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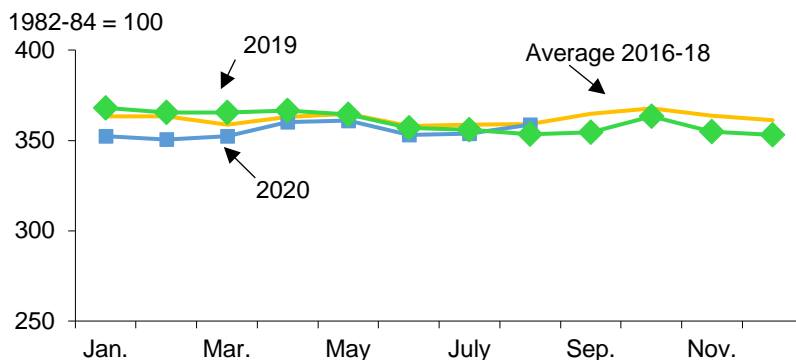
# Fruit and Tree Nuts Outlook: September 2020

Jaclyn Kramer, coordinator  
Skyler Simnitt and Linda Calvin

## January through July Consumer Price Index Down from a Year Ago

The 2020/21 marketing year is already underway for many noncitrus fruit crops. The USDA National Agricultural Statistics Service (NASS) forecast apple, peach, and cherry (sweet and tart) production down while table grape, cranberry, and pear production are expected to increase. The U.S. tree nut industry is forecast to have record-high almond, walnut, and hazelnut crops for 2020/21. Declining production is forecast for all citrus fruit in the 2020/21 season. Growers face uncertainty with the impact of the COVID-19 pandemic on 2020 prices. For January to July 2020, the Consumer Price Index (CPI) for fresh fruit was down from the same period last year, perhaps the result of more supplies directed to retail from the food service industry; some declining exports during the shut-down; tariffs in top export markets; and changing consumer behavior. August CPI for fresh fruit increased, up 1.5 percent from the previous August.

**Consumer Price Index for fresh fruit**



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

# Price Outlook

## Fruit and Nut Grower Price Index Is Up

February 2020, NASS noncitrus prices now reflect USDA Agricultural Marketing Service (AMS) freight on board (fob) shipping point prices and therefore are not directly comparable with the previous year's prices which were a combination of fob prices and survey data. June to July 2020 grower prices are comparable. With this caveat, at 147.9 (2011 = 100), the July 2020 grower price index is up from the July 2019 index of 121.9, but down slightly from 150.7 the month before. Citrus grower prices played a significant role in the increase of the grower price index. NASS reported higher prices for some citrus fruit, apples, peaches, pears, and strawberries in July 2020, up from the previous month (Table 1).

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

Commodity	June	July	Month-to-month change
	2020	2020	June to July 2020
	-----Dollars per box-----		<i>Percent</i>
Citrus fruit: <sup>1</sup>			
Grapefruit, all	13.41	15.95	18.9
Grapefruit, fresh	--	--	--
Lemons, all	20.07	21.01	4.7
Lemons, fresh	27.49	30.29	10.2
Oranges, all	16.15	15.53	-3.8
Oranges, fresh	22.37	19.41	-13.2
	-----Dollars per pound-----		
Noncitrus fruit:			
Apples, fresh <sup>2</sup>	0.586	0.600	2.4
Grapes, fresh <sup>2</sup>	1.315	1.140	-13.3
Peaches, fresh <sup>2</sup>	0.595	0.655	10.1
Pears, fresh <sup>2</sup>	0.525	0.670	27.6
Strawberries, fresh	1.080	1.990	84.3

-- Insufficient number of reports to establish an estimate.

<sup>1</sup> Equivalent on-tree price.

<sup>2</sup> 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.

Note: Beginning with the February 2020 estimates, all monthly price estimates for the non-citrus fruits are derived exclusively from data provided by USDA's Agricultural Marketing Service (AMS) and reflect freight on board shipping point basis.

Previously these estimates were based on a combination of survey data, and information from AMS.

Therefore 2020 non-citrus fruit grower prices are not comparable with previous years.

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

Some factors behind the grower price movements for selected fresh-market fruit are as follows:

- Declining citrus production in 2019/20 and higher consumption in the early part of the year kept upward pressure on most citrus grower prices.
- Supplies of peaches were down due to frost in Colorado, a decline in acreage in Georgia, and California's tight labor supply, pushing up prices in July.
- Strawberry shipments from California were down 9 percent in July and demand has been strong, likely keeping grower prices high.
- Lower U.S. pear shipments in June-August 2020 likely increased fresh pear prices in July.

## Consumer Price Index for Fresh Fruit, Down in January through July 2020, Rises in August 2020

The Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) for fresh fruit was reported at 358.8 (1982-84 = 100) in August 2020, up from 353.4 in August 2019 (Table 2). Retail prices for peaches, strawberries, and grapes were up relative to August 2019 prices. While no prices were reported for Red Delicious apples, the decrease in the CPI for apples in August indicates generally lower retail apple prices, likely a result of abundant apples in cold storage this year. Banana imports are up 13 percent year-to-date, likely decreasing prices. The CPI for fresh fruit declined in 2020 from January to July. A decrease in exports and supplies to the food service industry may have directed more supplies to retail. The CPI increased in August 2020. The increase in prices may be the result of the decrease in shipments of peaches, pears, and strawberries.

Table 2--U.S. monthly Consumer Price Index for fresh fruit and retail prices for selected fruit, 2019-20

Commodity	Unit	2019		2020		2019-20 change	
		July	August	July	August	July	August
		----- 1982-84 = 100 -----				--- Percent ---	
Fresh fruit		355.8	353.4	353.7	358.8	-0.6	1.5
Apples		354.7	360.0	330.3	333.7	-6.9	-7.3
		--- Dollars ---		--- Dollars ---		--- Percent ---	
Fresh:							
Navel oranges	Pound	1.411	1.442	--	--	--	--
Grapefruit	Pound	1.389	1.353	--	--	--	--
Lemons	Pound	2.041	2.030	--	--	--	--
Red Delicious apples	Pound	na	na	na	na	na	na
Bananas	Pound	0.569	0.578	0.580	0.576	1.9	-0.3
Peaches	Pound	2.143	1.943	--	2.088	--	7.5
Anjou pears	Pound	1.552	--	--	--	--	--
Strawberries <sup>1</sup>	12-oz. pint	2.111	2.010	2.020	2.214	-4.3	10.1
Thompson seedless grapes	Pound	2.150	2.023	2.121	2.183	-1.3	7.9

na = not available.

-- Insufficient marketing to establish a price.

<sup>1</sup> Dry pint.

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

# Noncitrus Fruit Outlook

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## Production a Mixed Bag with Commodity Forecasts Up and Down

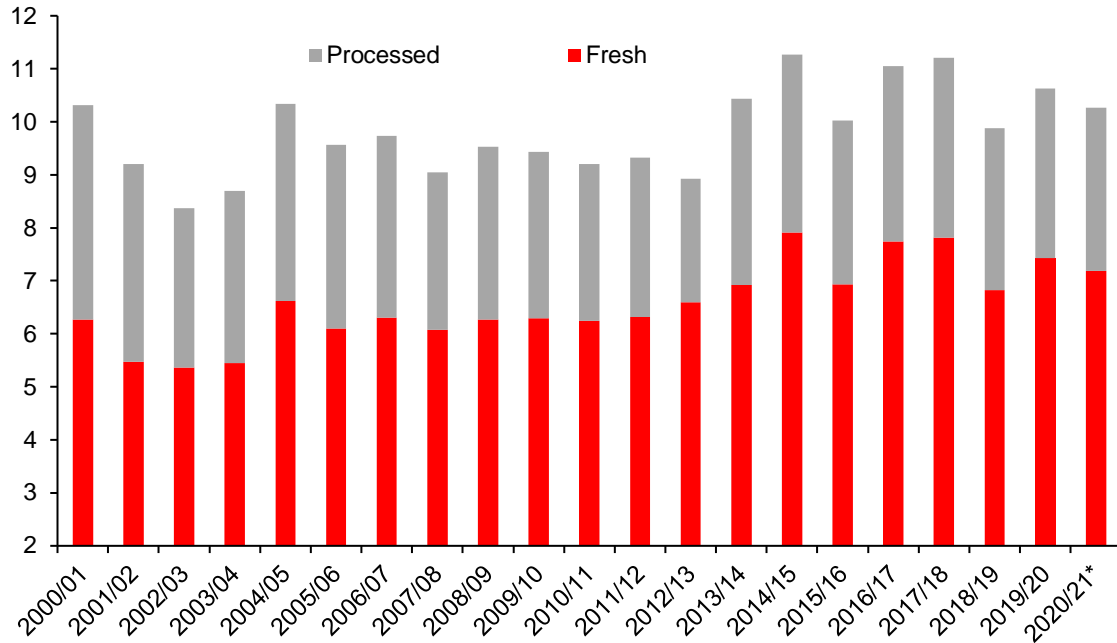
The 2020 harvest is underway for many noncitrus fruit crops. USDA's National Agricultural Statistics Service (NASS) forecast 2020 production levels up for the pear, grape, and cranberry crops; the apple, peach, and cherry (both sweet and tart) crops are expected to be down. COVID-19 has brought about many changes, which may potentially affect the quantity of the forecast crop harvested if there are labor shortages. COVID-19 also has a potential impact on domestic, export, and import markets. These effects are still evolving (see Special Article "The Initial Impact of COVID-19 on the Fruit Industry: Apples, Table Grapes, and Strawberries, March-June 2020"). In addition, some Western crops like apples may be affected by the smoke from the massive September wildfires.

