mangoes averaged \$1.05 each in January, unchanged from the January 2016 average, and \$1.02- \$1.06 each in February and early March 2017, compared \$1.21-\$1.23 during the same time last year, when supply gaps elevated prices, according to industry reports. Nearly two-thirds of U.S. mango imports come from Mexico, with heaviest volumes during the spring and summer months.

As for pineapples, reduced supplies to date mostly reflect lower shipments from Costa Rica as weather-related events (rains and some periods of drought) have had some impact on the country’s early crop, affecting shipments to the U.S. market through this winter. Though pineapple advertised retail prices averaged below year-ago levels in January, these prices have rebounded in February and into March. For the same period, papaya prices, on a per pound basis, averaged lower on increased supplies, primarily from Mexico.

With only miniscule U.S. production of tropical fruit, growth in domestic tropical fruit demand continues to be primarily fulfilled by imports. Bananas continue to outrank all other fruit in terms of U.S. fresh import volume and fresh per capita use. Among the above-mentioned tropical fruit, bananas consistently show a distant lead, with average per capita use estimated at 28 pounds annually during the period 2012-2016, while the estimates for fresh pineapples, mangoes, and papayas each averaged less than 10 pounds (fig. 9). However, per capita demand for these other mainstream tropical fruit has grown at much faster average rates than bananas over the past 5 years.

Figure 9
Average per capita demand growth for bananas outpaced by other fresh tropical fruit, 2012-2016



Source: USDA, Economic Research Service calculations.

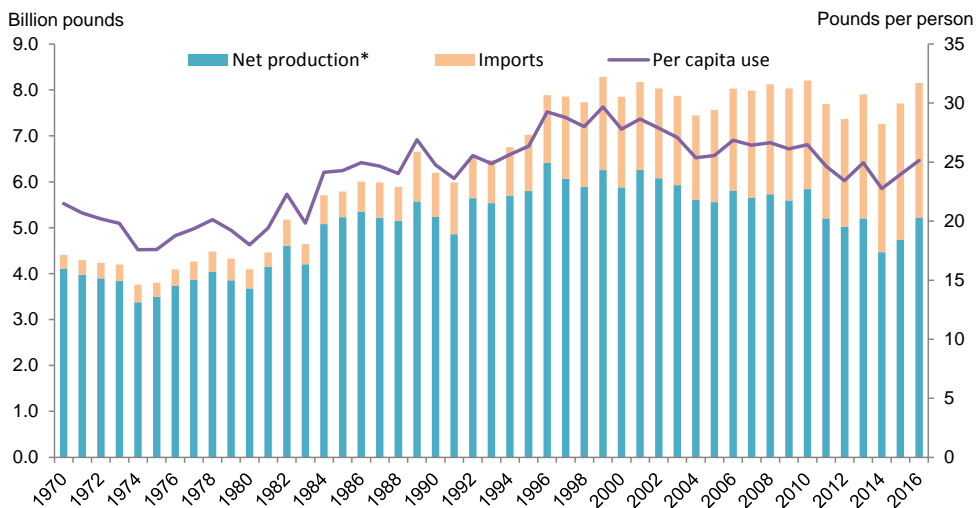
Melons

Melons Per Capita Use Up in 2016

In 2016, estimated domestic disappearance (also known as net domestic use, which is a proxy for consumption) of melons totaled 8.15 billion pounds, up 6 percent from the previous year and the highest over the last 5 years. This estimate translated to 25.1 pounds per person, up from the 24.0 pounds in 2015 and slightly above the previous 5-year average (fig. 10). Increases in domestic production of watermelons and cantaloupes and overall near-record-high melon imports boosted total melon supplies in 2016. Total melon imports have generally risen over the past few decades, gaining a bigger share of the U.S. fresh melon market—from an average share of less than 10 percent during the 1980s and 1990s to over 30 percent in the past 6 years. While the United States remains a net importer of melons, exports have also trended upward, diverting a small yet growing share of U.S. supplies away from the domestic market—from about 2 percent during the 1980s to around 7 percent from 2011-2016.

