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Fruit and Tree Nuts Outlook

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Larger Crops Forecast for Major Noncitrus Fruit and Tree Nuts in 2018

Despite some weather issues, nearly steady to moderately increased production levels are forecast for U.S. apples, pears, grapes, and peaches in 2018 relative to a year ago, likely putting downward pressure on grower prices. Sweet cherry output is expected to decline, but gains are anticipated for tart cherry, strawberry, and cranberry output. Bigger crops are also forecast for almonds, walnuts, and hazelnuts this year, which will likely boost overall U.S. tree nut supplies in the 2018/19 marketing year. The 2017/18 U.S. citrus season finished with production declines for all citrus fruit, except lemons, which resulted in generally strong citrus prices for the season.

Anticipated near-record 2018 apple harvest, large storage-apple supplies, and low end-of-season prices in 2017/18 will likely dampen early 2018/19 grower prices. Meanwhile, tight supplies of California pears resulted in strong early-season fresh pear grower prices. However, bigger pear crops in Washington and Oregon should boost supplies as the harvest in the U.S. Northwest gets into full swing this fall, likely putting downward pressure on prices in the coming months. U.S. cranberry production in 2018 is forecast up 3 percent from the previous year, which would make it the third-largest on record if achieved. As in recent years, ample production and large beginning stocks of cranberries will likely continue to put pressure on 2018/19 grower prices. However, recently approved volume-control measures for cranberries under the Federal Marketing Order indicate brighter prospects for a more balanced market for U.S. cranberries going forward. For the two most produced tree nuts in the United States, continued above-average beginning stocks will further boost walnut supplies while lower carry-in supplies will partly offset the larger almond crop.

Price Outlook

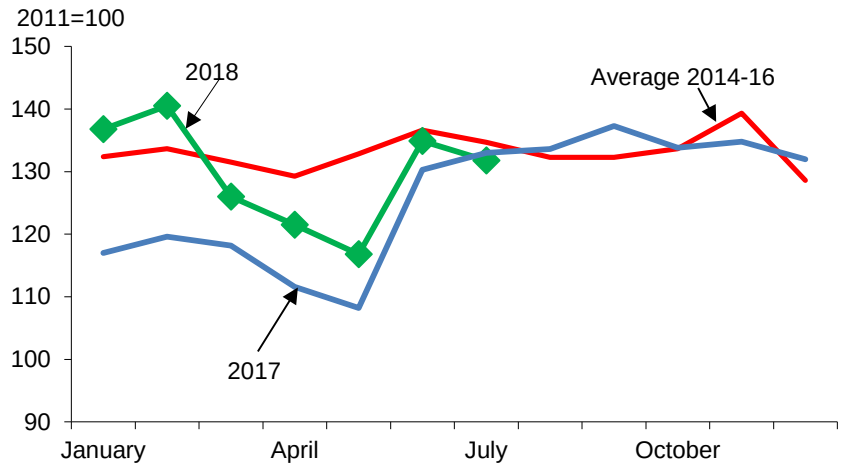
Fruit and Nut Grower Price Index Weakens

Fruit grower prices weakened in the early part of the second half of 2018, reflected in the slightly lower grower price index for fruit and nuts in July. At 131.8 (2011=100), the July 2018 index fell below the July 2017 index of 133.0 after increasing year-over-year throughout the first half of the year (fig. 1). Moderate to significantly lower prices for major citrus fruit, fresh apples, peaches, and strawberries drove the July index down (table 1).

The larger-than-expected, near-record apple crop harvested in the fall of 2017 led to significantly higher inventories and lower fresh apple grower prices through most of the second half of the 2017/18 marketing season (August-July). With another anticipated near-record production during the 2018 harvest, competing large storage-apple supplies and low end-of-season prices in 2017/18 will likely dampen early-season apple prices in 2018/19.

Based on USDA, Agricultural Marketing Service (AMS) shipment data, tight pear supplies, especially in California, drove fresh pear grower prices higher at the start of the 2018/19 marketing season (July-June). Bigger crops are forecast in Washington and Oregon and as harvest in the Northwest gets into full swing this fall, expected increased supplies in the region will likely put downward pressure on fresh pear prices in the coming months.

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



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

Despite the forecast larger U.S. table grape crop this year, fresh grape supplies in the 2018/19 marketing season (May-April) remained tight through mid-summer. Lower volumes in California and weather-reduced supplies from Mexico provided a boost to fresh grape prices this season through July. Expected increased peach production in 2018 has driven down fresh peach prices. Similarly, despite expected slightly lower strawberry production this year, continued increased shipments in August through early September likely will contribute to lower fresh strawberry prices for those months.

By early summer, Florida grapefruit supplies had run out but higher shipment volumes from California in July compared to the same time last year weakened fresh grapefruit prices during the month. Increased lemon shipments resulting from a bigger crop in California and seasonally rising imports also drove down fresh lemon prices. Meanwhile, reduced domestic production continued to keep fresh orange prices strong in 2017/18 through July. Harvest for the 2018/19 California navel crop is expected to begin in October. The crop is forecast to be up 11 percent from the year before, pointing to a potential downward push on fresh orange prices relative to 2017/18.

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

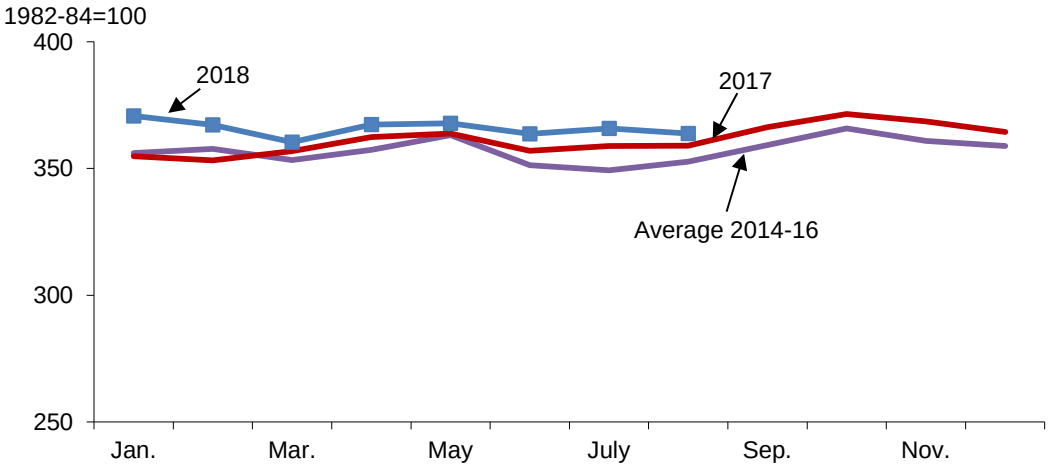
Commodity	June		July		Year-to-year change	
	2017	2018	2017	2018	June	July
	Dollars per box				*Percent*	
Citrus fruit: [1]						
Grapefruit, all	15.37	14.71	14.28	13.98	-4.3	-2.1
Grapefruit, fresh	--	--	--	--	--	--
Lemons, all	40.90	29.14	41.85	40.34	-28.8	-3.6
Lemons, fresh	46.18	32.55	45.78	44.15	-29.5	-3.6
Oranges, all	17.68	23.08	19.49	18.90	30.5	-3.0
Oranges, fresh	21.56	28.78	24.21	26.45	33.5	9.3
Noncitrus fruit:						
Apples, fresh [2]	0.363	0.289	0.370	0.311	-20.4	-15.9
Grapes, fresh [2]	0.845	1.275	0.765	0.800	--	4.6
Peaches, fresh [2]	0.765	0.565	0.855	0.570	-26.1	-33.3
Pears, fresh [2]	0.367	0.399	0.316	0.394	8.7	24.7
Strawberries, fresh	0.592	0.527	0.741	0.660	-11.0	-10.9

-- 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.*

Consumer Price Index for Fresh Fruit Remains Strong

The Consumer Price Index (CPI) for fresh fruit from the Bureau of Labor Statistics (BLS) was reported at 363.8 (1982-84=100) in August, up from 359.1 in August 2017 and stronger than in recent years (fig. 2). Boosting the fresh fruit CPI for the month were higher August retail prices for navel oranges, grapefruit, lemons, bananas, peaches, strawberries, and Thompson seedless grapes relative to the same time last year (table 2).

Figure 2
Consumer Price Index for fresh fruit



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

As with grower prices for apples, increased domestic supplies drove retail apple prices down from a year ago. Although prices for Red Delicious apples were not available, BLS data on the CPI for apples was consistently lower than the previous year for May-August 2018, indicating generally weak apple prices from spring into mid-summer. Increased harvest activity this fall should lead to seasonal declines in retail apple prices for the rest of this year, and the expected larger-than-average 2018 crop suggests favorable prices for consumers in 2018/19.

Tight early domestic grape supplies and lower volumes from Mexico contributed to higher retail prices for fresh grapes in July and August relative to the same time a year ago. The harvest in California's San Joaquin Valley is now underway, and the anticipated ample table grape harvest in the State will likely soften these prices into the early fall.

Higher domestic strawberry shipments, the winding down of imports from Mexico in the early summer, and increased supplies from Canada put conflicting pressures on retail strawberry prices. Meanwhile, banana import shipments have been mostly down this season boosting retail

Table 2--U.S. monthly retail prices for selected fruit, 2017-18

Commodity	Unit	2017		2018		2017-18 change	
		July	August	July	August	July	August
		--- *Dollars* ---		--- *Dollars* ---		--- *Percent* ---	
Fresh:							
Navel oranges	Pound	1.462	1.453	1.538	1.559	5.2	7.3
Grapefruit	Pound	1.333	1.333	1.386	1.422	4.0	6.7
Lemons	Pound	2.093	2.138	2.198	2.463	5.0	15.2
Red Delicious apples	Pound	1.354	1.347	na	na	na	na
Bananas	Pound	0.565	0.561	0.575	0.569	1.8	1.4
Peaches	Pound	2.084	1.952	2.080	2.060	-0.2	5.5
Anjou pears	Pound	1.629	1.653	1.662	--	2.0	--
Strawberries [1]	12-oz. pint	2.036	1.979	2.007	2.004	-1.4	1.3
Thompson seedless grapes	Pound	2.420	2.213	2.774	2.282	14.6	3.1
Processed:							
Orange juice, concentrate [2]	16-fl. oz	2.827	2.868	2.504	2.440	-11.4	-14.9
Wine	liter	12.511	12.712	12.328	12.289	-1.5	-3.3

na = Not available.
-- 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.

prices through most of the first 8 months of 2018. Industry sources reported that a mix of cold weather and/or rains has slowed production across major banana-producing countries in Latin America.

Despite higher imports, navel orange retail prices have remained strong due to tight domestic supplies. Prospects for improved shipment volumes this fall from the forecast larger navel crop in California will likely soften navel prices in 2018/19. Continued reduced processing orange volume and juice yield in Florida lowered U.S. orange juice production in 2017/18; however, increased imports and likely slowed demand are helping to mitigate domestic supply pressures, driving 2017/18 retail orange juice concentrate prices down from last year thus far. As the 2017/18 grapefruit season transitions to the new crop, overall tight supplies have driven up August prices. Meanwhile, as U.S. lemon supplies tapered off for the season and imports slowed, retail lemon prices have risen above year-ago levels since late spring.

Noncitrus Fruit Outlook

Larger Noncitrus Fruit Crops To Pressure Grower Prices

Despite some weather issues, U.S. apple, pear, grape, and peach crops are forecast to be nearly flat to moderately larger in 2018 relative to a year ago, putting downward pressure on grower prices. Sweet cherry output is expected to decline, while gains are anticipated for tart cherry, strawberry, and cranberry output.