**U.S. apple crop expected to be smaller:** For the 2020/21 season (August-July) U.S. production is forecast at 10.65 billion pounds, down 3 percent from a year ago (fig. 1). Production is expected to be down in all States except for Oregon, which is a small producer. The Washington crop is forecast to be 7.4 billion pounds, down 3 percent from last year. As for all crops during the pandemic, the supply of labor is uncertain, which could affect the quantity of apples harvested. Lower supplies could put upward pressure on prices. Between the 2010/11 and 2019/20 seasons, apple exports averaged 27 percent of total U.S. supply (production plus imports). As long as high tariffs on apples remain in India and China, the export market will probably remain sluggish, pushing more apples onto the domestic market and exerting downward pressure on prices. Production in major States where apple processing is important is forecast down 2 percent in New York, down 3 percent in Michigan, down 17 percent in Pennsylvania, and down 16 percent in Virginia. This could push processed apple production down and prices up.

Figure 1

**U.S. apple production down in 2020/21**

Billion pounds



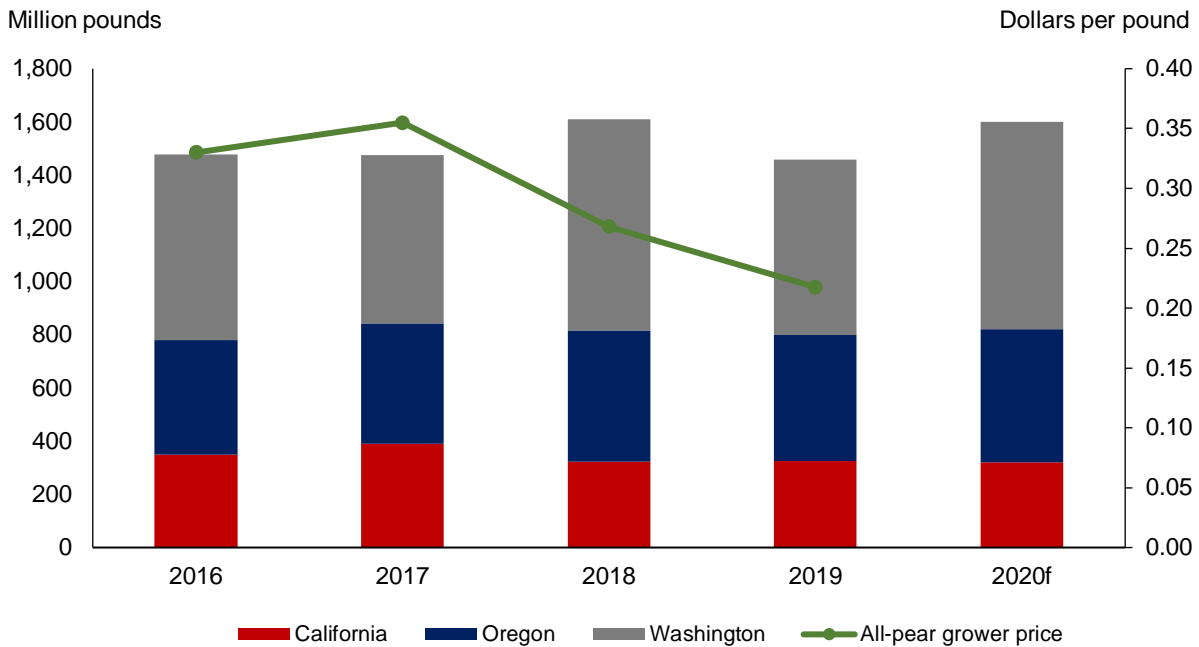
\* USDA, Economic Research Service projection.

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

**U.S. pear crop forecast up:** NASS forecasts the 2020/21 season (July-June) pear crop at 1.60 billion pounds (or 800,000 tons). If realized, the 2020 crop would be up nearly 10 percent from the previous season (fig. 2). Production is expected to increase in Washington by 18 percent and Oregon by 6 percent, with California declining 2 percent (fig. 2). Growers in Washington and Oregon experienced ideal growing conditions this spring and summer.

A slightly larger crop should put downward pressure on pear prices. A strong dollar, due in part to COVID-19, and transportation problems may dampen export demand. Pear imports were 13 percent of total U.S. supply (domestic production plus imports) in the 2019/20 season; imports were down less than 1 percent from the previous season and may be down again this season since imports are coming by sea from Argentina (52 percent in 2019/20), Chile, China, and South Korea. Total exports were 24 percent of the total supply in the 2019/20 season, down 9 percent from the previous season which may be due to COVID-19 sea transportation problems. Since Mexico and Canada are the two largest export markets (60 percent and 23 percent respectively in 2019/20), these markets served by truck transportation may be relatively unscathed in terms of logistics compared to overseas markets.

Figure 2  
**U.S. pear crop in 2020 up 10 percent from a year ago**



f = forecast

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2019 Summary and Crop Production* (August 2020 issue).

**Total U.S. grape crop (raisins, wine, table, and juice grapes) to be up 4 percent: NASS**

forecast for the 2020/21 season (May-April) includes a 10 percent increase in grape production in Washington State and a 4 percent increase in California (Table 3). NASS provides estimates of table-type grape production in California, which includes grapes used for table grapes and for juice. NASS predicts the 2020/21 crop of table-type grapes to be 2,700 million pounds, up 14 percent from the previous season. The California Table Grape Commission estimates the 2020/21 crop of grapes used as table grapes to be 1,993.1 million pounds, about equal to their last season's production of 1,994.81 million pounds. The table grape harvest began in mid-May, but early season grape shipments were down (49 percent in May and 28 percent in June). Imports from May-July were down 12 percent from the same period a year ago. Table grape exports from May through July 2020 were down almost 9 percent from the same period last year. The decline in exports is probably due to some combination of problems: low supply early in the season; some decline in demand; tariffs in major export markets; and shutdowns or slowdowns associated with COVID-19. If exports remain low, there will be downward pressure on domestic prices. Canada is the biggest export market with 34 percent of exports last season; Mexico is the second largest market with 11 percent of exports.

Table 3--Grapes: Total production and season-average price received by growers in principal States, 2017-19 and indicated 2020 production

State	Production				Price		
	2017	2018	2019	2020	2017	2018	2019
	--Million pounds--				-- Cents per pound --		
Michigan <sup>1</sup>	127	na	na	na	19.0	na	na
Missouri <sup>1</sup>	12	na	na	na	35.1	na	na
New York <sup>1</sup>	374	na	na	na	18.5	na	na
North Carolina <sup>1</sup>	14	na	na	na	36.7	na	na
Ohio <sup>1</sup>	9	na	na	na	32.2	na	na
Oregon <sup>1</sup>	154	na	na	na	111.5	na	na
Pennsylvania <sup>1</sup>	183	na	na	na	14.1	na	na
Texas <sup>1</sup>	24	na	na	na	81.0	na	na
Virginia <sup>1</sup>	18	na	na	na	108.5	na	na
Washington							
Wine	458	522	402	520	60.5	60.5	66.0
Juice	380	410	380	340	11.0	11.0	11.3
All	838	932	782	860	38.1	38.7	24.4
Total <sup>2</sup>	1,754	932	782	860			
California:							
Wine	8,032	8,570	8,000	8,000	46.4	50.5	48.6
Table	2,380	2,600	2,360	2,700	66.5	48.9	51.5
Raisin <sup>3</sup>	2,602	3,090	2,600	2,800	20.7	21.4	14.8
All	13,014	14,260	12,960	13,500	45.0	43.9	42.3
United States	14,768	15,192	13,742	14,360	44.1	43.6	42.1

na = not available.

<sup>1</sup> Estimates discontinued.

<sup>2</sup> Sum of State production, excluding California.

<sup>3</sup> Fresh weight of raisin-type grapes.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2019 Summary and Crop Production* (August 2020).

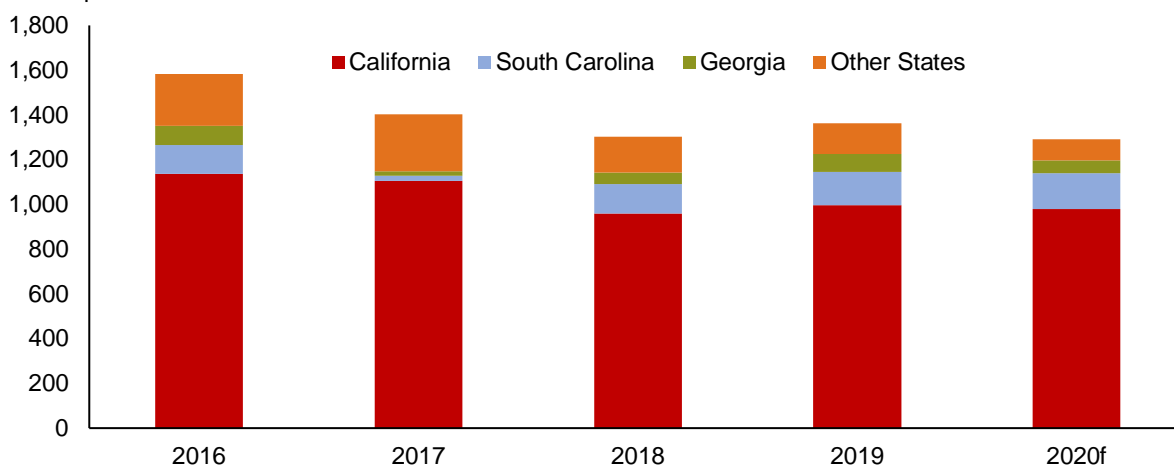
**Total peach production forecast down:** The forecast for the 2020 peach crop is 1,291 million pounds, down 5 percent from the previous year (fig. 3). Looking just at California freestone peaches for the fresh market plus total peach production in other States, the U.S. freestone peach harvest is forecast down 10 percent from last season. The California freestone peach crop for 2020 (56 percent of U.S. production last year), was forecast at 6 percent lower than last year. South Carolina, the second largest producer, was up 7 percent and is expected to be the largest crop since 2011. The crop in Georgia, the third largest producer, is forecast down 28 percent from last year which was the highest yield in 20 years. Exports in June and July 2020 were down 10 percent from the same period the previous year. While NASS forecasts the California clingstone peach crop to be up 2 percent this year, the California Canning Peach Association, the cooperative bargaining association in the canning cling peach industry, reported the 2020 base price agreement was ratified with processors at \$497.50 per ton, up 2 percent from the previous year.