Watermelons: Total domestic disappearance (total supply minus exports) reached a record high in 2016 at the same time that per capita use was the highest in well over a decade (table 12). Significant gains in yield per acre more than compensated for reduced harvested acreage to boost U.S. fresh-market watermelon production to 4.01 billion pounds in 2016, up 13 percent from the previous year and the previous 5-year average. Production increased in major watermelon-producing States except in South Carolina which faced a 5-percent decline. The top 4 States—Florida, Texas, California, and Georgia—experienced crop size increases in 2016, ranging 10-31 percent. Once again, imports set a new high for a sixth straight year, totaling 1.71 billion pounds, and valued at \$328.9 million—also a record. Shipments from Mexico, which accounted for 84 percent of the total import volume, rose 5 percent in 2016 from the previous year, accompanied by sharp gains from minor import suppliers such as Costa Rica, Honduras, Brazil, and Canada.

Figure 10
All melons: Per capita use in the United States



* Domestic production minus exports.
Source: USDA, Economic Research Service.

Table 12--U.S. watermelons: Supply and utilization, 1970s average-2016

Year	Supply			Utilization			Trade shares of:	
	Production ¹	Imports ²	Total	Exports ²	Domestic	Per capita use	Use imported	Supply exported
	----- Million pounds -----			----- Pounds -----			----- Percent -----	
Average								
1970s	2,564.7	165.8	2,730.4	91.4	2,639.1	12.3	6.3	3.4
1980s	2,842.0	238.6	3,080.5	61.4	3,019.1	12.7	7.8	2.0
1990s	3,766.4	342.0	4,108.4	216.7	3,891.8	14.7	8.6	5.2
Annual								
2000	3,749.4	446.0	4,195.4	293.3	3,902.1	13.8	11.4	7.0
2001	4,047.8	483.5	4,531.3	249.4	4,281.9	15.0	11.3	5.5
2002	3,958.5	451.3	4,409.8	364.5	4,045.4	14.0	11.2	8.3
2003	3,832.7	489.2	4,321.9	383.7	3,938.3	13.5	12.4	8.9
2004	3,688.0	546.9	4,234.9	424.0	3,810.9	13.0	14.4	10.0
2005	3,702.3	659.8	4,362.1	349.9	4,012.2	13.5	16.4	8.0
2006	3,986.5	830.5	4,817.0	297.4	4,519.6	15.1	18.4	6.2
2007	3,734.9	902.7	4,637.6	286.0	4,351.6	14.4	20.7	6.2
2008	3,994.0	1,057.1	5,051.1	307.1	4,744.0	15.6	22.3	6.1
2009	3,893.1	1,002.6	4,895.7	307.9	4,587.8	14.9	21.9	6.3
2010	4,170.1	989.9	5,160.0	296.1	4,863.9	15.7	20.4	5.7
2011	3,612.7	1,044.3	4,657.0	343.2	4,313.8	13.8	24.2	7.4
2012	3,615.3	1,092.6	4,707.9	344.1	4,363.7	13.9	25.0	7.3
2013	3,610.2	1,302.9	4,913.1	332.9	4,580.2	14.5	28.4	6.8
2014	3,326.3	1,442.6	4,768.9	338.0	4,430.9	13.9	32.6	7.1
2015	3,547.5	1,555.3	5,102.8	332.3	4,770.5	14.8	32.6	6.5
2016	4,012.5	1,709.6	5,722.1	348.8	5,373.4	16.6	31.8	6.1

¹ Source: USDA, National Agricultural Statistics Service. Production data were estimated by ERS for 1982-91 based on available State data adjusted to the national level. Includes all uses.

² Source: U.S. Dept. of Commerce, U.S. Census Bureau.

Source: USDA, Economic Research Service (ERS).