U.S. Apple Crop Almost Unchanged From A Year Ago

The 2018 U.S. apple crop is forecast at 11.5 billion pounds, up less than 1 percent from the upwardly revised estimate in 2017, based on USDA's National Agricultural Statistics Service (NASS) *Crop Production* August 10 release. If realized, the 2018 crop would be the second-highest in the last 10 years. Production in the Western States (led by Washington, California, and Oregon) is expected to be down 4 percent, nearly offsetting rebounding output in the Central States, specifically in Michigan where the small crop last year contributed to a heavy bloom set this growing season (table 3). Though production in Washington—the nation's largest apple-producing State—is forecast down slightly in 2018, State-wide crop size remains above the previous 5-year average. The apple harvest in Washington is expected to be of average quality due to the hot weather, with growers needing to take extra measures to protect their crop from sun damage. The New York crop is expected to be unchanged from a year ago with hardly any weather-related issues dampening bloom and pollination activities. This, along with increases in a few other Eastern States, will likely keep output for the region nearly flat, despite smaller crops in other key States in the region (i.e., Pennsylvania and Virginia).

Large storage-apple supplies compete with slightly higher fresh-market output: Last year's apple crop was larger than expected and by June 1, 2018, fresh apple holdings were up about a quarter from the same time a year ago and above the previous 5-year average, according to the U.S. Apple Association. Despite steady to strong fresh apple grower prices through the first 5 months of the 2017/18 marketing season (August-July), monthly average prices since January fell consistently below previous-year levels, with greater year-over-year declines from May to July. USDA's Economic Research Service (ERS) projects approximately 7.8 billion pounds of production will go toward fresh use in 2018/19, up 1 percent from the previous year and in keeping with the 3-year average fresh-use share of about 70 percent of

Table 3--Apples: Total production and season-average price received by growers, 2015-17, and indicated 2018 production[1]

States	Production				Price		
	2015	2016	2017	2018	2015	2016	2017
	-- *Million pounds* --				-- *Cents per pound* --		
Eastern States:							
Connecticut	25	13	30	16	58.5	97.3	67.9
Maine	36	37	44	48	50.4	48.3	43.8
Maryland	41	38	43	40	20.2	26.4	19.4
Massachusetts	43	29	39	43	53.0	44.5	38.6
New Hampshire [3]	20	na	na	na	63.8	na	na
New Jersey	42	35	42	49	88.6	107.0	93.6
New York	1,360	1,180	1,300	1,300	20.7	27.6	26.8
North Carolina	105	104	100	115	20.7	23.7	24.7
Pennsylvania	519	442	528	504	19.1	19.8	22.3
Rhode Island	2	na	na	na	83.1	na	na
Vermont	36	27	25	20	43.2	68.5	74.2
Virginia	195	180	225	220	17.7	20.1	21.7
West Virginia	92	80	102	110	15.2	19.0	18.0
Total	2,517	2,164	2,477	2,466			
Central States:							
Illinois	21	19	22	24	55.8	87.2	64.7
Indiana [3]	23	na	na	na	38.2	na	na
Iowa [3]	5	na	na	na	86.3	na	na
Michigan	995	1,275	840	1,175	23.6	25.5	30.0
Minnesota	26	19	23	22	81.0	81.5	86.2
Missouri [3]	28	na	na	na	44.0	na	na
Ohio	51	34	47	45	42.1	52.0	47.8
Tennessee [3]	5	na	na	na	29.5	na	na
Wisconsin	52	41	49	52	57.8	55.2	54.9
Total	1,204	1,388	981	1,318			
Western States:							
Arizona [3]	[2]	na	na	na	[2]	na	na
California	201	255	225	260	25.4	20.7	32.5
Colorado [3]	[2]	na	na	na	[2]	na	na
Idaho	46	55	47	54	32.6	17.5	18.1
Oregon	125	195	175	155	35.5	30.7	22.1
Utah [3]	15	na	na	na	32.9	na	na
Washington	5,930	7,320	7,500	7,200	39.4	34.1	33.8
Total	6,318	7,826	7,948	7,669			
United States	10,046	11,378	11,406	11,452	33.6	31.7	32.1

na = not available.

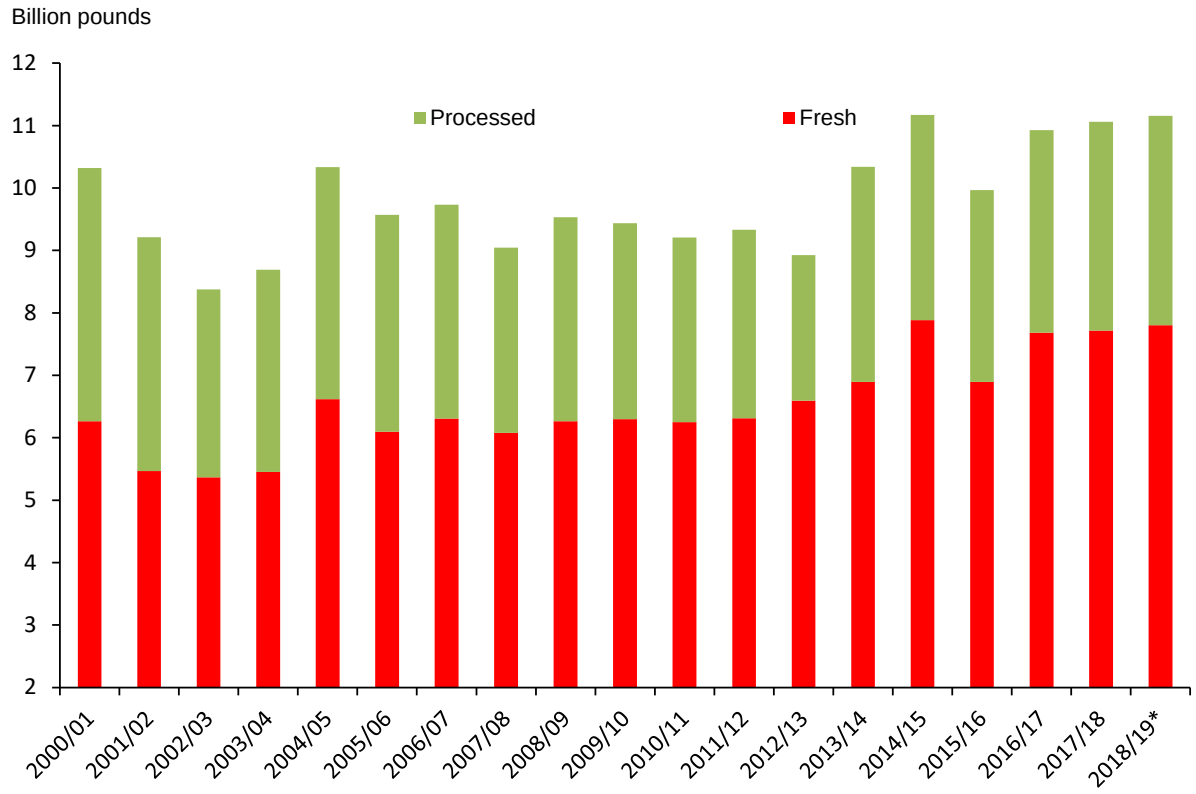
[1] Commercial production from orchards of at least 100 bearing-age trees.

[2] Production withheld to avoid disclosing data for individual operations.

[3] Estimates discontinued in 2016.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2017 Summary* and *Crop Production* (August 2018 issue).

Figure 3
U.S. apple production to increase in 2018/19



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

total utilized production. If achieved, fresh volume will be second-largest after the record 7.9 billion pounds in 2014/15 (fig. 3). Hence, competing large storage-apple supplies from the 2017/18 harvest and lower prices at the end of season dim prospects for favorable early-season pricing in 2018/19. As in previous years, a majority of the 2018/19 U.S. fresh-market crop will be channeled to the domestic market—over 90 percent of all apples available for fresh consumption were produced in the United States.

Processing-use production likely to remain steady: Despite the forecast larger U.S. apple crop, 2018/19 processing-use production is projected to remain steady at 3.3 billion pounds. Smaller crops in Washington, Pennsylvania, and Virginia are expected to offset steady to significantly larger crops in Michigan and New York, all major apple-producing states that supply most of the U.S. apples for processors. Several days of wet weather has delayed harvest in some Eastern states, resulting in tighter early supplies of processing-use apples through September. Despite the lower volumes to date, higher-than-average processing-apple storage holdings from last season could dampen 2018/19 processing-apple grower prices. The U.S. Apple Association reported processing-apple holdings up 43 percent from the 5-year average as

of June 1, 2018; at the same time last year, holdings were up 6 percent from the 5-year average.

U.S. fresh apple exports rose in 2017/18: Increased domestic production and lower grower prices through most of the second half of the 2017/18 marketing season helped boost international demand for U.S. fresh apples last season. Nearly one-third of the U.S. fresh-market crop went to foreign markets, with both export volume and value up over 10 percent in 2017/18 from the previous season. Export volume increased to several markets, including Mexico, India, Canada, and Vietnam, which are four of the top 5 markets for U.S. fresh apples. Together, these four countries received over 60 percent of total volume. Exports grew sharply to India as the country's recent ban on apple imports from China improved export opportunities for the United States in this important market. U.S. exports to China, on the other hand, declined by nearly 30 percent in volume and value in 2017/18. While exports to China were already down earlier in the season, export volume slowed sharply towards the end of 2017/18 with China's high retaliatory tariffs on several U.S. agricultural and food products, including fresh apples that took effect in May 2018. As the 2018/19 U.S. apple marketing season begins, export opportunities to China remains bleak as uncertainty regarding tariffs continues.

U.S. Pear Crop Similar to Last Year

The 2018 U.S. pear crop is forecast by NASS to increase to 1.48 billion pounds (equivalent to 739,200 tons), up only fractionally from the previous year (table 4). If realized, this will be a break from the recent 4-year trend of declines, but the crop remains fairly small, down 8 percent from the previous 5-year average. Forecast moderately larger crops in Washington and Oregon will just barely offset the expected lower production in California. The California pear crop is forecast to be down 18 percent from the previous year due to inconsistent weather conditions and the high incidence of fire blight, a common and often destructive disease among pear trees. Growers in Washington and Oregon have also raised concerns about significant problems with fire blight, which may lower current output levels.

This year's smaller California crop has kept early fresh pear grower prices strong in 2018/19, following the trend of higher year-over-year prices through most of the 2017/18 marketing year (July-June) on overall reduced production last year. The July 2018 average fresh pear price was $788 per ton—a record for the month and up 25 percent from the same time last year. Tight early supplies have led to significantly lower early-season exports, with export volume in July 2018 down 49 percent from the same time last year. Imports in July, on the other hand, were up sharply. Continuing strong fresh pear prices in 2018/19 likely will be tempered by expected

increased Northwest supplies. ERS projects U.S. fresh-market pear output in 2018/19 to increase slightly from the previous year to 990 million pounds, driven by the expected production increases in Washington and Oregon. Together, these two States supply close to 90 percent of the fresh-market output. Market supplies have mostly transitioned to Northwest pears where harvest started early due to warm spring and summer weather which has also resulted in generally smaller fruit.