Figure 3

**U.S. peach production to decrease in 2020**

Million pounds



f = forecast

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts 2019 Summary and Crop Production* (August 2020 issue).

**U.S. sweet and tart cherry crop forecast down:** The sweet cherry crop was forecast to be down almost 6 percent in the 2020/21 season (June to May) to 334,000 tons (or 668 million pounds). Washington State, which accounted for 67.5 percent of production in 2019, is forecast to decrease total production by 12 percent due to severe cold snaps in February and mid-March although the impact varied. Oregon (16.1 percent of the 2019 crop) had similar cold snaps with varied impact across regions but is still forecast to increase by 7 percent. California (16.4 percent of the 2019 crop) had cool weather in March which extended the growing season and production is forecast to be up 8 percent. U.S. Commerce trade data show May through July exports are down almost 19 percent from the same period last; volume is down to all of the top 10 markets with the exception of Vietnam. High retaliatory tariffs continue to impede export shipments to China. Grower prices for the 2020/21 season are uncertain, lower production would put upward pressure on U.S. prices, but reduced exports will increase domestic supplies, putting downward pressure on prices.

The 2020 tart cherry crop is forecast to be 197 million pounds, down 25 percent from 2019. Production was down 28 percent in Michigan, the largest producer, due to frost. Production was also down in Utah and Washington. Production was up in New York and Wisconsin. Michigan tart cherries are mechanically harvested, and most producers had enough labor in the orchards to harvest the smaller crop. Some Michigan tart cherry processors had problems getting enough

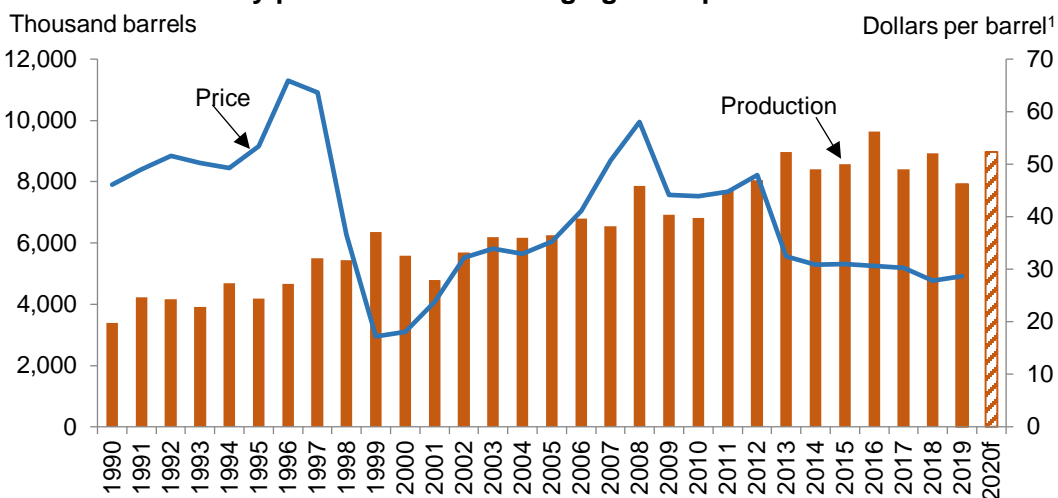
labor. The bottleneck in processing led to some fruit never getting to the processor, while some fruit was stored at the farm before going to the processor and the quality declined.

The fresh tart cherry market is less than 1 percent of tart cherry production with the rest going to processing. Lower production and lower beginning tart cherry stocks (down 10 percent) will put upward pressure on processed tart cherry prices. Imports of frozen tart cherries were down 46 percent in the January-July 2020 period compared to the same period the year before which will put additional upward pressure on prices. Tart cherry exports were down 14 percent for the first 7 months of this year compared to the same period last year.

**Another large U.S. cranberry crop expected:** USDA NASS predicts 2020/21 (September-August) cranberry production to be up 13 percent, with Wisconsin, the largest producer, up 18 percent after a poor crop in 2019 (fig. 4). Massachusetts, the second largest producer, is predicted to be up 11 percent to a record 2.240 million barrels. As of August 2, 60 percent of the Massachusetts cranberry crop was rated to be in good to excellent condition. Of the major producers, only Oregon is expected to face a decline in production (down 5 percent). If realized, the U.S. harvest would be the largest since 2016, putting downward pressure on prices. The Cranberry Marketing Committee reports that cranberry stocks as of June 2020 are down 22 percent from a year ago, likely tempering downward pressure on 2020/21 cranberry prices.

Figure 4

**U.S. total cranberry production and average grower price**



f = forecast

¹ 1 barrel = 100 pounds.

Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruits and Nuts Summary*, various issues and *Crop Production* (August 2020 issue).

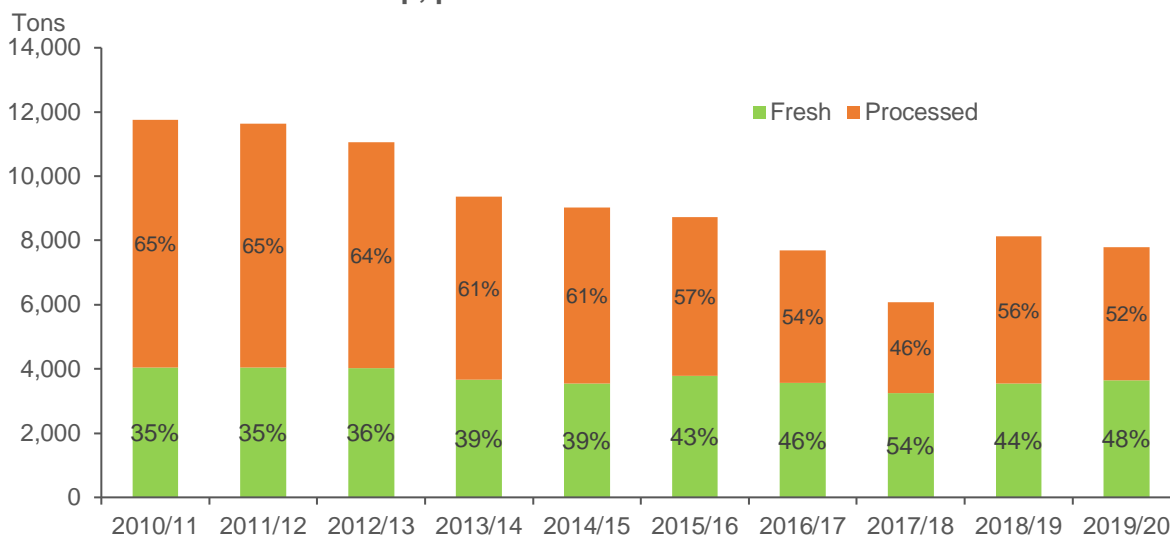
# Citrus Fruit Outlook

## Total U.S. Citrus Production is Down but Fresh Production is Up in 2019/20

NASS final estimates for the 2019/20 citrus season show U.S. citrus production reached 7.8 million tons, down 4 percent from 2018/19 (fig. 5). Total production is below levels forecast at the outset of the season, mostly due to a lower than anticipated orange crop in Florida (Table 4). As most Florida oranges are for processing into juice this decrease resulted in lower overall citrus production for the processing market. A larger share of total production went to the fresh market, therefore fresh market citrus is up this season. Total citrus volume in 2019/20 was slightly higher than the 2016/17 volume.

Total citrus production in Florida decreased to 3.3 million tons in 2019/20, down 5 percent from the previous season. Texas growers also experienced declines in production reaching a 5-year low of 232,950 tons (down 33 percent from last year). In California, increases in production of oranges and lemons for the fresh market were offset by decreases in grapefruit and tangerine production, resulting in production levels 2 percent below last season (4.19 million tons). Arizona experienced a significant increase in lemon production this year (33 percent).

Figure 5  
**U.S. citrus for fresh market up, processed market down**



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

Table 4--Citrus: Utilized production, 2017/18 to 2019/20<sup>1</sup>

Crop and State	Utilized			Utilized		
	2017/18	2018/19	2019/20	2017/18	2018/19	2019/20
Oranges:	---- 1,000 boxes <sup>2</sup> ----			----1,000 tons ----		
Early/midseason and navel:						
California	35,900	42,000	44,300	1,436	1,680	1,772
Florida <sup>3</sup>	18,950	30,400	29,650	853	1,368	1,334
Texas	1,530	2,210	1,150	65	94	49
<b>Total<sup>4</sup></b>	<b>56,380</b>	<b>74,610</b>	<b>75,100</b>	<b>2,354</b>	<b>3,142</b>	<b>3,155</b>
Valencia:						
California	8,300	10,200	9,000	332	408	360
Florida	26,100	41,450	37,650	1,175	1,865	1,694
Texas	350	290	190	15	12	8
<b>Total</b>	<b>34,750</b>	<b>51,940</b>	<b>46,840</b>	<b>1,521</b>	<b>2,286</b>	<b>2,062</b>
<b>All oranges</b>	<b>91,130</b>	<b>126,550</b>	<b>121,940</b>	<b>3,875</b>	<b>5,428</b>	<b>5,217</b>
Grapefruit:						
California	3,800	4,200	3,800	152	168	152
Florida	3,880	4,510	4,850	165	192	206
Texas	4,800	6,100	4,400	192	244	176
<b>All grapefruit</b>	<b>12,480</b>	<b>14,810</b>	<b>13,050</b>	<b>509</b>	<b>604</b>	<b>534</b>
Tangerines and mandarins:						
California	19,200	26,500	22,000	768	1,060	880
Florida <sup>4</sup>	750	990	1,020	36	47	48
<b>All tangerines and mandarins</b>	<b>19,950</b>	<b>27,490</b>	<b>23,020</b>	<b>804</b>	<b>1,107</b>	<b>928</b>
Lemons:						
Arizona	1,000	1,350	1,800	40	54	72
California	21,200	23,700	25,700	848	948	1,028
<b>All lemons</b>	<b>22,200</b>	<b>25,050</b>	<b>27,500</b>	<b>888</b>	<b>1,002</b>	<b>1,100</b>
<b>All citrus<sup>5</sup></b>	<b>145,760</b>	<b>193,900</b>	<b>185,510</b>	<b>6,076</b>	<b>8,140</b>	<b>7,780</b>

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

<sup>2</sup>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); tangerines and mandarins in CA-80 (75 prior to the 2010-11 crop year), FL-95.