Aided by increased availability, U.S. watermelon exports increased to 348.8 million pounds in 2016, up 5 percent from the previous year while the value of exported volume remained fairly steady at \$82 million. Export growth reflected a 4 percent increase in shipments to Canada, the top market for U.S. watermelon exports receiving nearly all of the volume, along with moderate to huge gains to Mexico, Bahamas, and Japan for much of the remaining volume.

As preparations were underway for the 2017 U.S. watermelon season to begin this spring, the U.S. market has looked to imports in meeting winter demand. AMS data show continued growth in imports in 2017, with the cumulative volume through mid-March up 32 percent from the same time a year ago. Almost two-thirds of total imports to date were the seedless type from Mexico, which were up substantially from the same time last year. Season-to-date positive import gains were also shared by shipments from Guatemala and Honduras, while weather-reduced supplies described shipments from Costa Rica. As supply availability has risen above last year thus far, consumers were fetching reduced prices this winter as observed in consistently lower average U.S. advertised retail prices in January through mid-March compared to the same period last year, especially for the red flesh miniature seedless type.

Cantaloupe: Domestic disappearance (or domestic use) in 2016 was estimated up 6 percent from the previous year to 2.3 billion pounds (table 13). With annual population growth at nearly 1 percent, domestic per capita use rose by 5 percent to 7.11 pounds in 2016. Supply availability last year was supported by increased domestic production and imports. National production realized almost a 2-percent increase from the previous year on expanded harvested area. However, crop size remained below average and was the third smallest since 2000. Production increases ranged between 5-27 percent in Arizona, Georgia, Indiana, and South Carolina but overall growth was limited by smaller crops in Texas, Pennsylvania, and most

Table 13--U.S. cantaloupes: Supply and utilization, 1970s average-2016

Year	Supply			Utilization			Trade shares of:	
	Production ¹	Imports ²	Total	Exports ^{2,3}	Domestic	Per capita use	Use imported	Supply exported
	----- Million pounds -----			----- Pounds -----			----- Percent -----	
Average								
1970s	1,163.7	166.3	1,330.0	46.7	1,283.3	6.0	13.0	3.5
1980s	1,716.7	257.3	1,974.0	87.7	1,886.4	7.9	13.3	4.5
1990s	1,953.1	691.9	2,644.9	117.6	2,527.3	9.5	26.8	4.4
Annual								
2000	2,177.4	1,119.2	3,296.6	155.5	3,141.0	11.1	35.6	4.7
2001	2,261.3	1,070.1	3,331.4	146.0	3,185.4	11.2	33.6	4.4
2002	2,244.3	1,108.6	3,352.9	156.1	3,196.8	11.1	34.7	4.7
2003	2,206.9	1,079.2	3,286.1	147.3	3,138.8	10.8	34.4	4.5
2004	2,129.8	910.8	3,040.6	160.7	2,879.9	9.8	31.6	5.3
2005	2,046.5	952.0	2,998.5	162.2	2,836.3	9.6	33.6	5.4
2006	1,949.8	962.8	2,912.6	146.4	2,766.1	9.3	34.8	5.0
2007	2,042.6	1,008.2	3,050.8	157.9	2,893.0	9.6	34.9	5.2
2008	1,929.4	931.0	2,860.4	157.7	2,702.7	8.9	34.4	5.5
2009	1,905.9	1,045.0	2,950.9	169.9	2,781.0	9.0	37.6	5.8
2010	1,880.8	949.2	2,830.0	186.1	2,643.9	8.5	35.9	6.6
2011	1,869.2	1,033.1	2,902.3	202.4	2,699.9	8.6	38.3	7.0
2012	1,670.6	841.7	2,512.3	150.1	2,362.1	7.5	35.6	6.0
2013	1,817.3	948.9	2,766.2	146.6	2,619.6	8.3	36.2	5.3
2014	1,361.2	902.2	2,263.4	161.5	2,101.9	6.6	42.9	7.1
2015	1,355.2	939.8	2,295.0	122.9	2,172.1	6.8	43.3	5.4
2016	1,376.4	1,041.9	2,418.3	114.5	2,303.9	7.1	45.2	4.7

¹Source: USDA, National Agricultural Statistics Service. Production data were estimated by ERS for 1982-91 based on available State data adjusted to the national level. Includes all uses.