Table 4--Pears: Total production and season-average price received by growers, 2015-17 and indicated 2018 production

State	Production [1]				Price		
	2015	2016	2017	2018	2015	2016	2017
	--- *Million pounds* ---				--- *Cents per pound* ---		
Pacific Coast:							
California:							
Bartlett	336	282	324	266	24.7	25.0	21.0
Other	60	68	66	53	24.0	37.4	45.3
Total	396	350	390	319	24.6	27.4	25.1
Oregon:							
Bartlett	115	107	108	122	32.0	31.8	38.8
Other	341	323	344	362	34.4	37.4	39.4
Total	456	430	452	484	33.8	36.0	39.3
Washington:							
Bartlett	356	295	251	285	26.5	29.1	41.9
Other	404	402	382	391	36.7	37.6	37.4
Total	760	698	633	676	31.9	34.0	39.2
Michigan [2]	4	na	na	na	30.3	na	na
New York [2]	13	na	na	na	37.8	na	na
Pennsylvania [2]	4	na	na	na	60.5	na	na
United States	1,633	1,478	1,475	1,478	30.8	33.0	35.5

na = not available.
[1] Includes unharvested production and production not sold.
[2] Estimates disontinued in 2016.
Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2017 Summary* and *Crop Production* (August 2018 issue).

Conversely, processing-use output is projected to decline about 2 percent to 480 million pounds on lower production in California which produce nearly half of all U.S. pears for processing each year. Specifically, California's production of Bartlett pears, which typically account for over 90 percent of the State's pears for processing, is forecast down 20-percent, driving the combined 3-State Bartlett crop in 2018 down slightly from a year ago. As Bartlett pears make up the lion's share of U.S. pears harvested each year for processing, reduced supplies to processors will likely boost grower prices for processing pears in 2018/19.

U.S. Grape Crop To Increase in 2018

U.S. grape production is forecast at 15.3 billion pounds (or 7.66 million tons) in 2018, up 4 percent from a year ago but slightly lower than the previous 5-year average. Expected increases

in most top-producing States offset declines in several other States, including major producers New York and Pennsylvania (table 5). Production in California is forecast to increase 4 percent to 13.5 billion pounds (equal to 6.75 million tons or 88 percent of the total crop), with increases expected to the wine, table, and raisin-type grape crops. Second in rank, Washington's grape crop is forecast at 910 million pounds (or 6 percent of the total crop), reflecting increases for wine and juice-type grapes.

Slowed fresh shipments boost fresh-market grape prices: The expected slightly larger table grape crop in California suggests higher U.S. fresh-use grape tonnage during the 2018/19 season (May-April). However, as harvest is well underway in California's San Joaquin Valley, USDA, Agricultural Marketing Service (AMS) shipment data indicate tighter supplies through August, which explain the higher June-July grower prices for fresh grapes compared with the same time last year. Lighter fruit sets for the early crops in California and Mexico have hampered overall late-spring, early summer supplies in the United States. Through July 2018, season-to-date import volume from Mexico, which directly competes with early domestic

Table 5--Grapes: Total production and season-average price received by growers in principal States, 2015-17 and indicated 2018 production

	Production				Price		
State	2015	2016	2017	2018	2015	2016	2017
	-- *Million pounds* --				-- *Cents per pound* --		
Arkansas	3	na	na	na	38.1	na	na
Georgia	10	na	na	na	75.5	na	na
Michigan	161	187	127	140	16.0	15.6	19.0
Missouri	11	11	12	10	44.0	46.7	35.1
New York	290	342	374	350	19.7	18.7	18.5
North Carolina	15	10	14	13	38.1	44.8	36.7
Ohio	7	11	9	10	20.5	27.7	32.2
Oregon	144	134	154	156	105.0	107.0	111.5
Pennsylvania	154	172	183	190	16.0	16.2	14.1
Texas	23	27	32	22	80.0	76.5	81.0
Virginia	18	17	18	17	97.5	99.0	108.5
Washington							
Wine	444	540	458	520	57.5	58.0	60.5
Juice	378	440	380	390	9.2	10.7	11.0
All	822	976	838	910	35.2	36.8	38.1
Total [1]	1,658	1,886	1,763	1,818			
California:							
Wine	7,410	8,064	8,028	8,200	39.1	45.3	46.4
Table	2,270	2,300	2,400	2,500	76.5	67.0	66.5
Raisin [2]	3,904	3,140	2,536	2,800	17.5	13.9	19.0
All	13,584	13,504	12,964	13,500	39.1	41.6	44.7
United States	15,242	15,394	14,727	15,318	38.8	40.9	43.9

na = not available.

[1] Sum of State production, excluding California.

[2] Fresh weight of raisin-type grapes.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2017 Summary* and *Crop Production* (August 2018 issue).

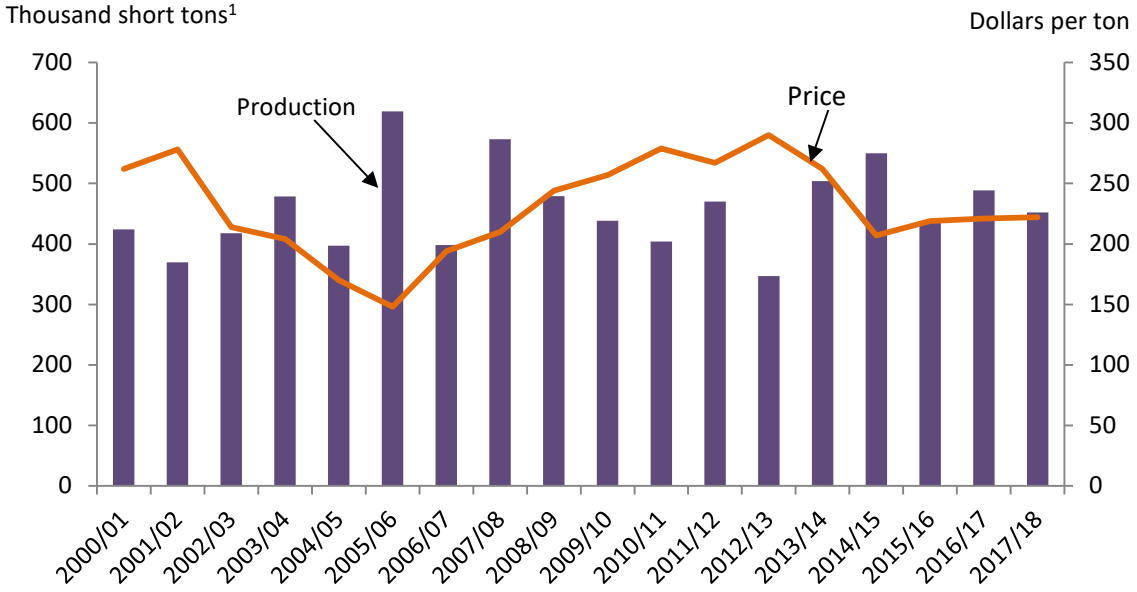
production, was down from the same time last year. However, higher late-supplies from Chile and Peru partly offset the lower supplies from Mexico. BLS reported monthly retail prices for Thompson seedless grapes averaged $3.14 per pound in May 2018, down from $3.33 in May 2017, but June and July prices rose above year-ago levels on reduced overall supplies. Weekly information from AMS show U.S. advertised retail prices for various seedless-type grapes at major supermarket outlets varied across varieties relative to last year. Meanwhile, current-season exports through July, both volume and value, were down to several top foreign markets for U.S. fresh grapes, including Canada, Mexico, Hong Kong, the Philippines (except in value terms), and Taiwan.

More grapes destined for wineries: Forecast larger wine-grape crops in California (up 2 percent from a year ago) and Washington (up 14 percent), along with expected production increases in Michigan, Ohio, and Oregon, point to higher grape crush tonnage in 2018, which will likely put downward pressure on grower prices for grapes sold to wineries. Washington is the only State other than California that reports wine grape production annually. Over the past 3 years, grapes channeled to wineries accounted for about 8 percent and nearly 50 percent of the crops in Michigan and Ohio, respectively, and virtually all the grapes produced in Oregon.

Grape tonnage for juice likely up: A forecast 3-percent increase in Washington's juice grape production this year, along with a forecast 10-percent larger crop in Michigan, indicate an increase in grape tonnage crushed for juice during the 2018/19 marketing season (August-July). The increase in crushed tonnage will likely put downward pressure on juice-grape grower prices. Anticipated smaller crops in New York and Pennsylvania will likely mute some of both these 2018/19 tonnage gains and potential downward push on juice-grape grower prices.

NASS reported grower prices in 2017/18 averaged $222 per ton, relatively unchanged from the previous year despite an 8-percent decline in tonnage for juice (fig. 4). Also, grape juice imports for the season declined slightly in volume from the previous year on lower shipments from major markets—Argentina, Chile, and Mexico. Partly offsetting declines in both domestic grape tonnage for juice and grape juice imports is the higher California grape tonnage for concentrate production in 2017. The California Department of Food and Agriculture and the USDA/NASS Pacific regional Office reported the State's total 2017 grape concentrate tonnage at 404,851 tons, 10 percent of the total crushed tonnage and up 3 percent from the previous season. While the share from this total going specifically to juice remains unreported, an increased total concentrate tonnage indicates crushed tonnage for juice in California was higher, likely dampening 2017/18 grower prices for juice in the State.

Figure 4
U.S. utilized grape production for juice and season-average grower price

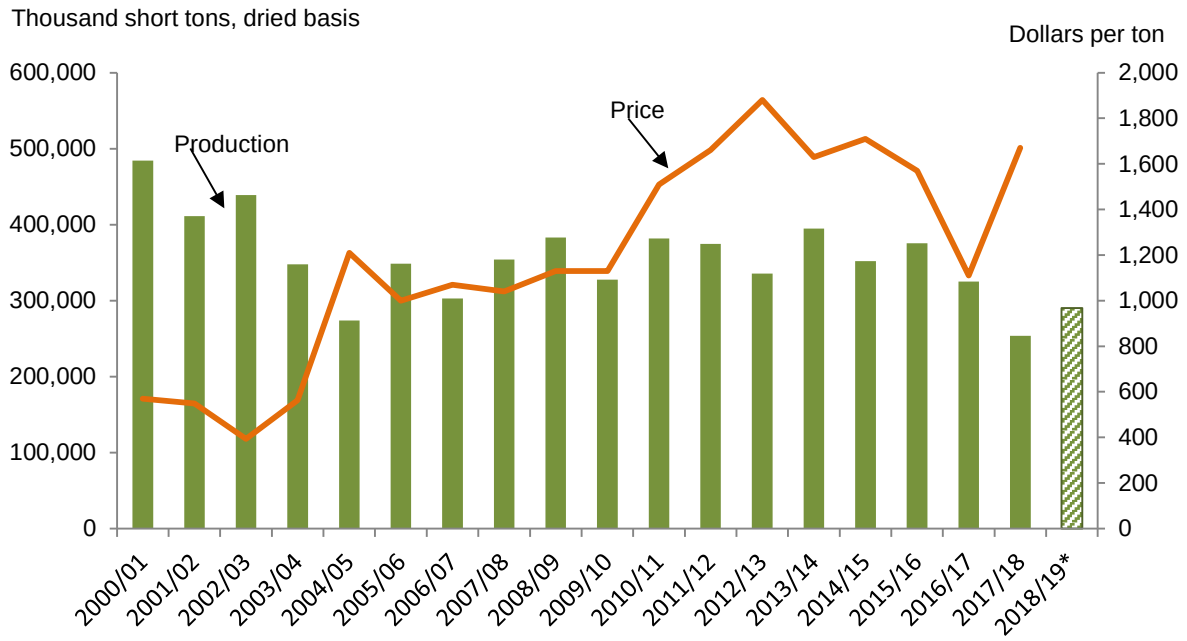


[1] 1 short ton=2,000 pounds
Source: USDA, National Agricultural Statistics, *Noncitrus Fruits and Nuts Summary,* various issues.