<sup>3</sup>Includes temples. Beginning in 2016/17, temples included in tangerines and mandarins for Florida.

<sup>4</sup>Beginning in 2016/17, tangelos are included in tangerines and mandarins for Florida.

<sup>5</sup>Totals may not be equivalent to the sum of the categories due to rounding.

Source: USDA, National Agricultural Statistics Service, *Citrus Fruits 2020 Summary* (August 2020).

The U.S. citrus crop was valued at \$3.4 billion in 2019/20. This is a slight decrease (less than one percent) in value of production from 2018/19. Despite lower production the decrease in value was minimal due to higher average prices in 2019/20.

**U.S. citrus fresh-market crop larger in 2019/20:** U.S. citrus production for the fresh market was estimated at 3.7 million tons in 2019/20, up 5 percent from the previous season, with larger fresh-market crops of oranges (up 10 percent), grapefruit (up 5 percent), and lemons (up 3 percent). Representing just under half of all U.S. citrus production, the fresh-market orange crop

increased from the previous season to 1.88 million tons, thanks to larger fresh market crops in California and Florida. Overall, the average equivalent-on-tree price for a box of fresh oranges increased from \$15.09 in 2018/19 to \$17.08 in 2019/20, mostly due to higher prices in the months of May, June, and July. These higher prices may suggest an increase in demand for fresh oranges this season, as per capita availability is up 9 percent from 2018/19.

Whether this increase in prices over last year correspond to a temporary spike in demand or a new trend in the market, remains to be seen. U.S. imports of fresh oranges in 2019/20 (November through July) were down 1 percent from the same period last year, while fresh orange exports increased 8 percent to date. South Korea remained the top market for U.S. fresh oranges, followed by Canada and Hong Kong.

**Florida leads in grapefruit production in 2019/20:** Florida led other States in grapefruit production this season with Florida growers producing a combined 206,000 tons for the fresh and processed markets. Texas came in second, producing 176,000 tons while California came in last at 164,000 tons. This marks a 28 percent decrease in Texas grapefruit production from last season, and the loss of Texas's position as the lead grapefruit producing State. Declines in grapefruit production in Texas in 2019/20 may be due to a prolonged drought that affected parts of the Rio Grande Valley (Texas's primary citrus producing region). Higher production levels of grapefruit for the fresh market in Florida and California this season, however, more than offset losses in Texas as total fresh-market production increased by 5 percent in 2019/20. Higher average yields in Florida this season are likely due to favorable weather. Despite a larger fresh market crop than last season, imports of fresh grapefruit from September through July 2019/20 were up by 3 percent from the same period last year, while exports were down by 2 percent. There was a 6 percent increase in the amount of fresh grapefruit available in the U.S. this season with per capita consumption at 1.53 pounds. This increase in domestic consumption is reflected in lower average equivalent-on-tree grower prices in 2019/20 compared with last season.

**U.S. lemon crop in 2019/20 largest in decades:** U.S. growers produced 1.1 million tons of lemons in 2019/20 the largest lemon crop in 39 years. More than two-thirds of lemons (760,000 tons) went to the fresh market, a 3 percent increase in quantity over 2018/19. Higher yields in both California and Arizona were likely due to favorable weather. Perhaps in response to the larger crop, fresh lemon imports to the U.S. this season (August through July 2019/20) were down by 22.4 million pounds (7 percent) from last season. Mexico, Chile, and Argentina remain

the main suppliers of lemons to the U.S. market, and together they supply 96 percent of lemon imports into the United States. Additionally, U.S. fresh lemon exports this season lagged 3 percent behind 2018/19, continuing what is now a five-year trend in declining lemon exports. Lower export volumes alongside higher domestic production increased the total supply of fresh market lemons in the United States, with per capita consumption increasing by 2 percent in 2019/20. A greater supply of fresh lemons in the United States this season resulted in lower grower prices, as the average equivalent-on-tree price per box fell from \$24.91 in 2018/19 to \$20.55 (17 percent) in 2019/20.

**Smaller U.S. tangerine crop in 2019/20:** Production of U.S. tangerines, mandarins, and tangelos for the fresh market is down by 13 percent (107,000 tons) this season due to smaller crops in California. Imports for tangerines, mandarins, and tangelos were higher for the period from November through July 2019/20, with 732 million pounds imported primarily from Chile, Peru, and Morocco. The increase in imports did not compensate for the lower domestic production; 2019/20 is the first time since 2006/07 that there was a year-over-year reduction in the total quantity of tangerines, mandarins, and tangelos available for consumption in the United States. Per capita consumption in 2019/20 was 6.23 pounds.

**Majority of U.S. citrus goes to processing in 2019/20:** The majority of U.S. citrus in 2019/20 (52 percent) went to the processing market, most of which was oranges. Florida produced 88 percent of all U.S. oranges for processing while California and Texas produced the remainder. All three of these States had smaller orange crops for the processing market in 2019/20 compared with 2018/19. Florida's production levels were 7 percent below last season, while California and Texas experienced decreases of 21 percent and 75 percent, respectively. A total of 414 million gallons of orange juice were produced domestically in the United States in 2019/20, 10 percent below production from last season.

Orange juice imports to the U.S. from October to July 2019/20 were down by more than 184 million gallons (38 percent) from the same period last season. This decrease in orange juice imports from 2018/19 may be due to higher than average beginning stocks (524 million gallons), but also due to smaller crops in Brazil and Mexico. Brazil and Mexico remain the primary suppliers of orange juice to the United States, accounting for 56 percent and 34 percent of the orange juice imported. U.S. exports of orange juice from October to July 2019/20 increased over last season by 13 percent (5.7 million gallons). Canada remains the primary export market for

U.S.-produced orange juice, accounting for 70 percent of exports. The Dominican Republic and South Korea were the second and third largest purchasers of U.S. orange juice, accounting for 9 and 4 percent of U.S. exports, respectively.

Retail sales of orange juice in the United States reached the highest level in five years as a result of increased purchases during the months of February through May 2020 (fig. 6). This increase in retail sales is attributed to consumer health concerns heightened by COVID-19, and the common perception that orange juice has immune-enhancing properties. Orange juice sales peaked at 44.02 million gallons during the four-week period ending on April 11<sup>th</sup> and have since remained above 2017-2019 levels. As of May 2020, this spike in retail sales had no obvious effect on equivalent on-tree-prices, which were down by 7 percent from the same period last season (November through May). The Florida Department of Citrus attributed this decline in grower prices to delayed market response to the forecast and higher pick-and-haul costs. Substantially higher orange juice beginning stocks this season may also play a role.



### **U.S. grapefruit for processing is down in 2019/20**

U.S. grapefruit production for the processing market was down by 84,856 tons (26 percent) in 2019/20 due to decreased production levels in California and Texas. This smaller crop for the processing market resulted in a 22 percent reduction in grapefruit juice production in 2019/20. Similar to the orange juice market, retail sales of grapefruit juice experienced a brief uptick from February-May 2020, peaking at 1.14 million gallons during the four-week period ending April 11. This brief increase in retail sales did not evidently result in higher consumption levels however, as cold storage data from the Florida Department of Citrus and NASS indicate higher ending inventories than in 2018/19.

U.S. import levels of grapefruit juice this season (3.91 million gallons) are less than a third of what they were in 2018/19. The primary suppliers of grapefruit juice to the United States were Mexico, South Africa, and Spain. Grapefruit juice exports are down 17 percent this season for October to July 2019/20. The three top export markets for U.S. grapefruit juice for October to July 2019/20 were Canada, Japan, and Belgium. U.S. grapefruit juice exports have decreased every year since the 2010/11 season. This trend may indicate changing consumer preferences in primary destination markets.

## **U.S. Citrus Production 2020/21 Likely Below 2019/20 Levels**

NASS will release initial 2020/21 forecasts for all-citrus production in the United States in October. However, an early forecast pegs navel orange production in California at 84 million 40-pound cartons, down 5 percent from the previous year, according to the *2020/21 California Navel Orange Objective Measurement Report* released September 11 by the NASS Pacific Regional Office. This forecast decrease in production is most likely due to a reduction in bearing acreage, as forecast average fruit size was slightly larger and fruit set was unchanged from the previous year.

The results of the first orange and grapefruit maturity tests for Florida's 2020/21 season were published by NASS on September 11. Sampled fruit included early oranges, midseason oranges, and red and white seedless grapefruit. The survey shows that all oranges and grapefruit have lower unfinished juice and solids per box for 2020/21, compared with the same time last season, suggesting a lower saleable juice yield per box in 2020/21.



Citrus greening disease, also known as Huanglongbing (HLB), remains a threat to citrus grove health and productivity across all producing States. In Florida, where greening is rampant, total bearing acreage decreased by 1.7 percent this season to 380,500 acres. In the other citrus producing States greening is less prevalent yet can lead to higher production costs, especially as infected trees are removed and or replaced. In 2019/20 there was a modest increase in total bearing acreage of California citrus (700 acres) over last season, mostly due to new lemon and tangerine acreage, but acreage devoted to orange production declined by 2000 acres (1 percent). In contrast, Texas had a 3 percent (700 acre) reduction in total citrus bearing acreage from the 2018/19 season. Assuming these trends continue, expect total production in 2020/21 to be slightly below 2019/20 levels.

While greening continues to affect U.S. citrus production, hope remains for the long-term viability of the industry. The 2019/20 season provided multiple reasons to remain cautiously optimistic about the future of U.S. citrus: there was a notable spike in juice sales which, according to Citrus Industry News, suggests that the American public still values orange juice for its health benefits; there was continued slowdown of acreage loss rates due to greening thanks to comprehensive greening management strategies; and plant pathologists at University of California, Riverside have discovered a peptide in finger limes that may eventually lead to future treatments or even a cure for citrus greening.