²Source: U.S. Dept. of Commerce, U.S. Census Bureau.

³Exports for 1978-89 adjusted using Canadian import data.
Source: USDA, Economic Research Service (ERS).

importantly, about a 9-percent decline in California which supplied more than half of the total crop.

U.S. fresh cantaloupe imports rose 11 percent from the previous year to 1.04 billion pounds in 2016, mostly on higher shipments from dominant supplier Guatemala. Import value last year rose to a record \$250.1 million, while volume was the highest during the past 7 years. For the same period, export volume fell to a 21-year low at 114.5 million pounds, valued at \$35 million. Despite increased shipments to Mexico and to several other international markets, overall exports in 2016 declined 7 percent from the previous year due to reduced shipments to Canada, which received 72 percent of total export volume.

AMS shipment data indicate that continued slowed shipments from Costa Rica and Honduras have reduced overall import shipments into 2017 but continued increased supplies from Guatemala still provided retailers with ample supplies, fetching lower consumer prices. U.S. advertised retail prices for cantaloupes in January and February 2017 averaged 27-34 cents each lower than those for the same time last year. From a high of \$2.44 each around mid-January, prices have dropped to \$2.02 around mid-March, cheaper by 19 cents than during the same time last year.

Honeydew: Though area harvested in California was reduced in 2016, average yield per acre was much improved from the previous year, boosting state-wide fresh cantaloupe production 13-percent higher. Beginning in 2016, however, NASS production estimates for Arizona and Texas were discontinued, leaving only California to represent annual national production. Hence, U.S. fresh cantaloupe production last year declined by 7 percent year-over-year, totaling 352.0 million pounds (table 14). California has been the main source of U.S. cantaloupes, supplying around 80 percent of total fresh volume. Imports account for over one-

third of supplies for domestic use, while exports have remained at or below 10 percent of total U.S. supplies (production plus imports).

U.S. honeydew melon imports during the first two months of 2017 were running more than 20 percent behind import volumes for the same time last year, based on AMS data. However, lack of market demand has driven down prices. U.S. advertised retail prices averaged \$3.00 each from January through early March, 40 cents below the same period a year ago. As with other melons, U.S. honeydews come in season around late spring, with peak harvest in the summer months.

Table 14--U.S. honeydew melons: Supply and utilization, 1970s average-2016

Year	Supply		Utilization			Trade shares of:		
	Production ¹	Imports ²	Total	Exports ²	Domestic	Per capita use	Use imported	Supply exported
	----- Million pounds -----			---- Pounds ----			----- Percent -----	
Average								
1970s	251.4	18.7	270.0	25.1	245.0	1.1	7.7	9.7
1980s	437.1	61.7	498.7	23.5	475.3	2.0	12.4	4.8
1990s	455.7	143.1	598.7	48.0	550.7	2.1	25.8	8.2
Annual								
2000	511.6	174.1	685.7	46.8	638.9	2.3	27.3	6.8
2001	472.0	139.9	611.9	48.6	563.2	2.0	24.8	8.0
2002	506.5	171.5	678.0	47.3	630.6	2.2	27.2	7.0
2003	507.5	163.9	671.4	39.4	632.1	2.2	25.9	5.9
2004	478.1	165.6	643.7	42.2	601.5	2.0	27.5	6.6
2005	424.3	175.7	600.0	45.6	554.4	1.9	31.7	7.6
2006	422.1	187.3	609.4	46.2	563.2	1.9	33.3	7.6
2007	414.4	180.8	595.2	42.3	552.9	1.8	32.7	7.1
2008	369.0	191.5	560.5	46.3	514.2	1.7	37.2	8.3
2009	365.7	171.8	537.5	40.2	497.4	1.6	34.5	7.5
2010	370.4	188.8	559.2	43.1	516.1	1.7	36.6	7.7
2011	362.8	180.0	542.8	42.6	500.1	1.6	36.0	7.9
2012	328.6	180.1	508.7	43.3	465.4	1.5	38.7	8.5
2013	360.5	195.4	555.9	47.6	508.3	1.6	38.4	8.6
2014	373.9	193.6	567.5	40.6	526.9	1.7	36.7	7.2
2015	376.9	204.6	581.5	42.7	538.8	1.7	38.0	7.3
2016	352.0	173.7	525.7	51.1	474.7	1.5	36.6	9.7