U.S. grape juice exports in 2017/18 increased 12 percent to 10.5 million gallons single-strength equivalent (sse) and were valued at $77.2 million. Export volumes increased to several of the major foreign buyers of U.S. grape juice, including to Canada, Costa Rica, South Korea, and Mexico. Canada, alone, accounted for nearly 40 percent of the total volume.

U.S. raisin production likely to increase: At 2.8 billion pounds (or 1.40 million tons, fresh basis), the forecast 10-percent larger California raisin-grape crop points to increased available grapes for drying in 2018/19. U.S. raisins are made mostly of grape varieties developed specifically for raisins. However, raisin supplies may also receive a boost from the larger California table-grape crop which could have some spill over into grapes for raisin production. U.S. raisin production is forecast by USDA's Foreign Agricultural Service (FAS) to increase to 263,000 metric tons, dried basis (or approximately 290,000 short tons) in 2018/19 (August-July), up 9 percent from last season (fig. 5). Despite the expected increased output, below-average carryover raisin stocks will continue to hamper overall raisin supplies in the United States. Low raisin supplies will likely support grower prices, limit U.S. sales growth potential in domestic and export markets, and further erode ending stocks in 2018/19. Imports are projected to decline slightly this season on higher domestic production and exports in Chile, Argentina, and the Republic of South Africa—top suppliers of imported raisins to the United States.

Figure 5
California raisin grape production dried into raisins and average grower price



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

U.S. Peach Production Up in 2018

Generally favorable weather this growing season has raised prospects for the 2018 U.S. peach crop. This year's crop is forecast by NASS at 1.46 billion pounds, up 5 percent from the previous year and a reversal of the last 7 years of decline. Driving up overall production, production is expected to rebound from last year in South Carolina and Georgia, the two largest peach-producing States in the southeast where weather devastated last year's crops (table 6). In contrast to last year's growing season in the two States, adequate chill hours last winter and the absence of major freezes benefitted overall crop development and resulted in excellent fruit quality and size, boding well for prices. Sharp increases in production in both States are expected to offset declines in California, the Nation's largest peach producer, which supplies nearly 75 percent of the total crop.

Production in California is forecast at 1.02 billion pounds, down 6 percent from the previous year. The freestone crop is expected to be up only less than 1 percent as spring frost and hail affected some earlier varieties. Similarly, the clingstone crop is forecast down 11 percent on lighter fruit set. Elsewhere, year-over-year changes in 2018 production are anticipated to be nearly split—up in nine States and down in eight.

Table 6--Peaches: Total production and season-average price received by growers, 2015-17 and indicated 2018 production

State	Production				Price		
	2015	2016	2017	2018	2015	2016	2017
	-- *Million pounds* --				-- *Cents per pound* --		
Alabama	11	7	3	10	56.0	69.5	137.5
Arkansas [1]	2	na	na	na	92.0	na	na
California	1,215	1,138	1,082	1,020	28.1	30.8	34.6
Freestone	534	494	488	490	34.0	37.2	47.8
Clingstone	681	644	594	530	23.5	25.9	23.7
Colorado	22	27	22	32	112.5	102.0	103.5
Connecticut [1]	3	na	na	na	104.0	na	na
Georgia	81	87	20	50	52.0	53.5	91.0
Idaho	14	16	10	12	47.2	45.0	64.5
Illinois	7	12	14	6	73.5	128.5	73.0
Maryland	8	5	5	5	51.5	62.5	63.5
Massachusetts [1]	3	na	na	na	116.5	na	na
Michigan	14	21	18	20	41.7	43.9	56.5
Missouri	5	6	6	1	68.5	87.0	117.0
New Jersey	42	40	56	64	65.5	71.5	78.0
New York	14	6	13	19	62.5	71.0	90.5
North Carolina	11	7	5	9	66.0	64.5	77.0
Ohio	2	3	8	7	76.0	87.5	86.0
Pennsylvania	36	32	43	37	58.5	60.5	59.0
South Carolina	138	127	22	109	53.5	64.5	85.0
Texas	10	9	5	5	90.0	110.0	125.0
Utah	8	10	7	9	54.0	82.0	73.0
Virginia	10	8	14	8	67.0	67.0	73.5
Washington	26	25	26	27	53.5	54.5	48.2
West Virginia	12	7	13	13	53.5	54.5	47.0
United States	1,694	1,591	1,393	1,464	36.7	40.4	43.4

na = not available.

[1]Estimates discontinued in 2016.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2017 Summary* and *Crop Production* (August 2018 issue).

California's freestone crop increase and gains in other States lead to a 16-percent year-over-year increase. Since a majority of U.S. freestone peaches serve the fresh market, this increase indicates greater availability of fresh-market supplies, which could drive down U.S. grower prices for fresh peaches. In June and July, average prices were already down between 25-35 percent from the same time last year. Meanwhile, reduced clingstone supplies—virtually all produced in California and mostly canned—likely will help boost grower prices for processing peaches. The Canning Cling Peach Association, the cooperative bargaining association in the canning cling peach industry, reported the 2018 base price agreement being ratified with processors was at $488 per ton, up from $433 per ton last year.

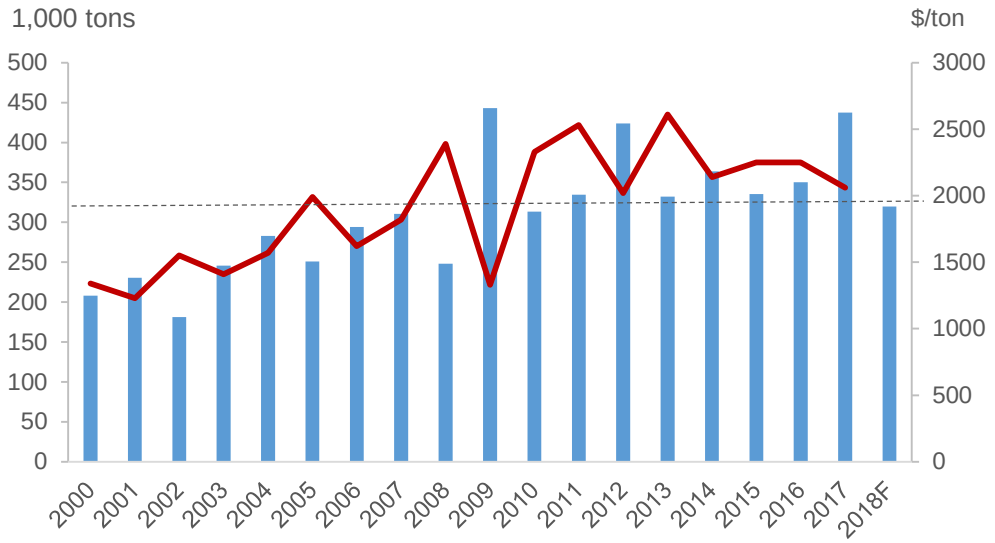
Higher fresh peach supplies and lower domestic prices are projected to boost 2018 export shipments by 11 percent from last year. Year-to-date export volume (includes fresh peaches and nectarines) through July 2018 was up 15 percent from the same time last year, with increases posted to top markets Canada, Mexico, Taiwan, and Australia. Despite the larger

fresh-market peach crop, domestic availability will be tempered by lower imports from Chile earlier this year and a projected significant decline in supplies of U.S. nectarines due to freeze damage.

U.S. Sweet Cherry Crop Smallest in Last 7 Years

In June, USDA's National Agricultural Statistics Service released the forecast for the 2018 U.S. sweet cherry crop. At 319,900 tons (or 640 million pounds), it is forecast down 27 percent from a year ago. If achieved, the crop will be the smallest produced in the past 7 years, likely supporting grower prices (fig. 6). A combination of weather events—a warm winter, cool and wet spring, damaging frosts in late February, and heavy rains in March—influenced expected double-digit production declines in the top three producing States—Washington (down 16 percent from last year), Oregon (down 25 percent), and California (down 64 percent). Combined output from these States make up the bulk of domestic production. In Michigan, a key producer in the eastern half of the United States, production was forecast up 27 percent on favorable weather conditions during bloom.

Figure 6
U.S. sweet cherry crop below average of recent years



Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts Summary* (various issues) and *Crop Production* report (June 2018 issue).

Cherries rank as the eighth most valuable crop in the U.S. fruit and tree nut industry, with production valued at almost $950 million during crop year 2017. Sweet cherries, which are marketed mostly for the fresh market, accounted for 90 percent of this value; the remainder is for tart (sour) cherries. Growing demand for fresh cherries here and abroad has sparked market

opportunities for U.S. cherry growers over the last decade. Since the 1990s, the industry has seen a more than doubling of fresh cherry export volume and domestic per capita availability. Exports last year reach record volume and value at 246.6 million pounds and $643.9 million, respectively, nearly all of which is attributed to sweet cherries. Canada, South Korea, China, Hong Kong, and Taiwan are the top foreign markets for U.S. fresh sweet cherries. In 2018, exports are projected to dip over 20 percent from last year's record volume due to the smaller domestic crop and high retaliatory tariffs slowing shipments to China. Despite this decline, exports will still remain above the previous 5-year average.

Increase in Tart Cherry Production

Most of the U.S. tart cherry crop is grown in Michigan, so an expected 40-percent gain in Michigan output will raise U.S. production 36 percent from 2017 to a total of 352.7 million pounds. Michigan's 2018 tart cherry crop is forecast to be the largest in the last 10 years due to favorable growing conditions during the bloom period. Since the 1990's, the highest Statewide production was reported in 1995 at 310 million pounds, followed by 297 million in 2001, and 266 million in 2009. This year's Michigan production was forecast at 264 million pounds, 75 percent of the total U.S. crop. Production was also expected to increase significantly in New York and Utah on generally favorable weather, but decline in Washington and Wisconsin. Frozen cherry stocks are relatively above average and, along with the large crop, will likely force grower prices down.

Cranberry Production Expected Larger in 2018

The NASS August forecast for U.S. cranberry production in 2018 is at 863 million pounds (or 8.63 million barrels), up 3 percent from the previous year. If achieved, production will be the third-largest in history; the record 963 million pounds was produced in 2016. Increases are expected in most producing States except Massachusetts, the second-largest producer, where crop size is forecast down almost 1 percent on small berries caused by weeks of dry weather (table 7). Despite some frost damage, production in Wisconsin, the largest producer, is anticipated to be up 2 percent from last year and the third-largest following record output of 613 million pounds in 2016 and 602 million in 2013. Ample production and large beginning stocks will likely continue to put pressure on cranberry grower prices during the 2018/19 marketing season (September-August). However, recently approved volume-control measures under the Federal Marketing Order for cranberries indicate brighter prospects for a more balanced market for U.S. cranberries in 2018/19.

Table 7--Cranberries: Total production and season-average prices received by growers, 2015-17, and indicated 2018 production

State	Production				Price		
	2015	2016	2017	2018	2015	2016	2017
	-- Million pounds --				-- Cents per pound --		
Massachusetts	235	227	191	190	32.8	30.7	31.5
New Jersey	60	65	45	56	37.7	43.1	36.6
Oregon	56	40	49	52	26.5	26.5	26.4
Washington	20	18	15	17	44.2	44.2	42.5
Wisconsin	486	613	537	550	29.2	29.2	29.2
United States	856	963	837	863	31.0	30.6	30.2

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruits and Nuts 2017 Summary* and *Crop Production* (released August 2018).