# Tree Nuts Outlook

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## Record High Almond, Walnut, and Hazelnut Production Forecast

The 2020/21 season is underway for many tree crops with record-high supplies of almond, walnut, and hazelnut crops expected. In the previous season (2019/20) lower production, overall lower U.S. imports, and an increase in demand generally increased grower prices (Table 5). COVID-19 and high tariffs reduced overall U.S. exports. The marketable quantity of all U.S. tree nuts, led by almonds, was estimated at 3.6 billion pounds (shelled basis) in 2019/20, up 4 percent from the previous season. Smoke from the recent wildfires in California and Oregon affected the air quality but it's still uncertain the impact on the tree nut crop.

**Almond crop expected to be another record high in 2020/21:** The 2019/20 (August-July) almond season saw a record-setting domestic crop, and fairly strong demand (Table 5). Consumption likely increased as many stocked up during the COVID-19 shutdown. U.S. exports increased 6 percent from the previous season. Despite port issues and high tariffs, exports to India and China increased. Exports to Germany also increased. According to the 2020 California Almond Objective Measurement Report released by NASS on July 7, another record-setting 3-billion-pound crop (shelled basis) is forecast for the 2020/21 season, up 18 percent from 2019/20. Bearing acreage rose to 1.26 million acres in 2020. California experienced good growing conditions with dry, hot weather in May and June in the final stages of production. The forecast larger crop, and high stocks carried over from last season, are expected to increase supplies in the domestic market and likely will put downward pressure on 2020/21 grower prices.

**Walnut production forecast to increase in 2020/21:** In the 2019/20 (September to August) season, lower production and higher imports led to increased domestic consumption and reduced ending stocks (Table 5, reported on shelled basis). Tariffs in China, COVID-19 port issues, and lower U.S. supplies, reduced U.S. walnut exports from the previous season. The *2020 California Walnut Objective Measurement Report*, released by NASS on August 28, forecast walnut production for the 2020/21 season at a record 1.56 billion pounds (or 780,000 tons), in-shell basis, up 19 percent from last year. This forecast is based on 380,000 bearing acres, up 4 percent, and average nut per tree of 1,197, up 22 percent from last year.

**Hazelnut production soars in 2020/21:** Oregon's 2020 hazelnut crop is forecast to be 61 percent larger than the 2019 crop which was an "off-year" cycle in the alternate bearing tendency of hazelnut trees. A smaller crop, low carryover stocks in 2019/20 (July-June) and smaller imports in 2019/20 put upward pressure on grower prices this season. The large 2020/21 season crop could put downward pressure on grower prices.

**Low U.S. pistachio exports in 2019/20:** In the 2019/20 season (September-August) U.S. production dropped 27 percent due to lower yields in an off-year. U.S. exports dropped 33 percent with large decreases to key markets Hong Kong, India, and Turkey through July, compared to a year ago. High tariffs affected U.S. exports prior to COVID-19 port closures. Iran and the United States are the top suppliers of pistachios. Iran's exports are expected to increase while U.S. supplies are down. High beginning stocks and low exports likely put downward pressure on grower prices.

**Lower U.S. pecan consumption in 2019/20:** Domestic pecan production was up 11 percent in 2019/20 (October-September) and in-shell pecans in storage also went up. Imports were down from top U.S. supplier Mexico after a record setting year in 2018/19. High year-to-date exports to China, Thailand, and South Korea likely decreased U.S. consumption and drove up 2019/20 grower prices from the previous season. The rise in prices in 2019/20 drove the crop value to \$471 million, up 12 percent from the previous season. NASS will release the initial U.S. pecan production forecast for the 2020/21 season in its October 2020 *Crop Production* report.

**Macadamia nut production is up:** In the 2019/20 (July-June) season, Hawaii's bearing acres remained unchanged, yield per acre increased 320 pounds, and production increased 15 percent from the previous season. Exports increased 21 percent from last year. The export volumes were up to Japan and Canada, top macadamia export markets. Imports, mainly from South Africa and Australia, slightly decreased. Domestic consumption and grower prices remained steady from the previous year.

Table 5--Tree nuts: Supply, utilization, and grower price in the United States, by commodity and marketing year, 2015/16-2019/20

Season <sup>1</sup>	Loss		Marketable production <sup>3</sup>	Imports	Beginning stocks	Total supply	Ending stocks	Exports	Utilization		Season-average grower price
	Utilized production	and exempt <sup>2</sup>							Domestic	Per capita	
-----1,000 pounds (shelled basis)-----											
											\$/lb
<b>Almonds</b>											
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	3.13
2016/17	2,140,000	46,984	2,093,016	26,585	412,001	2,505,017	398,677	1,436,349	669,991	2.07	2.39
2017/18	2,270,000	54,734	2,215,266	32,523	398,677	2,646,466	359,013	1,534,858	752,596	2.31	2.53
2018/19	2,280,000	55,821	2,224,179	32,284	359,013	2,615,476	318,319	1,524,404	772,754	2.36	2.50
2019/20 P	2,550,000	49,809	2,500,191	26,321	318,319	2,844,831	450,122	1,611,814	782,894	2.38	2.43
<b>Hazelnuts</b>											
2015/16	23,312	551	22,761	9,224	1,289	33,274	211	19,298	13,765	0.04	1.40
2016/17	35,106	741	34,365	11,508	211	46,084	3,106	25,372	17,605	0.05	1.35
2017/18	25,600	85	25,515	13,775	3,106	42,396	1,401	20,039	20,956	0.06	1.15
2018/19	40,800	261	40,539	16,764	1,401	58,704	6,524	20,622	31,557	0.10	0.90
2019/20 P	35,200	278	34,922	13,522	6,524	54,968	3,724	21,852	29,392	0.09	0.96
<b>Pecans</b>											
2015/16	104,513	-	104,513	113,712	54,323	272,548	55,633	79,731	137,184	0.43	2.20
2016/17	127,935	-	127,935	132,637	55,633	316,205	69,489	103,655	143,062	0.44	2.59
2017/18	141,146	-	141,146	137,100	69,489	347,734	80,081	113,472	154,182	0.47	2.33
2018/19	104,460	-	104,460	166,009	80,081	350,550	88,053	93,956	168,540	0.51	1.75
2019/20 P	115,787	-	115,787	98,483	88,053	302,323	87,020	117,877	97,426	0.30	1.84
<b>Walnuts</b>											
2015/16	526,957	870	526,087	10,782	73,992	610,861	56,571	427,263	127,026	0.39	0.84
2016/17	608,431	883	607,548	15,731	56,571	679,850	49,372	446,957	183,521	0.57	0.93
2017/18	557,143	884	556,259	12,740	49,372	618,370	56,046	399,256	163,068	0.50	1.25
2018/19	596,725	883	595,842	13,259	56,046	665,147	58,500	418,813	187,834	0.57	0.68
2019/20 P	574,640	880	573,760	14,188	58,500	646,448	49,000	386,000	211,448	0.64	0.99
<b>Macadamias</b>											
2015/16			21,352	25,262	na	46,615	na	10,841	35,774	0.11	0.97
2016/17			19,081	17,478	na	36,558	na	13,327	23,231	0.07	1.00
2017/18			22,261	21,145	na	43,406	na	9,978	33,428	0.10	1.10
2018/19			16,037	28,076	na	44,113	na	7,325	36,788	0.11	1.19
2019/20 P			18,490	25,325	na	43,815	na	8,883	34,933	0.11	1.20
<b>Pistachios</b>											
2015/16	134,593	-	134,593	1,151	79,032	214,776	51,133	90,456	73,188	0.23	3.29
2016/17	446,299	-	446,299	1,363	51,133	498,795	126,769	231,847	140,179	0.43	1.68
2017/18	226,915	-	226,915	1,585	126,769	355,269	39,548	179,090	136,631	0.42	1.69
2018/19	487,457	-	487,457	1,284	39,548	528,289	65,247	303,577	159,465	0.49	2.65
2019/20 P	356,889	-	356,889	1,514	65,247	423,389	39,148	203,862	180,639	0.55	2.62
<b>Other nuts</b>											
2015/16	-	-	-	476,174	-	476,174	-	135,298	340,877	1.06	-
2016/17	-	-	-	491,927	-	491,927	-	124,291	367,637	1.13	-
2017/18	-	-	-	519,970	-	519,970	-	138,514	381,456	1.17	-
2018/19	-	-	-	473,201	-	473,201	-	117,688	355,512	1.08	-
2019/20 P	-	-	-	526,605	-	526,605	-	106,244	420,361	1.28	-
<b>Total</b>											
2015/16	2,710,727	44,915	2,665,812	668,081	585,250	3,919,144	575,549	2,035,232	1,308,364	4.06	-
2016/17	3,376,852	48,609	3,328,244	697,229	575,549	4,601,024	647,413	2,381,797	1,571,811	4.85	-
2017/18	3,243,064	55,704	3,187,361	738,837	647,413	4,573,611	536,089	2,395,207	1,642,316	5.04	-
2018/19	3,525,479	56,964	3,468,514	730,896	536,089	4,735,499	536,643	2,486,408	1,712,448	5.22	-
2019/20 P	3,651,005	50,967	3,600,038	705,959	536,643	4,842,640	641,476	2,456,533	1,744,632	5.30	-

P = Preliminary. <sup>1</sup> Season begins in July for hazelnuts, macadamias, and other tree nuts (includes Brazil, pignolias, chestnuts, cashews, and mixed nuts); August for almonds; September for pistachios and walnuts, and October for pecans. <sup>2</sup> Utilized production minus marketable production, which includes inedibles and noncommercial usage. <sup>3</sup> Marketable production is used to calculate consumption.  
Source: USDA, Economic Research Service calculations.