¹ Source: USDA, National Agricultural Statistics Service.

² Source: U.S. Dept. of Commerce, U.S. Census Bureau. Honeydews do not have a separate HS code. From 1970-1979, trade was estimated as 50 percent of the category called "other melons." From 1980-1989, shipment data were used to estimate the distribution of the "other melon" category (ranged from 42 to 59 percent). Exports were not adjusted due to data limitations.

Source: USDA, Economic Research Service.

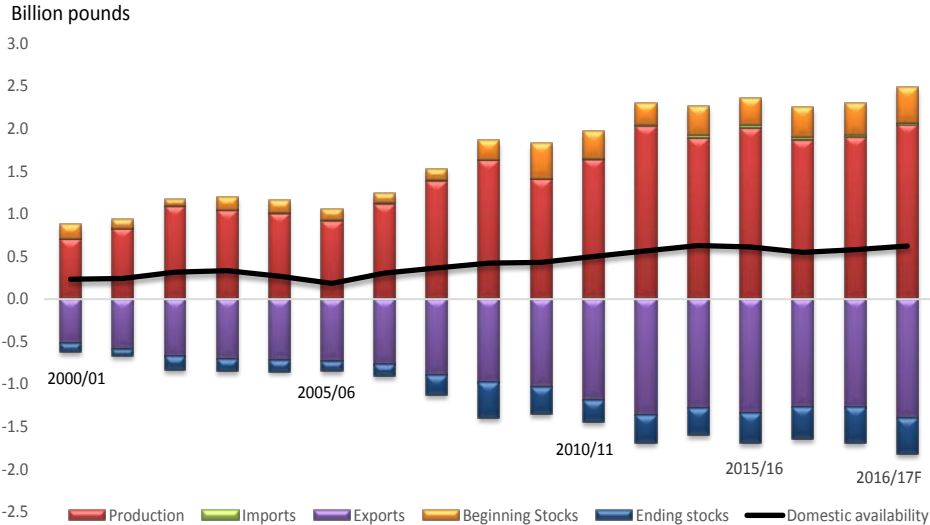
Tree Nuts

Largest Almond Crop Expected in 2016/17 Season

Expanded bearing acreage and higher yields are behind the larger almond crop in California during the 2016/17 marketing season (August-July). NASS forecast production at an estimated 2.05 billion shelled pounds, up 8 percent from the 2015/16 harvest total. If realized, this will be the largest crop on record, about 1 percent higher than the previous record, achieved in 2011/12. The current season's record-large production overlaps with huge beginning stocks (fig. 11), likely keeping downward pressure on 2016/17 almond prices.

The first estimate for the 2016/17 season-average grower price for California almonds will be available on June 27, 2016 when NASS releases the *Noncitrus Fruit and Nuts 2016 Summary* report. BLS producer price index (PPI) data for almonds indicate current-season grower prices have remained below previous-year levels, with the PPI down by an average 19 percent from the previous year for August 2016 through February 2017. Following 6 consecutive years of increasing prices, the season-average grower price declined from a record-high of \$400 per pound in 2014/15 to \$284 in 2015/16 on large domestic supplies and back-to-back years of sluggish demand. Slowed movement to domestic and international markets in 2014/15 and continued lackluster exports in 2015/16 drove ending stocks higher during both years, with ending stocks reaching a near-record total of 412.0 million pounds in 2015/16—the largest ending stocks during the past 6 years. California almonds are a heavily export-oriented crop with about two-thirds of production destined for international markets.