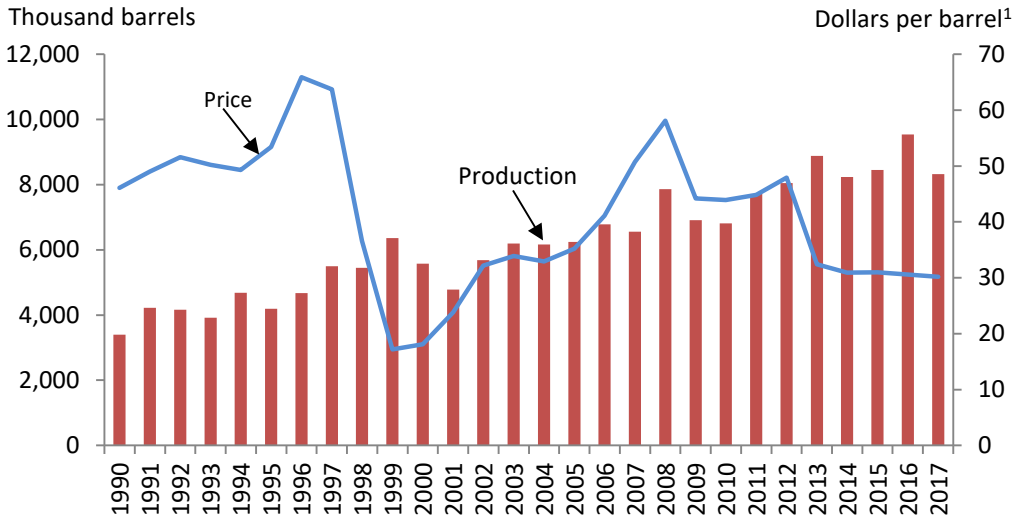
Data from the Cranberry Marketing Committee (CMC) showed positive sales growth in the fresh and processed sectors in 2017/18 through June and remaining inventories for the same period at 8.68 million barrels, down over 20 percent from the same time in 2016/17. At this estimated level, however, inventories are still relatively high to finish the season, given that the 2012/13-2016/17 ending inventory average was 7.80 million barrels (which included the over 9.0 million barrels in 2016/17). Despite reduced domestic production in 2017/18, NASS reported the average all-cranberry grower price at $30.2 per barrel, almost unchanged from $30.6 in 2016/17 (fig. 7), driving crop value down to $251.2 million, its lowest level in the past 12 years. The all-cranberry price mirrored grower prices for processing-use cranberries, which also declined fractionally to $29.1 per barrel despite lower processing production, on large carry-over inventories from 2016/17. At the same time, fresh-market cranberry prices rose 16 percent to $57.6 per barrel on lower fresh-market production and increased sales, especially to foreign markets.

USDA purchases, as well as marketing and promotion campaigns by the industry to boost domestic and export demand, have been critical in managing recent large supplies and preventing a repeat of the low grower prices of the late 1990s. However, inventories have continued to build up in recent years, and the U.S. cranberry industry continues to face oversupply challenges. To help address this situation, USDA recently approved volume controls for the 2018/19 crop, restricting growers to selling only 75 percent of their historical sales volume. The industry is under a Federal Marketing Order regulating the handling of cranberries grown in the States of Massachusetts, Rhode Island, Connecticut, New Jersey, Wisconsin, Michigan, Minnesota, Oregon, Washington, and in Long Island in the State of New York. The rule, which takes effect October 12, 2018, also allows handlers to process up to 50 percent of the excess cranberries they receive above their growers' allotment, provided they divert an

equivalent amount of 2018-19 cranberry processed products. Organically grown cranberries are exempt from the rule. Volume-control measures were also carried out in April, allowing 15 percent of the 2017/18 crop to be diverted. Prior to 2017/18, volume control was implemented during the 2001/02 marketing year, after 2 years of rock bottom prices ($17-$18 per barrel). With a 65-percent producer allotment in 2001/02, the all-cranberry average grower price improved to almost $24 per barrel (up 31 percent from the previous year) as the volume control regulation contributed to a significant reduction in inventories.

Figure 7

U.S. utilized cranberry production and average grower price



[1] 1 barrel = 100 pounds.

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

Citrus Fruit Outlook

U.S. Citrus Production in 2017/18 Continues Decline

As the 2017/18 season ends for most citrus fruits, final production estimates were published by USDA/NASS in the August 28 release of the *Citrus Fruits 2018 Summary* and the September issue of the *Crop Production* report. The final estimate for all citrus crops is 6.13 million tons, a 20-percent decline, year over year (table 8). Production declined for all citrus fruit except lemons which grew only 0.7 percent to 888,000 tons. The nation's orange production, which accounts for approximately two-thirds of total citrus volume, was estimated at 3.92 million tons, down 23 percent. The U.S. grapefruit crop shrunk at a similar rate, slipping to 517,000 tons, while "tangerine and mandarin" production declined 22 percent to 804,000 tons.

Despite drastically reduced overall volume, the 2017/18 U.S. citrus crop was valued at $3.3 billion, down only 7.1 percent from the previous season, with all values dropping except for "tangerines and mandarins." Declines in crop volumes for oranges and grapefruit outpaced somewhat steady to slightly stronger grower prices, driving down total production values for oranges and grapefruit; meanwhile, slight production improvement for lemons could not overcome falling prices, leading to lower total production value for lemons. The drop in production for "tangerines and mandarins," however, was offset by increased grower prices, leading to 1.5 percent growth in crop value.

California produces bulk of fresh citrus crop; Florida continues decline in processed market: California continues to be the leading citrus-producing State and the largest supplier of U.S. citrus for the fresh market. In 2017/18, California production grew to 59 percent of the total U.S. citrus crop volume, and 80 percent of California's citrus production went into the fresh market. Florida ranks second in the nation's citrus production, with 36 percent of the total share in 2017/18; 90 percent of the State's production went into the processing market. Texas and Arizona produced the remaining 5 percent, with higher volumes going to the fresh market.

Looking across States, Florida experienced the largest reduction in citrus production in 2017/18, down 37 percent from the previous season. The drastic drop in Florida resulted from a continued long-term decline brought about by citrus greening exacerbated by damage early in the season from Hurricane Irma. Arizona followed closely, with a decline of 35 percent, and California's production dipped by 7 percent. Increased acreage and yields in orange production pushed Texas's final citrus volume up 9 percent, year over year.

Table 8--Citrus: Utilized production, 2015/16, 2016/17 and forecast for 2017/18[1]

Crop and State	Utilized		Forecast for 2017/18	Utilized		Forecast for 2017/18
	2015/16	2016/17	as of 07-2018	2015/16	2016/17	as of 07-2018
	---- 1,000 boxes[2] ----			*----1,000 tons ----*		
Oranges:						
Early/midseason and navel:						
California	47,200	39,300	35,900	1,888	1,572	1,436
Florida[3]	36,100	33,000	18,950	1,625	1,485	853
Texas	1,351	1,090	1,530	57	46	65
Total[4]	84,651	73,390	56,380	3,570	3,103	2,354
Valencia:						
California	11,300	9,000	9,500	452	360	380
Florida	45,600	35,850	26,000	2,052	1,613	1,170
Texas	340	280	350	14	12	15
Total	57,240	45,130	35,850	2,518	1,985	1,565
All oranges	141,891	118,520	92,230	6,088	5,088	3,919
Grapefruit:						
California	3,800	4,400	4,000	152	176	160
Florida	10,800	7,760	3,880	459	330	165
Texas	4,800	4,800	4,800	192	192	192
All grapefruit	19,400	16,960	12,680	803	698	517
Tangerines and mandarins:						
California	21,700	23,800	19,200	868	952	768
Florida	1,415	1,620	750	67	77	36
All tangerines and mandarins	23,115	25,420	19,950	935	1,029	804
Lemons:						
Arizona	1,600	1,550	1,000	64	62	40
California	21,000	20,500	21,200	840	820	848
All lemons	22,600	22,050	22,200	904	882	888
Tangelos[4]						
Florida	390	--	--	18	--	--
All citrus[5]	207,396	182,950	147,060	8,748	7,697	6,127

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

[2]Net 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.

[3] Includes Temples. Beginning in 2016/17, Temples included in tangerines and mandarins for Florida.

[4] Beginning in 2016/17, tangelos are included in tangerines and mandarins for Florida.

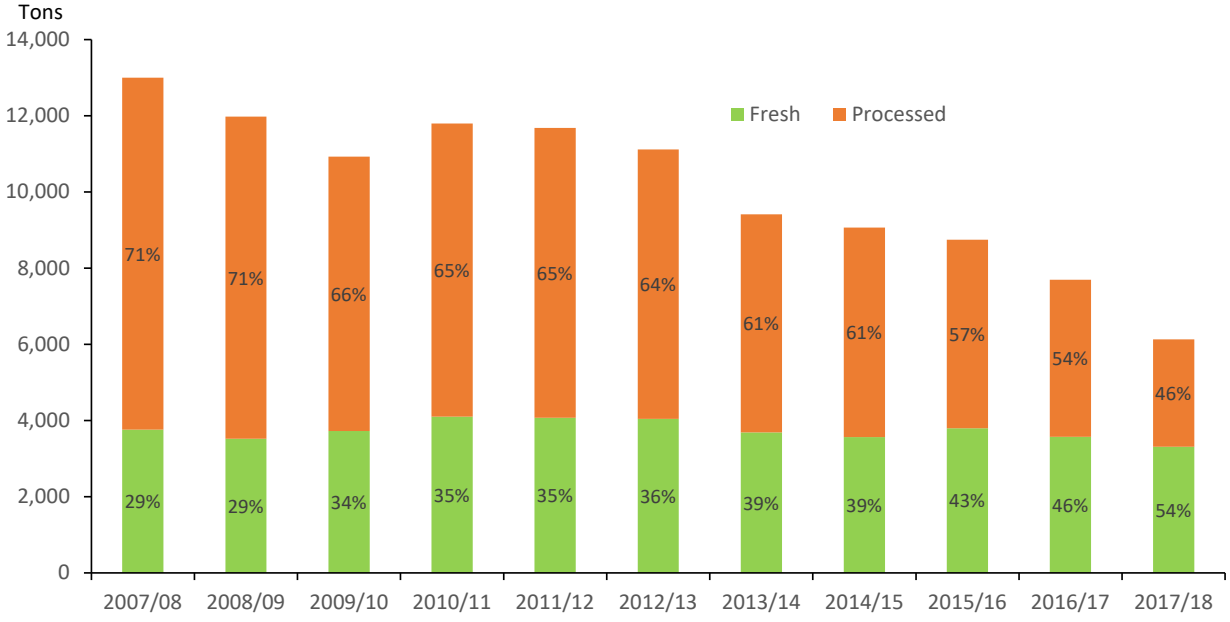
[5]Totals may not be equivalent to the sum of the categories due to rounding.

Source: USDA, National Agricultural Statistics Service, *Crop Production,* various issues, and *Citrus Fruits 2018 Summary* (August 2018).

As Florida's production continued to shrink in 2017/18, the share of U.S. citrus for processing (largely driven by Florida oranges and grapefruit) dropped to 46 percent of all U.S. citrus, down from 54 percent the previous season and over 70 percent a decade earlier. Consequently,

fresh-market production as a share of total U.S. citrus, has grown over the last 10 seasons despite relatively stable overall production numbers (fig. 8).

Figure 8
U.S. citrus production continues decline



Source: USDA, National Agricultural Statistics Service, *Citrus Fruits Summary*, various issues.