# Special Article

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## **The Initial Impact of COVID-19 on the Fruit Industry: Apples, Table Grapes, and Strawberries, March-June 2020<sup>1</sup>**

Jaclyn Kramer and Linda Calvin

This paper looks at the initial impact of COVID-19 (March-June) on three commodities: apples, table grapes, and strawberries for the fresh market. The USDA National Agricultural Statistics Service (NASS) Noncitrus Fruit and Nuts 2019 Summary released in May 2020 reported the total noncitrus crop value was \$15.4 billion in 2019. The top three crops, apples, strawberries, and grapes (including table, raisin, and wine grapes), accounted for 71 percent of the total value. Beginning in March 2020, the produce industry faced many shocks. The pandemic led to both supply and demand issues.

By the time stay-at-home orders were put in place in March in the United States, most of the decisions about production for 2020 had been made. Apples and table grapes are perennials and the acreage is fixed, although supply may be affected by weather, labor availability, consumer demand, prices, and management decisions. Strawberries, an annual crop, were planted last fall for winter, spring, and summer harvest. This summer, California growers will plant for the fall season and there could be changes in plans in response to the COVID-19 situation at that point. Similarly, Florida strawberry growers could make changes for their upcoming season. Each of these crops is hand harvested which makes the industries very dependent on the availability and the continued good health of their workers, which is now uncertain. Costs have increased as firms provide more personal protective equipment to workers. In some cases, firms stagger worker schedules to improve social distancing, which can also raise costs. Imports are also an important part of the supply available to consumers in the United States. Because perishable table grapes and strawberries have large imports to supply the market in the off-season or low-production periods, those shipments are also considered. In this case, which suppliers are hit hardest depends on when they harvest. Apples are storable allowing for more domestic year-round availability. While all three crops have processing options, usually a drastic alternative when the demand in the fresh market is down (grower

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<sup>1</sup> The report relies on information available at the end of June 2020.

returns for processing are a fraction of fresh receipts), a shift to the processed market did not occur through early summer.

Consumer demand is also uncertain. The global pandemic increased consumption at home and decreased food consumed at foodservice venues. On average, fruit is one of the commodity groups with a higher percent of product consumed at home (as opposed to foodservice venues) and has been less affected by the stay-at-home order than other commodity groups. According to Consumer Diets Surveys, on average 84 percent of fruit was consumed at home from 2013-16. At-home food is sourced mainly from grocery stores, although during the pandemic the demand for on-line food services has grown. Information Resources Inc. scanner data shows a spike of sales for fresh fruit in mid-March 2020 of roughly 28 percent compared with 2019, as many consumers stocked up in preparation for the quarantine. After that, the average number of consumer trips to the grocery stores from April to early June 2020 declined compared to the same time period in 2019.

## **Apples**

The United States is one of the largest producers and consumers of apples. Total U.S. utilized production in 2019/20 season (August-July) was 53 million tons with 70 percent destined for the fresh market. In the 2018/19 season imports accounted for about 4 percent of total supply (domestic production and imports) and exports accounted for 23 percent of supply. Exports are a critical component of industry health, but export growth has slowed over the last few years, in part due to retaliatory tariffs in China and India. Washington is the largest producer for the fresh market and in May 2020 USDA NASS estimated 79 percent of its utilized production going to the fresh market in 2019/20. The rest of this discussion focusses on the Washington industry.

Apples are harvested in the fall; those that are not sold immediately are stored in packinghouses. Over the following year packinghouses take apples out of storage, run them through a packing line, and ship the apples to buyers. Since apples are picked by hand, the fall harvest requires a huge labor force. Field workers are used for the rest of the year in smaller numbers for pruning and other between-harvest production tasks. The packinghouse operations require a much smaller labor force employed throughout the year.

As of June 2020, on the supply side, COVID-19 has primarily affected packinghouses. On June 14, Northwest Public Radio reported that Yakima County, Washington, had the most COVID-19 cases per capita of West Coast counties and that the main hot spots were long-term care

facilities and agriculture. Yakima is part of the important apple production area in Washington. Other commodity industries could look at the COVID-19 situation in Yakima with concern. In May 2020 workers mounted short strikes in several Yakima-area packinghouses over demands for more protective equipment. The strikes were resolved. The governor of Washington issued an emergency executive order in response to COVID-19 that requires new safety precautions in both packinghouses and orchards. Costs increased with provision of protective equipment and spacing workers to social distance, which slows down the packing lines.

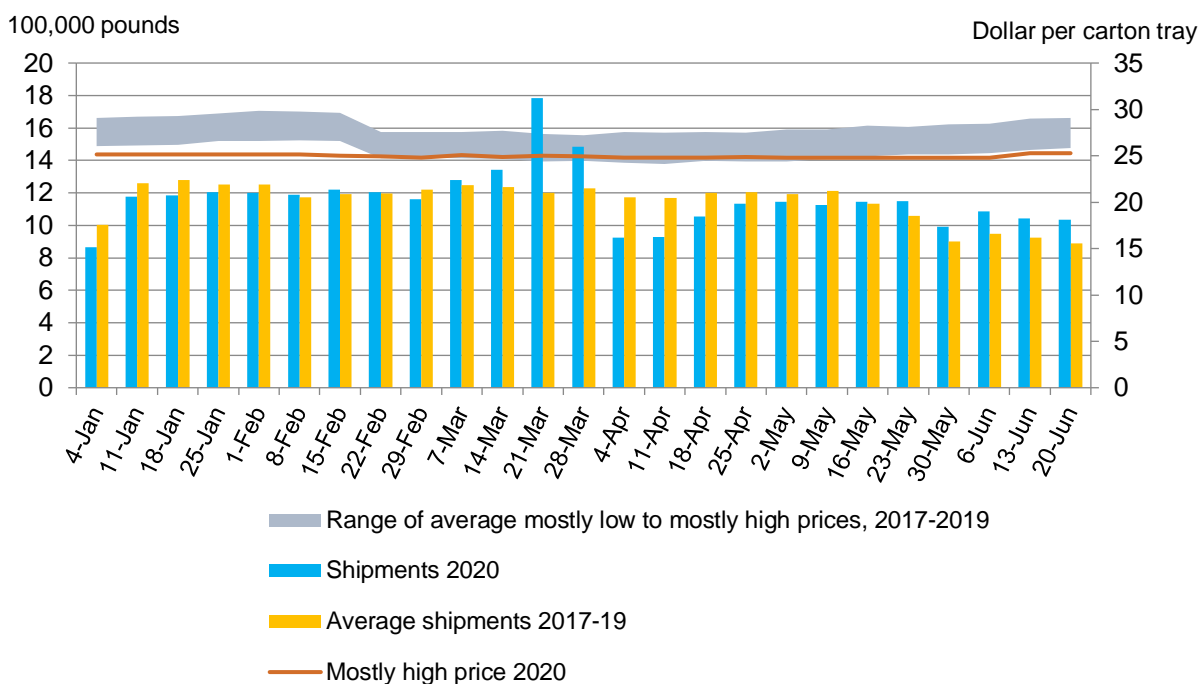
Apples are storable and a short slow-down of packing would not have much of an impact on the apple supply (although it would be a problem for marketing). A small harvest labor force, due to fewer numbers of workers to start with or a large number of ill workers in the fall when there is limited time to harvest the crop, would greatly affect the supply of apples next season. In the past the apple industry struggled to get the 60,000-70,000 workers needed to harvest the crop. Growers who did not have enough labor were forced to make tough choices about which apples to harvest. This decision is a function of relative varietal supplies and prices, domestic and international market conditions, and labor costs. This year the pandemic has further highlighted the usual uncertainty about labor availability.

The Washington apple industry uses a lot of H2-A labor, which requires providing housing and transportation to the workplace for workers hired under this program. In practice, housing provided by employers for their H-2A workers is usually collective, with multiple workers sharing a living space. Although housing accommodations must conform to program rules and local occupancy rates, social distancing recommendations in light of COVID-19 may render such accommodations inadequate. Given the time frame, it wasn't possible to build enough new housing to provide social distancing during the pandemic. In addition, after the pandemic, additional housing might not be needed. Busing people to work posed another challenge. It would be difficult to get enough buses and licensed drivers to take workers to the orchards if workers were spread six feet apart. Washington State made an emergency rule for all temporary worker housing licensed by the State or provided by employers to cope with the COVID-19 situation, including H2-A housing. The rule called for the following: workers will socially isolate together in small groups they will live, eat, travel in buses, and work in the orchards as a group. If one person in a small group gets sick it reduces the chance of a larger group of workers getting sick. Growers must schedule buses to make multiple trips to bring the workers to the orchards.

Using H-2A labor comes with many restrictions so it is not very flexible once the workers are in place. For example, if a grower decides to stop harvesting, the worker is entitled to collect pay for three quarters of the contracted period. Some growers may be reducing H-2A labor in 2020 because of the inflexibility in the face of a very uncertain season, therefore, accepting a potentially smaller harvest.

There have also been changes on the demand side of the industry. In a period of concern about COVID-19, consumers stocked up immediately with relatively nonperishable apples. Eighty-eight percent of apples are consumed at home. Figure 1 shows that Washington shipments began to increase above the previous three-year average shipment levels in the week ending March 14, peaked in the next week, and then declined below the average level in the week ending April 4, perhaps because consumers had already stocked up. Shipments did not exceed the average of the previous three years again until the week ending May 16 and have remained slightly above since.