Figure 11
Record production and huge beginning stocks boost U.S. almond supplies in 2016/17



F = Forecast.
Source: USDA, Economic Research Service calculations based on total production estimates from the USDA National Agricultural Statistics Service, *Crop Production* (released March 9, 2016), U.S. trade data compiled from U.S. Department of Commerce, U.S. Census Bureau, and stocks data from the Almond Board of California.

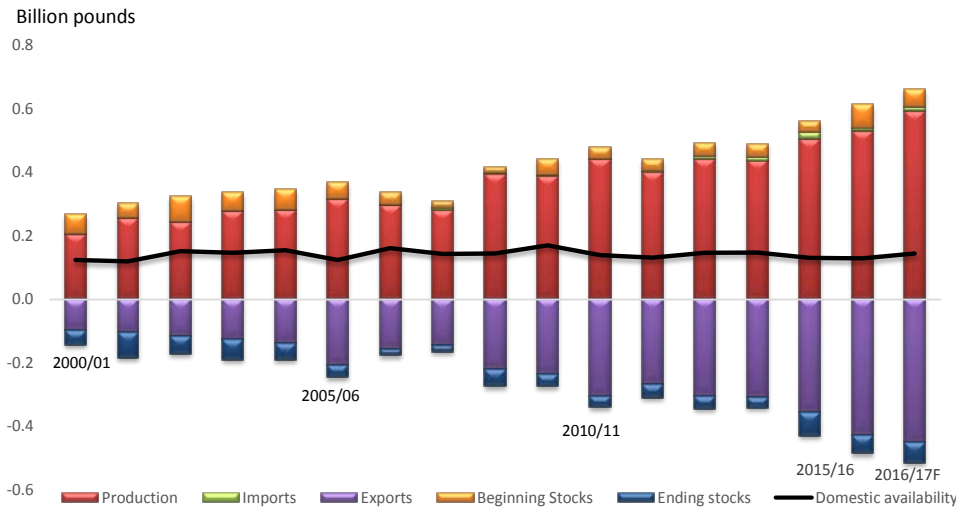
Almond Board of California data indicate higher shipments to domestic and export markets in 2016/17 through February, with increases of 13 percent and 35 percent, respectively, from the same period in 2015/16. Exports are up to almost all regional partners. While stocks remain high, improved overall demand for California almonds should help mitigate any buildup in ending stocks this season.

Walnut Production Also Forecast To Be the Largest in 2016/17

Similar to California’s almond crop, increases in bearing acreage and yield per acre have aided the expected record-high walnut production in the State during the 2016/17 season (September-August). Crop size this season is forecast to reach 670,000 tons, in shell-basis, increasing 11 percent from 2015/16, the third straight year of record-breaking output if achieved. Despite strong exports during 2015/16, ending stocks carried over into the current season (2016/17) remained fairly large (averaging 24 percent above the past few years) on last season’s huge domestic crop, record-high beginning stocks, and sluggish domestic demand. Record production, along with continued large beginning stocks, will likely continue to dampen walnut grower prices in 2016/17. On the bright side, lower prices should help bolster overall demand this season.

Data from the California Walnut Board show total shipments this season through February 2017 are up 25 percent from the same period in 2015/16. Strong shipments of shelled walnuts have boosted total domestic shipments by 18 percent thus far. This time last year, year-to-date domestic shipments fell by 2 percent. On the international side, both shelled and in-shell shipments of California walnuts appear to be robust, particularly to Europe, the Middle East, and Asia. Trending upward, in volume terms, exports have shown a growing presence in the market for U.S. walnuts—increasing in share from nearly 50 percent of domestic production during 2000/01-2005/06 to over 70 percent in 2010/11-2015/16 (fig. 12).