2017/18 Orange Production Down in California and Florida

The reported 23 percent smaller U.S. orange crop in 2017/18 reflects declines in navel and Valencia orange production in the top two producing States—California and Florida—while Texas showed growth over the recent season. The total U.S. navel harvest declined 24 percent from the previous season to 2.4 million tons; U.S. Valencia orange production declined 21 percent to 1.6 million tons. As the largest supplier of U.S. citrus for the fresh market, California experienced a 6-percent decline in all-orange production, driving up fresh-market orange prices. Florida's all-orange production declined 35 percent to 2.0 million tons. Meanwhile, Texas' orange production rose 37 percent to 80,000 tons.

Fewer bearing acres across most orange-producing States: States reported fewer orange bearing acres in 2017/18 at 517,500 bearing acres, down 2 percent from the previous season. The only exception was Texas, where bearing acreage has climbed to 8,700 acres. Florida experienced the greatest loss in orange bearing acres in 2017/18, down 2 percent from the previous season. This is reflective of ongoing disease pressure from citrus greening coupled

with the immediate loss of bearing acres from Hurricane Irma, which made landfall in Florida on September 10, 2017, near the beginning of the 2017/18 citrus marketing year. As Florida's production continued to shrink in 2017/18, the share of U.S. oranges for processing dropped to 57 percent of all U.S. oranges, down from 65 percent the previous season and over 80 percent a decade earlier.

Tighter supplies support California's navel prices: U.S. orange grower prices rose during the 2017/18 season, particularly in the fresh market. California's all-orange average price increased 38 percent relative to the 2016/17 season (November through July). California's navel season ended with a lighter crop because of extreme summer temperatures, while Valencia oranges rebounded from last year due to more favorable fruit set. Tighter navel orange supplies contributed to higher grower prices for California navels in 2017/18, with the season-average equivalent-on-tree price to date at $22.57 per box—a 48 percent increase from $15.23 per box in 2016/17, which was also a substantial increase from the 2015/16 price. Florida all-orange, on-tree equivalent prices registered a 12-percent drop, largely due to falling prices for oranges bound for the processing market. Specifically, prices for Florida's processing oranges averaged $9.79 per box this season (December-May), down 14 percent from $11.56 the same time last year, despite the drop in supplies.

Shrinking domestic supply leads to climb in fresh orange imports: With lighter domestic production, U.S. imports of fresh oranges continued to grow in 2017/18 through July, increasing 18 percent from the same period in 2016/17 and reaching 129,000 tons (table 9). Mexico, Chile, and South Africa were the top three suppliers, accounting for 49, 24, and 15 percent of total U.S. import volume, respectively. July through October is normally characterized by the heaviest volumes of imported oranges. A 22-percent increase in imports in July 2018 from the previous year indicates the possibility of continued strong imports for the remainder of the season. Fresh orange exports through July, on the other hand, were 18 percent lower than the same period the previous season, partly due to tight domestic supplies.

Table 9 -- Fresh citrus trade, 2015/2016, 2016/17 and 2017/18 year-to-date (YTD)[1]

	Marketing year		YTD		YTD
	2015/16	2016/17	2016/17	2017/18	Change
		----- 1,000 Metric tons -----			--Percent--
Imports					
Oranges	164.1	182.5	109.6	129.0	17.7%
Grapefruit	23.9	24.9	7.8	6.6	-15.4%
Lemons	81.4	97.9	97.9	100.8	3.0%
Tangerines[2]	231.6	264.0	141.7	184.1	29.9%
Exports					
Oranges	657.4	612.6	600.0	494.6	-17.6%
Grapefruit	117.3	106.8	103.2	54.6	-47.1%
Lemons	105.7	107.0	107.0	92.0	-14.0%
Tangerines[2]	36.5	34.4	34.2	28.8	-15.8%

[1] Marketing year runs November - October for Oranges, Grapefruit, and Tangerines; August-July for Lemons. Year-to-date runs through July.

[2] Includes Tangerines, Mandarines, and Clementines

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau.

Continuing Drop in Grapefruit Production

Falling grapefruit production in California and Florida overshadowed steady production in Texas. Thus, U.S. grapefruit production in 2017/18 is down 26 percent from the previous season, with Florida having a short season overall, partially due to lingering effects of Hurricane Irma early in the season. Tighter domestic supplies raised grapefruit grower prices for the season and hampered fresh grapefruit exports. Exports through July were down 47 percent in volume. Season-average, equivalent-on-tree grapefruit prices have been 20 percent above the prices registered during the same period in 2016/17. Higher prices have helped Florida producers deal with declining yields and rising production costs. Grapefruit imports thus far in 2017/18 have fallen by 15 percent, relative to the previous year, and are expected to keep upward pressure on grower prices.

Rebounding Domestic Supplies and Lower Exports Led to Lower Domestic Lemon Prices

November through May lemon supply is almost exclusively from California and Arizona, followed by imports, mostly from Chile, Mexico, and Spain, during the summer months. While the 2016/17 season (August-July) registered the largest lemon import volume in the last 6 years, imports continued to grow throughout 2017/18. Rebounding supplies and falling exports put downward pressure on average lemon producer prices, down 9 percent from the previous season.

For the first time in 15 years, lemons from Argentina are being imported into the United States. Domestic growers are closely monitoring markets and the impact these additional imports may have. To date, Argentinian lemons entering the U.S. market, which are capped at 30,000 tons per year, account for only about 5 percent of the total 100,792 tons of imported lemons.

Citrus Production Could Rebound Slightly in 2018/19

In October, USDA/NASS will release its 2018/19 forecast for all-citrus production in the United States, but the initial forecast estimate for California's navel production has already been published and is up somewhat from the 2017/18 low (see below). In Florida, however, lingering impacts from Hurricane Irma's damage will likely continue to hamper next season's citrus forecast.

The 2018-19 California Navel Orange Objective Measurement Report was released September 12 by the NASS Pacific Regional Office. The initial navel orange forecast is at 80.0 million 40-lb cartons, or 1.6 million tons, up 11 percent from last season. Reported data was collected from the Central Valley between June 15 and September 1, with 703 navel groves randomly selected. Fruit set is estimated above the previous 5-year average measurements, but average fruit size is slightly smaller compared over the same time period. Specifically, survey data indicate 426 fruit per tree for the Central Valley, 30 percent higher than the 5-year average of 333. The average September 1 fruit diameter was 2.117 inches, down from 2.341 inches in the previous season. Smaller size fruit is expected to be offset by a much improved fruit set. Over the past 3 years, 80 percent of California's orange crop consisted of navel and miscellaneous varieties, with Valencia oranges accounting for the remaining portion.

The results of the first orange and grapefruit maturity tests for Florida's 2018/19 season were published by USDA/NASS on September 12. Sampled fruit included early oranges, midseason oranges, and red and white seedless grapefruit grown on trees throughout the five production areas of the citrus-growing region; samples were taken on August 28-29, 2018. Results show that all oranges and grapefruit had lower unfinished juice and solids per box for 2018/19, compared with the same time last season, suggesting a slightly lower saleable juice yield per box in the upcoming season.

Tree Nuts Outlook

Almond, Walnut, and Hazelnut Production Forecast To Rise

Forecast bigger crops of almonds, walnuts, and hazelnuts this year will likely boost overall tree nut supplies in the United States during the 2018/19 marketing year. Downward pressure on almond grower prices due to a larger crop may be dampened by lower-than-average beginning stocks. At the same time, walnut grower prices will likely receive additional downward pressure from higher-than-average carryover supplies. Almonds and walnuts are the two most produced tree nuts in the United States. On an average shelled basis, almonds account for about two-thirds of U.S. tree nut production annually, while walnuts represent nearly 20 percent.

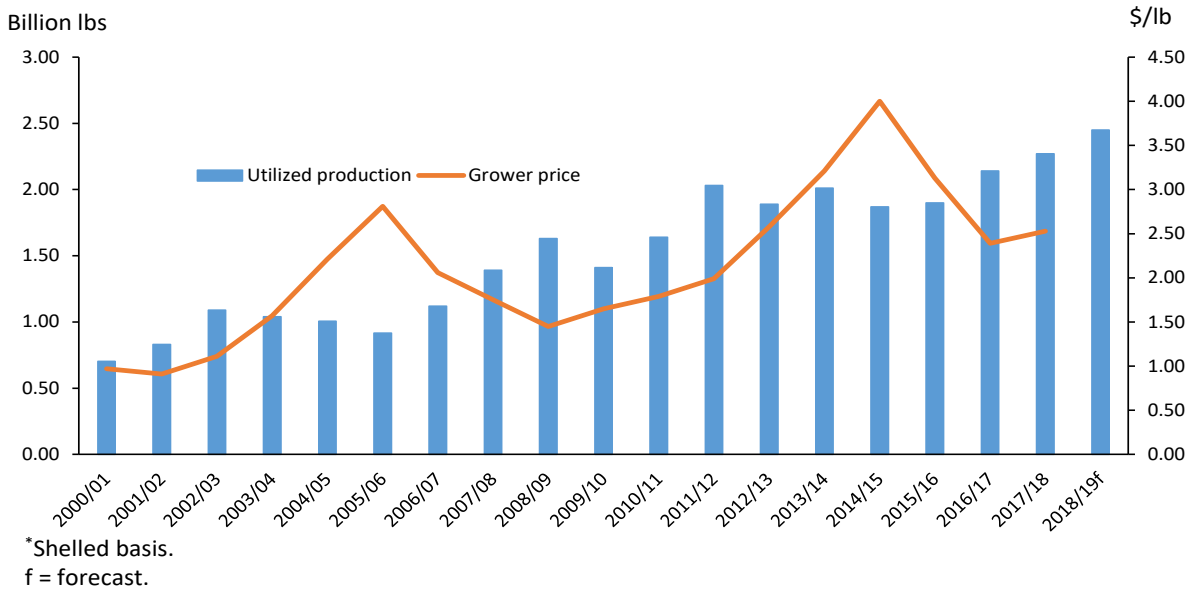
California Almond Crop Forecast To Reach a New High

California expects 2.45 billion pounds (shelled basis) of almonds to be harvested this year for the 2018/19 marketing year (August-September), 8 percent higher than last season's record crop (fig. 9). This estimate is based on the forecast from the 2018 *California Almond Objective Measurement Report*, released in July by the NASS Pacific Regional Office in cooperation with the California Department of Food and Agriculture. The crop has a bearing area of 1.07 million acres, 70,000 acres more than last year, consistent with the ongoing trend of consecutive yearly expansion in bearing acreage since 1996 (when 428,000 acres were reported). Combined with this year's increased bearing acreage are slight increases in the number of trees per acre and yield per acre, driving up production in 2018/19.

Variable weather this spring raised grower doubts about this year's crop prospects. The almond bloom started a few days earlier than normal and lasted longer due to cold temperatures, with frost problems impacting some orchards. A warm-up in May and succeeding months, however, aided nut sizing. Disease pressure was also reported light this growing season likely due to the dry, hot weather this summer. The July NASS report indicated that the percent of sound nuts was 98.8, suggesting excellent quality and only minor insect and other off-grade problems.

Record-setting domestic production, increased imports, and large beginning stocks bolstered total U.S. almond supplies in 2017/18 (table 10). Despite elevated supplies, demand for almonds was high and this led to a reduction in ending stocks and higher grower prices. Lower supplies of other domestic nuts such as walnuts and pistachios in 2017/18 likely contributed to the overall boost in U.S. almond demand.

Figure 9
California almond production and season-average grower price*



*Shelled basis.
f = forecast.