**Figure 1**  
Washington State apple shipments and prices, 2020 and 2017-19 average

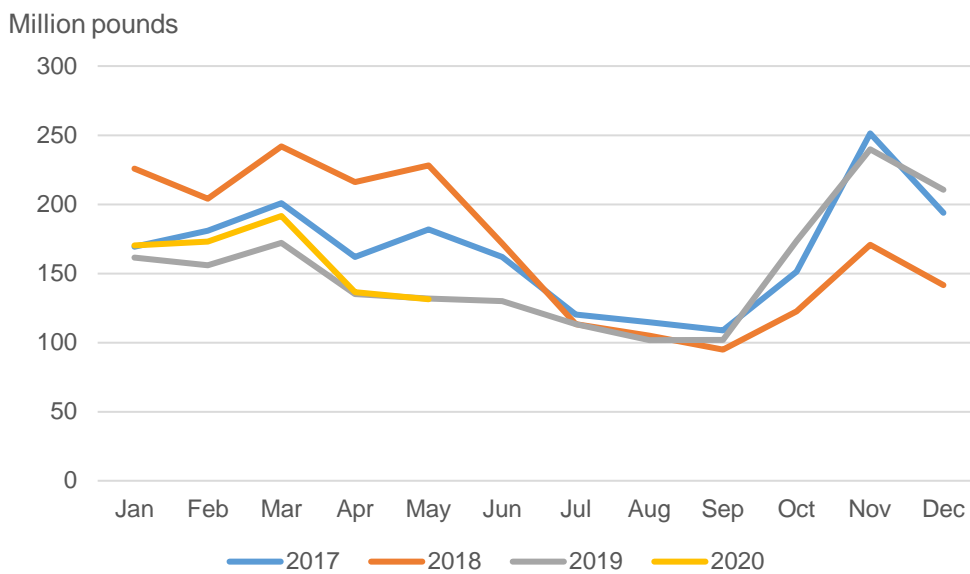


Note: The decline in average prices in February is due to Honeycrisp (a more expensive apple) shipments ending early in 2017.  
Source: USDA, Agricultural Marketing Service, *Market News*.



Sales of whole apples to the food service industry is a small share of the industry, so the impact of these apples returning to the general pool of apples for sale did not cause much disruption. Apples that are sliced and put into small bags for schools and quick service restaurants (QSR) likely had a decline in demand as schools and in-restaurant dining ceased. Most QSRs, however, kept their take-out operations going. Any apples that were initially slated to go into the sliced snack apple industry could be put back into the supply of apples available as whole fruit. At the same time, export markets demand has slowed. Washington apples transported by sea-going vessels take three to six weeks to arrive, depending on the destination. Apples shipped just prior to the pandemic might have arrived in ports that were locked down without workers to unload, provide cold storage, and transport products to wholesale markets that might also be closed. In January-March 2020, export quantities were up year-to-date from 2019, but fell to about 2019 levels in April and May (fig. 2). April exports were down about 20 percent from the three-year average and May exports were down 27 percent, with declines of 17 percent in exports to Mexico and 27 percent to India. In May 2019 these two markets accounted for 43 and 8 percent of total U.S. apple exports. India experienced port infrastructure issues and weaker market demand due to stay-at-home orders. Overall import volumes at the top 12 ports in India were down 20 percent in April to June compared to the same time last year.

Figure 2  
U.S. monthly apple exports



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

The 2019/20 season apple harvest was up 8 percent from the previous year and cold storage stocks are large, which helps explain why prices in 2020 are below or very close to the 3-year average mostly low price based on USDA Agricultural Marketing Service (AMS) shipping point prices.<sup>2</sup> The U.S. Apple Commission reported June 2020 fresh apple holdings were 34.1 million bushels, up 23 percent from June 2019 and 26 percent greater than the five-year average of 27 million bushels. Total processed apple holdings were 13.8 million bushels, 28 percent greater than June 2019 and 25 percent greater than the five-year average. The U.S. Apple Commission reported total holdings of 47.9 million bushels of fresh and processing apples. That is equivalent to an unprecedented 19 percent of the 2019/20 crop, up 24 percent compared to June 2019.

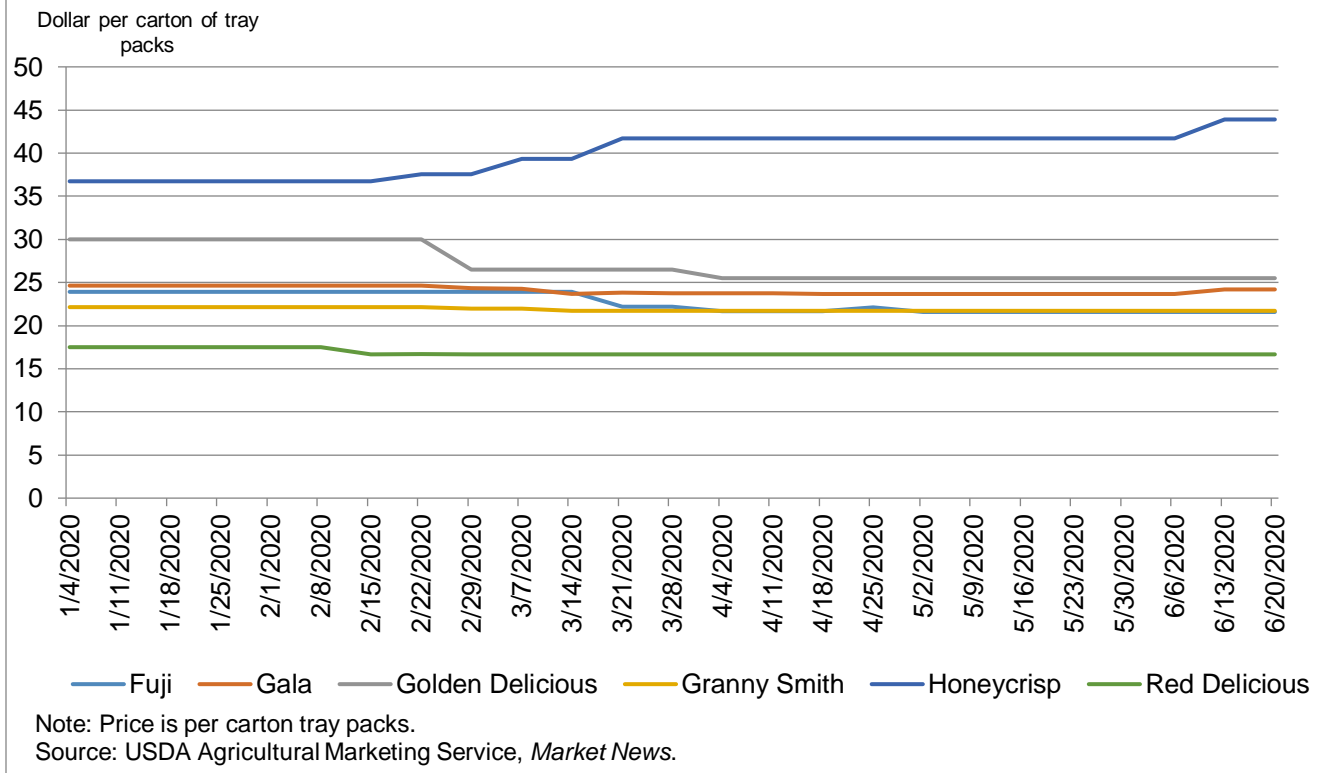
Apple prices are generally stable over time compared to other fruit. Once the harvest is in, shippers know the supply for the next year and price accordingly. Shippers do not have to respond to day-to-day fluctuations in supply and price as is the case for strawberry growers, for example. Average apple prices were fairly even during the first few months of the outbreak with a tiny increase in the first two weeks of June. Apple prices by variety show increases in the price of Honeycrisp apples (fig. 3). Between the week ending March 7 and June 20, 2020, Honeycrisp prices went up 12 percent as the seasonal supply was ending, Red Delicious did not change, Gala prices decreased by less than 1 percent, Granny Smith declined 1 percent, Golden Delicious declined 4 percent, and Fuji declined 10 percent.

With large stocks of apples that need to be sold before the harvest that begins in August, growers are anxious to sell as many apples as possible. The industry reports that consumers have increased demand for bags of apples over individual apples, perhaps because of the desire to speed up the shopping experience or concern about other consumers handling individual apples before they do. Some shippers have put more apples in bags, but this format typically sells at a discount to the same weight of individual apples. Many retailers also introduced changes in how they stock apples. With fewer workers in stores, some retailers want to simplify operations and have only a certain number of stock-keeping units, which means a lot of the newer varieties with lower volume might not be included in their smaller selection of varieties.

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<sup>2</sup> USDA AMS estimates the mostly low price as a price that represents at least 50 percent of the sales in the market and does not include the absolute lowest or highest price. The mostly high price is defined similarly.