Figure 12
Exports having a growing presence in markets for U.S. walnuts



F = Forecast.
Source: USDA, Economic Research Service calculations based on total production estimates from the USDA National Agricultural Statistics Service, *Crop Production* (released March 9, 2016), U.S. trade data compiled from U.S. Department of Commerce, U.S. Census Bureau, and stocks data from the California Walnut Board.

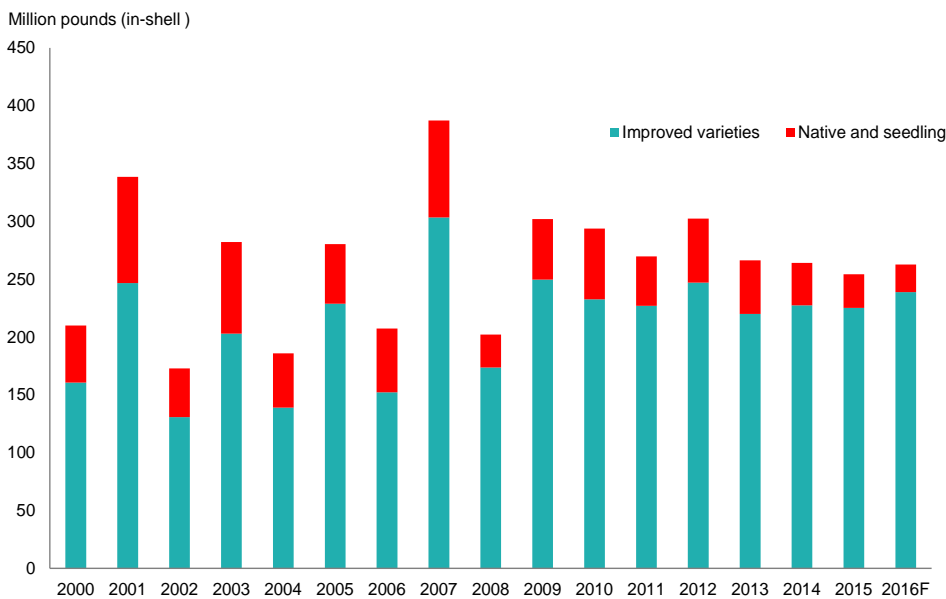
U.S. Pecan Production Forecast Up in 2016/17

U.S. pecan production for the 2016/17 marketing season (October-September) is forecast at 262.7 million pounds, utilized in-shell basis, up 3 percent from the previous year. This increase comes from the pecans produced from improved varieties which accounted for 91 percent of the crop (fig. 13). The native-variety crop, meanwhile, continued to decline significantly in 2016/17. Large declines in native-variety production in recent years have diminished the strong alternating “off year” and “on year” pattern in the pecan production cycle. Domestic production declined for 3 consecutive years since the last “on year” crop in 2012/13.

Georgia, New Mexico, and Texas remain the top three pecan-producing States in 2016/17 and together will account for 81 percent of U.S. production. Beginning in the 2016 crop year, NASS discontinued pecan production estimates in Arkansas, Florida, Kansas, Mississippi, Missouri, and South Carolina which together produced less than 5 percent of total production over the last few years. Current-season production increases are expected in most States, except New Mexico (down 1 percent from 2015/16) and Louisiana (down 20 percent).

Increased domestic production, fairly large beginning stocks, and strong year-to-date imports (for both in-shell and shelled pecans) point to an overall boost in U.S. supplies in 2016/17, potentially driving down prices. Demand is strong for U.S. pecans in the international market, particularly for the shelled nuts. Although export volume of in-shell pecans has remained sluggish this marketing season through January 2017, year-to-date shelled export volume has risen 46 percent above the same period in 2015/16, with gains to many of the key markets in North America, Europe, the Middle East, and East and Southeast Asia.

Figure 13
Pecan production in the United States comprised mostly of improved varieties



F = forecast.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts Summary*, various issues.

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Related Websites

Fruit and Tree Nuts Outlook

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1378>

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<http://www.ers.usda.gov/topics/crops/fruit-tree-nuts.aspx>

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