Table10--Almonds: Supply and utilization (shelled basis), 2000/01 to 2017/18

Season [1]	Utilized pro-duction	Loss and exempt [2]	Marketable production	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Utilization	
									Domestic	Per capita
					--1,000 pounds--					*Pounds*
2000/01	703,000	26,000	677,000	427	175,850	853,277	107,266	513,344	232,667	0.82
2001/02	830,000	29,300	800,700	809	107,266	908,775	80,922	585,723	242,130	0.84
2002/03	1,090,000	20,200	1,069,800	1,862	80,922	1,152,584	162,045	673,616	316,923	1.09
2003/04	1,040,000	21,800	1,018,200	2,772	162,045	1,183,017	148,940	698,896	335,181	1.15
2004/05	1,005,000	39,922	965,078	5,662	148,940	1,119,681	137,684	712,680	269,317	0.91
2005/06	915,000	36,470	878,530	9,207	137,684	1,025,421	112,222	728,470	184,730	0.62
2006/07	1,120,000	33,502	1,086,498	8,139	112,222	1,206,859	133,950	767,963	304,946	1.01
2007/08	1,390,000	41,491	1,348,509	7,107	133,950	1,489,566	231,151	891,443	366,972	1.21
2008/09	1,630,000	48,438	1,581,562	4,233	231,151	1,816,946	413,734	980,247	422,965	1.38
2009/10	1,410,000	46,326	1,363,674	5,610	413,734	1,783,018	321,355	1,030,754	430,910	1.40
2010/11	1,640,000	27,916	1,612,084	8,105	321,255	1,941,444	253,959	1,188,153	499,332	1.61
2011/12	2,030,000	40,493	1,989,507	15,926	253,959	2,259,393	335,233	1,357,972	566,188	1.81
2012/13	1,890,000	35,583	1,854,417	39,445	335,233	2,229,095	317,226	1,281,083	630,786	2.00
2013/14	2,010,000	60,571	1,949,429	33,928	317,226	2,300,583	350,564	1,336,899	613,120	1.93
2014/15	1,870,000	58,124	1,811,876	31,190	350,564	2,193,629	376,614	1,269,201	547,813	1.71
2015/16	1,900,000	43,494	1,856,506	31,776	376,614	2,264,896	412,001	1,272,345	580,550	1.80
2016/17	2,140,000	46,984	2,093,016	26,585	412,001	2,505,017	398,677	1,436,196	670,144	2.06
2017/18 P	2,270,000	54,734	2,215,266	32,528	398,677	2,637,443	359,013	1,534,595	775,016	2.37

P = Preliminary.
[1]Season begins in August .
[2]Utilized production minus marketable production.
Source: USDA, Economic Research Service calculations.

Domestic almond demand (indicated by the total available supplies for domestic use) increased to 743.8 million pounds or 2.27 pounds per capita, the highest on record. Export volume also reached a historic high, totaling 1.53 billion pounds. In contrast to the past 2 years, California almond grower prices in 2017/18 rose to $2.53 per pound, 6-percent higher than in 2016/17.

Prior to 2015/16 and 2016/17, California almonds experienced consecutive years of rising prices from 2009/10 to 2014/15. Stocks at the end of the 2017/18 marketing year totaled 359.1 million pounds, lower than the last 3 years. Lower stocks carried over to the 2018/19 marketing year should temper any potential downward pressure on current-season grower prices stemming from the anticipated record harvest this year.

California Walnut Crop To Rebound in 2017/18

The 2018 California Walnut Objective Measurement Report, released by NASS on August 31, forecast walnut production to rebound to 1.38 billion pounds (or 690,000 tons), in-shell basis, up 10 percent from last year on increased bearing acreage and average per-acre yields. If realized, this year's crop size will be fractionally larger than the record crop in 2016 (table 11, reported on a shelled basis), likely putting downward pressure on walnut grower prices during the 2018/19 marketing season (September-August).

Table 11--Walnuts: Supply and utilization (shelled basis), 2000/01 to 2017/18 [1]

									Utilization	
Season [2]	Utilized production	Loss and exempt [3]	Marketable production	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Domestic	Per capita
					1,000 pounds					*Pounds*
2000/01	204,857	857	204,000	371	63,393	267,763	46,218	97,083	124,462	0.44
2001/02	257,556	844	256,711	203	46,218	303,132	80,004	103,420	119,708	0.42
2002/03	243,963	865	243,098	194	80,004	323,295	57,505	113,966	151,825	0.52
2003/04	279,429	857	278,571	439	57,505	336,515	63,210	126,356	146,950	0.50
2004/05	282,360	869	281,491	801	63,210	345,503	52,577	137,908	155,017	0.53
2005/06	315,989	890	315,099	1,050	52,577	368,726	39,288	205,380	124,058	0.42
2006/07	296,931	858	296,073	2,258	39,288	337,619	19,687	156,355	161,577	0.54
2007/08	280,427	855	279,573	8,714	19,687	307,973	19,885	144,673	143,415	0.47
2008/09	396,364	909	395,455	2,064	19,885	417,404	52,553	220,074	144,777	0.47
2009/10	387,870	888	386,982	3,378	52,553	442,913	37,321	235,463	170,129	0.55
2010/11	441,521	876	440,645	494	37,321	478,459	35,859	303,214	139,386	0.45
2011/12	400,631	869	399,762	4,848	35,859	440,469	42,740	266,439	131,290	0.42
2012/13	442,099	890	441,209	8,417	42,740	492,367	40,749	304,292	147,326	0.47
2013/14	437,651	890	436,762	11,910	40,749	489,420	34,325	307,371	147,724	0.46
2014/15	506,052	886	505,166	21,166	34,325	560,658	73,992	355,701	130,964	0.41
2015/16	526,957	870	526,087	10,782	73,992	610,861	56,571	427,263	127,026	0.39
2016/17	608,431	883	607,548	15,731	56,571	679,850	49,372	446,913	183,565	0.57
2017/18 P	557,143	884	556,259	12,857	49,372	618,488	56,620	400,000	161,868	0.49

P = Preliminary.
[1] Conversion factors from in-shell to shelled basis varies year to year for production, stocks, and exports. For imports, the conversion factor was a constant 0.35.
[2] Season began in August through 2007/08. As of 2008/09, season begins September 1.
[3] Inedibles and noncommercial usage.
Source: USDA, Economic Research Service calculations.

Statewide bearing acreage for walnuts in 2018 continued its longrun upward trend, increasing 4 percent from last year to a record 350,000 acres. Likewise, at 75.5 trees per acre, tree density is at a peak in 2018, up 2 percent from a year ago. Average nut set rose 3 percent from last year to 1,176 per tree. In-shell nut weight per nut was lower at 22.3 grams, compared with 23.4

grams in 2017. The percent of sound kernels, however, rose slightly to 98.8. Although late-spring wet weather threatened crop potential, cooler temperatures aided kernel size and nut quality. Insect pressure was reported to be down from last year, likely due to excessive heat this summer. As with the heat waves last year, growers again took preventive measures to protect their crop from sunburn damage. The average yield in 2018 is reported at 1.97 tons per acre, up from 1.88 tons in 2017.

During the 2017/18 season, reduced domestic production, imports, and beginning stocks drove down overall walnut supplies in the United States, boosting grower prices to an average $2,530 per ton, in-shell basis, up from $1, 850 per ton in 2016/17 and $1,670 per ton in 2015/16. Season-average prices ranged from $2,040 to $3,710 (the all-time high) from 2010/11-2014/15. In part due to these higher prices, domestic availability and export volume declined in 2017/18. Total U.S. exports of in-shell walnuts in 2017/18 through July were down 23 percent, reaching 307.9 million in-shell pounds on substantial declines to most major markets, including Turkey, Italy, India, Spain, and Vietnam. Season-to-date in-shell shipment volume to China was up 31 percent. For the same time period, declines to several markets drove total shelled-walnut exports down 4 percent. Among the larger markets, shelled volumes were down to South Korea, Israel, the United Kingdom, China, and Taiwan. Over 60 percent of U.S. walnut supplies move through foreign channels.

Larger Hazelnut Crop Expected as Harvest Begins in Oregon

The 2018 Oregon hazelnut crop is expected to be much larger than in 2017. The preliminary forecast puts 2018 production at 52,000 tons (or 104 million pounds), in-shell basis, up from 32,000 tons last year, based on an objective yield survey conducted by the NASS Oregon Field Office. If realized, production will set a new record, exceeding the existing record of 49,500 tons achieved in 2001.

The percentage of good nuts was a record 89.7 and the number of nuts picked per tree was 291 this year, up from 201 last year. More than two-thirds of the good nuts were comprised of large and jumbo nuts.

The 2017 Oregon hazelnut crop was produced in an “off year” cycle in the alternate bearing tendency of hazelnut trees, with output totaling 32,000 tons (in-shell basis), compared with 44,000 tons in 2016. Despite reduced production, large carry-over stocks and increased imports helped alleviate the impact on U.S. supplies, on a shelled basis (table 12), driving down grower prices during the 2017/18 marketing year (July-June). Prices averaged $2,300 per ton (in-shell),

down from $2,700 per ton the previous year and the lowest in the last 4 years. Export demand was lackluster, but even then, ending stocks are expected down markedly from the previous year, suggesting strong domestic demand in 2017/18. With this season's anticipated huge domestic crop, much smaller carryover stocks from 2017/18 will likely help mitigate a supply surge in the U.S market that could potentially dampen U.S. hazelnut grower prices in 2018/19.

Table 12--Hazelnuts (filberts): Supply and utilization (shelled basis), 2000/01 to 2017/18

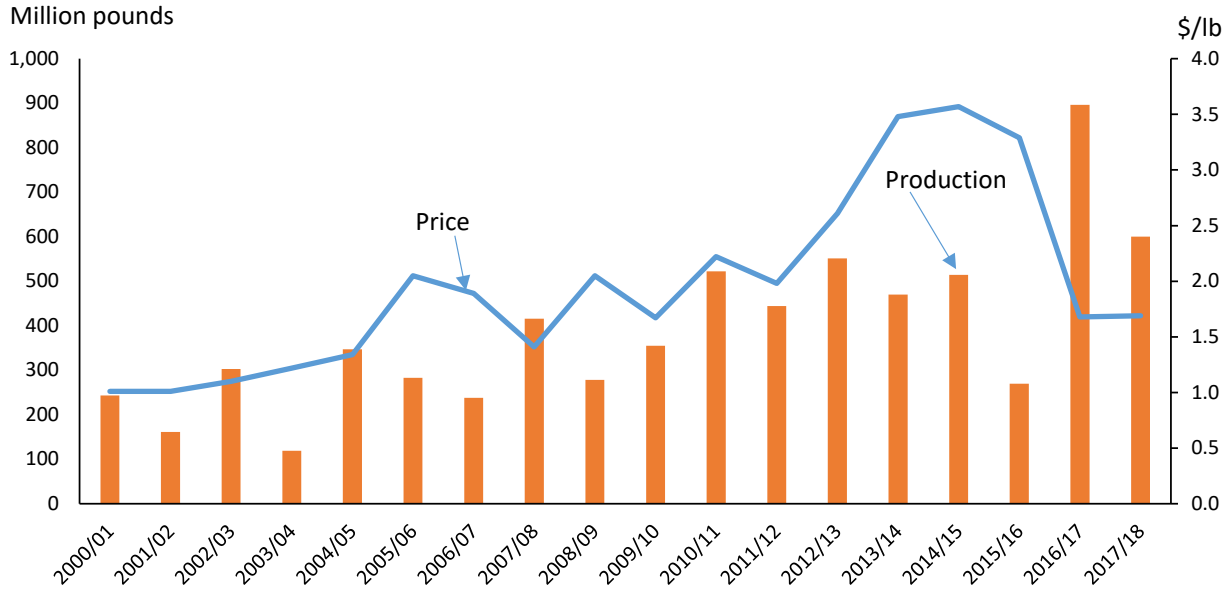
Season [1]	Utilized production	Loss and exempt	Marketable production [2]	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Utilization	
									Domestic	Per capita
					1,000 pounds					*Pounds*
2000/01	18,052	639	17,414	11,650	5,609	34,673	1,854	14,701	18,118	0.06
2001/02	39,600	1,512	38,088	15,195	1,854	55,137	6,784	22,529	25,823	0.09
2002/03	15,600	338	15,262	16,387	6,784	38,434	5,930	9,929	22,575	0.08
2003/04	30,224	734	29,490	10,902	5,930	46,321	3,633	25,589	17,099	0.06
2004/05	28,548	1,359	27,189	12,768	3,633	43,591	1,114	21,687	20,790	0.07
2005/06	20,806	783	20,023	12,082	1,114	33,218	540	26,035	6,643	0.02
2006/07	37,116	671	36,445	13,534	540	50,520	2,298	25,203	23,019	0.08
2007/08	29,355	788	28,568	13,428	2,298	44,294	2,104	27,014	15,176	0.05
2008/09	26,667	494	26,173	10,010	2,104	38,287	2,255	22,267	13,765	0.04
2009/10	38,145	1,378	36,767	8,108	2,255	47,130	2,369	30,644	14,117	0.05
2010/11	21,836	1,028	20,808	10,883	2,307	33,999	2,283	16,838	14,878	0.05
2011/12	31,218	2,134	29,085	9,617	2,283	40,985	2,969	20,851	17,165	0.05
2012/13	28,400	709	27,691	15,235	2,969	45,895	870	26,519	18,506	0.06
2013/14	36,923	250	36,673	14,533	870	52,077	4,023	32,031	16,023	0.05
2014/15 [3]	26,100	41	26,059	10,861	4,023	40,943	1,289	16,002	23,652	0.07
2015/16	23,312	551	22,761	9,224	1,289	33,274	211	19,298	13,765	0.04
2016/17	35,106	741	34,365	11,508	211	46,084	3,106	25,357	17,620	0.05
2017/18 P	25,600	85	25,515	13,775	3,106	42,396	1,401	20,028	20,967	0.06

P = Preliminary.
[1] Season begins in July.
[2] Utilized production minus loss and exempt.
[3] In-shell export figure from Hazelnut Marketing Board.
Source: USDA, Economic Research Service calculations.

Pistachio Crop Declines in 2017/18

Following 2016's record production, California's 2017 pistachio crop declined 33 percent to 600.3 million pounds, in-shell equivalent (fig. 10). Despite this drop, the 2017 crop remained above average. On a shelled basis, production for the 2017/18 marketing year (September-August) declined to 226.9 million pounds, down 49 percent from the previous year but 13 percent above the 2006/07-2015/16 average (table 13). Bearing acreage in 2017 continued to increase to a new record at 250,000 acres, consistent with consecutive annual increases spanning almost 40 years. However, significantly lower yields during last year's "off year" production cycle more than offset the increase in bearing acres, driving down production. Last year's yields declined from the near-record average of 3,750 pounds per acre in 2016 to 2,400 pounds.

Figure 10
Pistachio production and season-average grower price [1]



[1] In-shell basis.
Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruits and Nuts Summary*, various issues.

Table 13--Pistachios: Supply and utilization (shelled basis), 2000/01 to 2017/18[1]

Season [2]	Utilized production	Loss and exempt [3]	Marketable production	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Utilization	
									Domestic	Per capita
				---------- *1,000 pounds* ----------						*Pounds*
2000/01	114,164	0	114,164	920	10,462	125,547	33,329	32,641	59,577	0.21
2001/02	80,733	0	80,733	532	33,329	114,594	12,425	44,744	57,426	0.20
2002/03	149,513	0	149,513	764	12,425	162,702	56,180	44,449	62,073	0.21
2003/04	56,217	0	56,217	1,459	56,180	113,857	22,941	35,551	55,365	0.19
2004/05	170,515	0	170,515	798	22,941	194,254	42,317	74,550	77,387	0.26
2005/06	139,003	0	139,003	912	42,317	182,233	56,066	69,332	56,834	0.19
2006/07	119,000	0	119,000	1,388	56,066	176,454	56,629	80,061	39,764	0.13
2007/08	206,998	0	206,998	943	56,629	264,569	67,304	128,494	68,771	0.23
2008/09	135,392	0	135,392	941	67,304	203,637	32,922	139,797	30,918	0.10
2009/10	174,769	0	174,769	1,294	32,922	208,986	21,213	133,177	54,596	0.18
2010/11	250,125	0	250,125	550	21,213	271,887	72,472	145,884	53,531	0.17
2011/12	222,000	0	222,000	920	72,472	295,392	45,331	172,788	77,273	0.25
2012/13	278,255	0	278,255	1,198	45,331	324,784	55,102	185,858	83,824	0.27
201314	234,484	0	234,484	542	55,102	290,128	38,471	194,980	56,677	0.18
2014/15	246,332	0	246,332	910	38,471	285,714	79,032	146,197	60,485	0.19
2015/16	134,593	0	134,593	1,151	79,032	214,776	51,133	100,480	63,163	0.20
2016/17	446,299	0	446,299	1,348	51,133	498,780	126,769	222,873	149,138	0.46
2017/18 P	226,915	0	226,915	1,498	126,769	355,182	44,981	172,620	137,581	0.42

P = Preliminary.
[1] Conversion factor from in-shell to shelled basis varies year to year for production, stocks, and exports. For imports, the conversion factor was a constant 0.40.
[2] Season begins in September.
[3] Utilized production minus marketable production.
Source: USDA, Economic Research Service calculations.

While down from the previous year, total pistachio supplies in the United States well exceeded the historic average due to massive beginning stocks, above-average domestic production, and higher imports, keeping a lid on grower prices during 2017/18. The 2017/18 average grower price was $1.69 per pound, compared with $1.68 per pound during the 2016/17 bumper-crop year. Season-average prices ranged from $1.98-$3.57 per pound during 2010/11-2015/16.

As was the case over much of the past decade, California pistachios have seen positive demand in the domestic and international markets. The very large U.S. supplies and low prices in 2016/17 resulted in record volumes channeled to both these markets. Domestic availability and export volume slipped from these record volumes in 2017/18 but are expected to finish the season at above-average levels relative to other recent years, partly due to continued favorable pricing, likely leading to sharply diminished ending stocks.

Data from the Administrative Committee for Pistachios indicate year-to-date domestic shipments in 2017/18 through July were up 9 percent from the same period in 2016/17. At the same time, export shipments were almost unchanged.

Season-to-date export volumes are up thus far to key markets in North and South America and to the Middle East and Africa, offsetting declines to Asia (particularly to Hong Kong, South Korea, the Philippines, Singapore, Taiwan, Thailand, and Vietnam) and Central America (Costa Rica and Guatemala).

The pistachio harvest for the 2018/19 season began in early September. Nonbearing land and acreage in new plantings have increased in recent years from 69,312 acres and 7,500 acres, respectively, in 2015 to 79,582 acres and 18,000 acres in 2017. Barring any extreme weather problems, crop-size potential during the 2018 crop year likely will reflect additional acres coming into production and the “on year” cycle in the alternate bearing tendency of pistachio trees.

U.S. Pecan Production Up in 2017/18

U.S. pecan production increased to 293.9 million pounds, on an in-shell basis, during the 2017/18 marketing year (October-September), up 8 percent from the previous year. Making up 92 percent of total volume, production of improved varieties increased 8 percent. At the same time, the native and seedling volume was up 18 percent. Production increases in New Mexico, Louisiana, Arkansas, and Oklahoma more than offset declines in other States, including Georgia, the largest producer. Georgia, New Mexico, and Texas remain the top three pecan-producing States in 2017/18, with combined output accounting for over 80 percent of the U.S. total.

Overall domestic supplies (on a shelled basis) increased moderately in 2017/18 due to a bigger domestic crop and large beginning stocks (table 14), driving down pecan grower prices during the season. Prices for the season averaged $2.33 per pound for all pecans (native and improved), down from the record $2.59 in 2016/17. Production increases placed downward pressure on grower prices for improved varieties (down 10 percent) as well as the native and seedling varieties (down 11 percent). Due to the lower prices, overall crop value declined to $684.3 million in 2017/18, although it still ranked as the second-highest on record after the $696.8 million of the previous year. NASS will release the initial U.S. pecan production forecast for the 2018/19 season in the October 2018 issue of the *Crop Production* report.

Lower grower prices in 2017/18 helped bolster demand for U.S. pecans. As with domestic availability, cumulative exports for the season through July show volume gains in in-shell (up 10 percent) and shelled (up 6 percent) pecan sales relative to the same time in 2016/17, with increased deliveries to some key markets, including Mexico, Europe (particularly the Netherlands, United Kingdom, Germany, France, Belgium, and Spain), China, and Japan. In terms of value, 2017/18 season-to-date exports have totaled $553.2 million, 11-percent higher than the same time the previous year and closing in on the 2016/17 record of $618.0 million.

Table 14--Pecans: Supply and utilization (shelled basis), 1980/81 to 2017/18 [1]

Season [2]	Utilized production	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Utilization	
							Domestic	Per capita
				1,000 pounds				*Pounds*
2000/01	92,647	32,990	76,152	201,788	49,003	20,045	132,740	0.47
2001/02	145,580	35,456	49,003	230,039	76,188	24,972	128,879	0.45
2002/03	78,444	41,672	76,188	196,304	28,704	30,523	137,078	0.47
2003/04	116,968	62,719	28,704	208,392	41,177	34,169	133,046	0.46
2004/05	82,552	81,150	41,177	204,879	29,190	30,565	145,124	0.49
2005/06	125,251	75,403	29,190	229,845	59,588	38,181	132,075	0.44
2006/07	91,394	56,998	59,588	207,980	30,573	44,105	133,303	0.44
2007/08	180,255	79,853	30,573	290,681	85,438	71,319	133,924	0.44
2008/09	98,211	61,855	85,438	245,503	42,225	52,652	150,627	0.49
2009/10	131,982	83,178	42,225	257,385	39,960	70,502	146,923	0.48
2010/11	140,407	88,457	39,960	268,824	42,817	61,479	164,528	0.53
2011/12	124,601	74,610	42,817	242,028	53,922	74,113	113,993	0.36
2012/13	140,775	79,347	53,922	274,044	48,106	91,274	134,664	0.43
2013/14	130,768	92,493	48,106	271,367	78,133	81,408	111,826	0.35
2014/15	128,112	103,964	78,133	310,210	54,323	99,944	155,943	0.49
2015/16	104,513	113,712	54,323	272,548	55,633	79,731	137,184	0.43
2016/17	127,935	132,637	55,633	316,205	69,489	103,655	143,062	0.44
2017/18 P	136,053	132,000	69,489	337,542	79,527	111,000	147,014	0.45

P = Preliminary.

[1] Conversion factors from in-shell to shelled basis vary year to year for production, stocks, and exports. For imports, the conversion factor was a constant 0.50.

[2] Season begins in October as of 1989, prior to 1989 season began in July.

Source: USDA, Economic Research Service calculations.

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