**Figure 3**  
Washington State weekly apple prices by variety, 2020

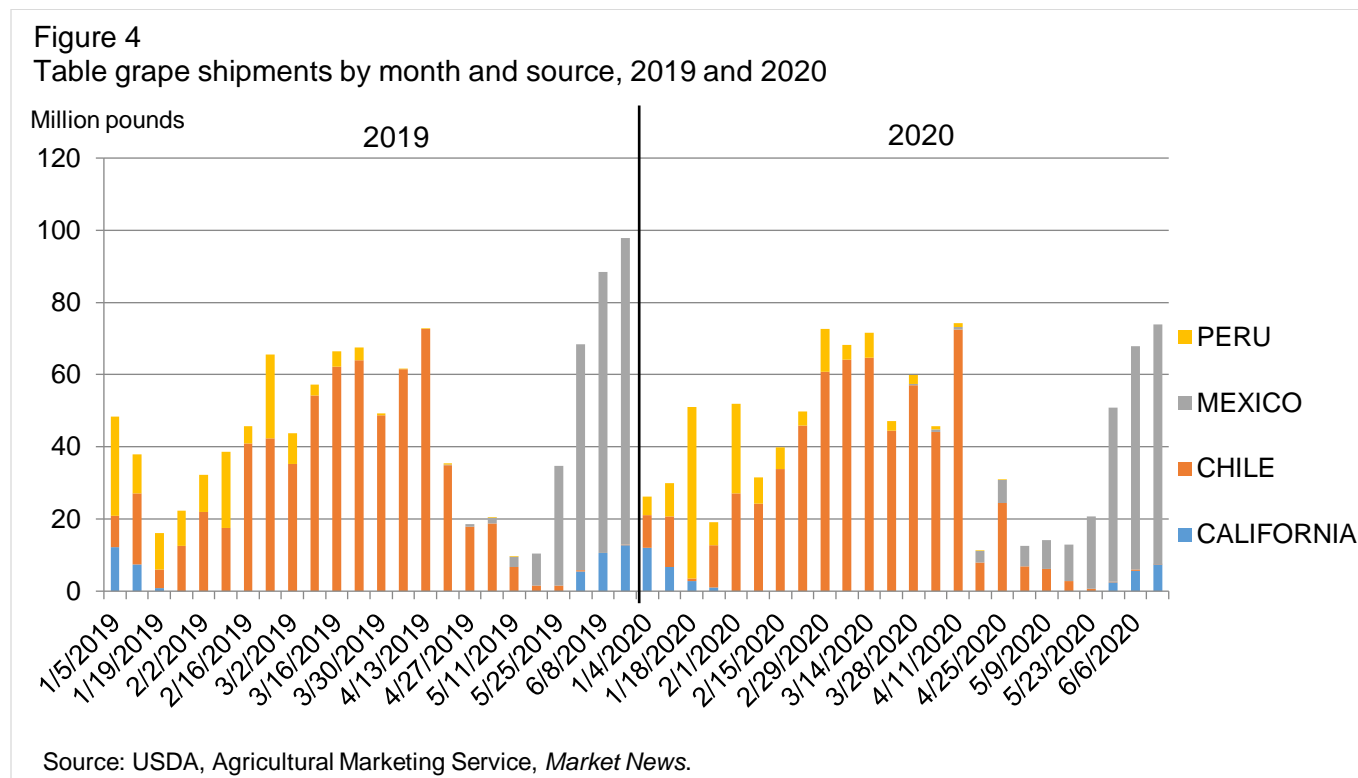


### Table Grapes

Fresh utilized table grape production in 2019 was 2 billion pounds. Total per capita consumption of fresh grapes in 2019 was 8.4 pounds, up from 8.1 pounds in 2018. The California table grape marketing year begins in May with most grapes sold by the following January. Grapes are a perennial crop that only produce once a year and harvested table grapes have a limited storage life, so the United States imports to provide grapes on a year-round basis. In the 2019/20 season, imported grapes accounted for 43 percent of total supply (domestic and imported), up 17 percent from the previous season. The top three sources of imported grapes, which accounted for 98 percent of imports in that season, were Chile (41.5 percent), Mexico (32.2 percent), and Peru (24.4 percent). U.S. exports accounted for 21 percent of total supply. Imports and exports are essential to the grape industry.

In March 2020, no U.S. table grapes were in the market, therefore the COVID-19 outbreak had no immediate impact on U.S. production or sales (fig. 4). In the global commodity industry, however, many grower/shippers who grow in California also import from other countries during

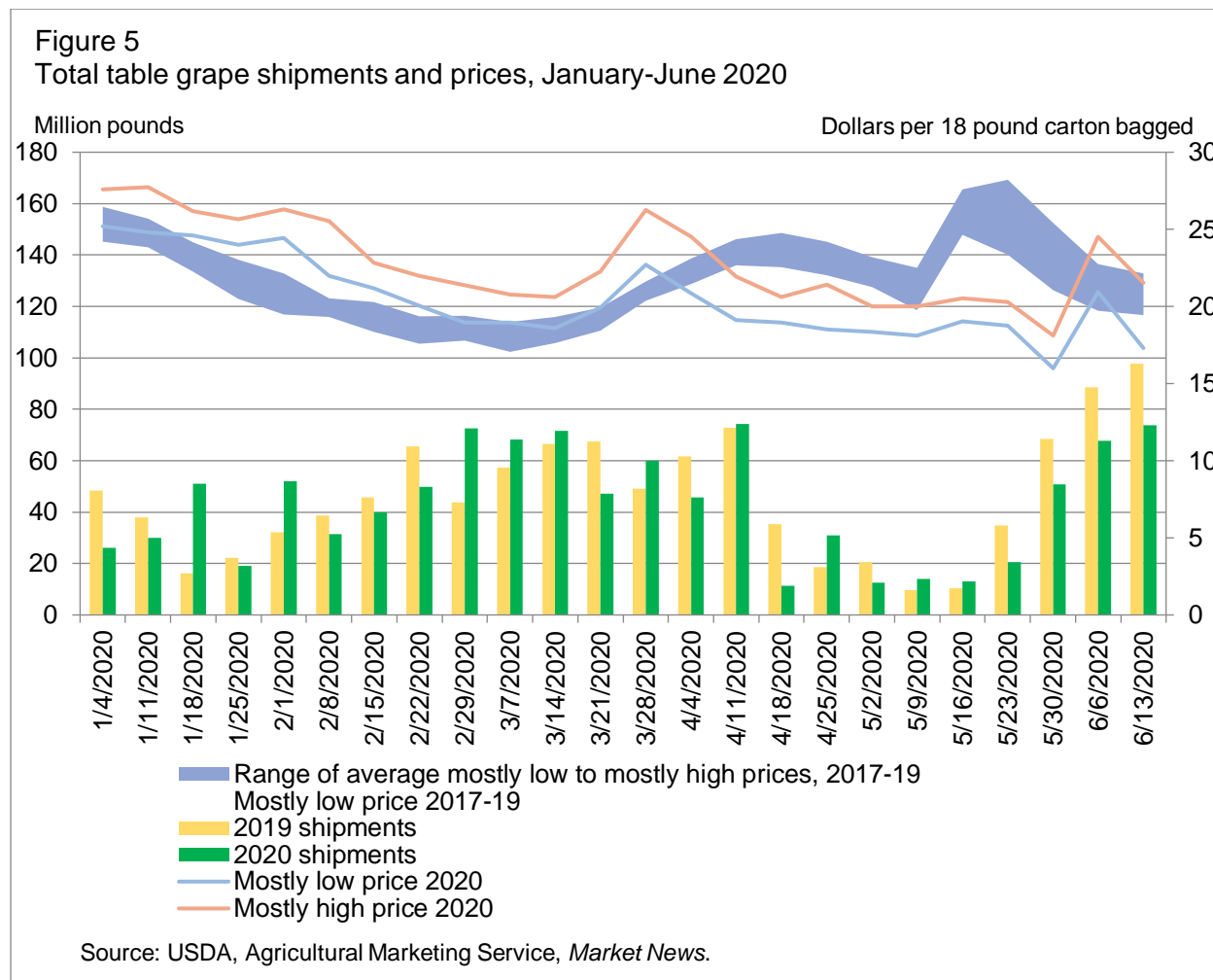
the off season and these shipments would have been affected by adverse market conditions linked to the pandemic. In March, Peru had already finished the bulk of exports to the United States, so was largely unaffected by any change in demand. Mexico's and California's main seasons had not begun. Chile was the main supplier of fresh table grapes to the U.S. market in mid-March when concerns about COVID-19 began.



Chilean shipments in April were only 84 percent of the previous year, but several importers said that was due to lower production in Chile, not fears about the pandemic. While Chilean shipments continued, grapes piled up at U.S. warehouses, and prices fell with declining demand and declining quality.<sup>3</sup> Figure 5 shows weekly shipments from all sources and for all types of grapes for 2019 and 2020; the average shipping point prices for all grapes for the period January through early June for 2020; and the three-year averages of mostly low and mostly high prices for 2017-19. For the week ending March 28, the mostly high price was \$26.25 per 18pound carton, bagged, compared to the three-year price average of \$21.63. After that the

<sup>3</sup> Researchers often use the terms shipments and imports interchangeably and for most perishable produce items the terms are about equivalent but not always for grapes. Most Chilean growers want to get their grapes to the United States before April 10, when a table grape marketing order goes into effect which requires inspections to meet U.S. table grape standards. So, there is a large peak in early April as imports surge, which are recorded by USDA Agricultural Marketing Service as shipments, although the grapes may not leave the warehouse to go to buyers until later.

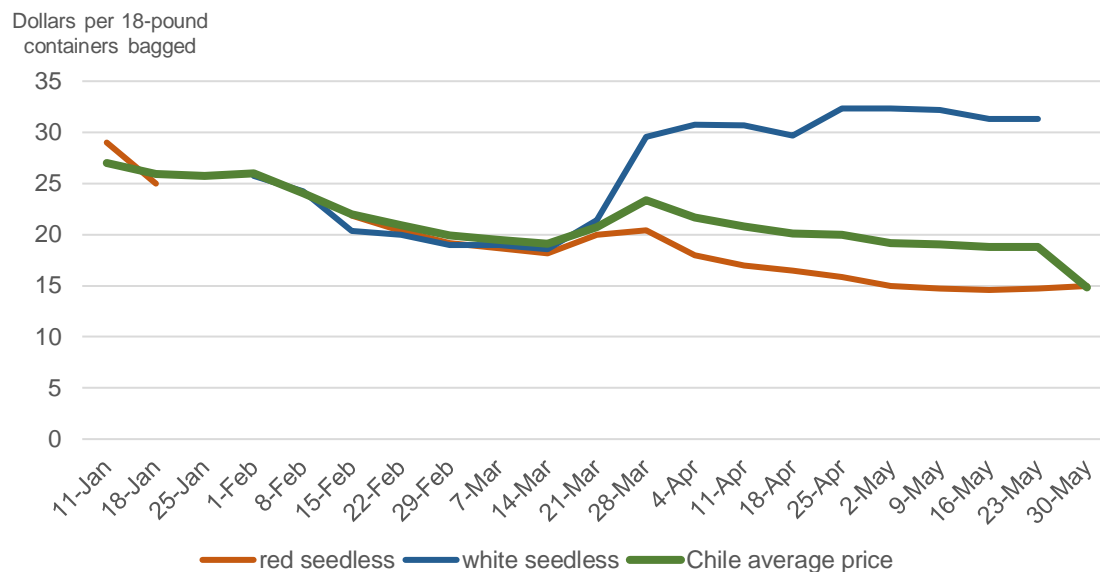
2020 prices began to fall through the week ending May 30, considerably below the three-year average for most of that time. Average prices don't necessarily indicate what is happening to individual grape varieties. Figure 6 shows prices for Chilean grapes by variety. While foodservice is estimated to account for only about 5 percent of the U.S. fresh grape market, the foodservice industry favors red seedless grapes, so with the closure of restaurants, schools, and other foodservice venues, demand and prices for red seedless grapes fell below the Chilean average price for all varieties in 2020. The average price for white seedless grapes increased above the Chilean average price since that variety was in relatively short supply.



Mexican shipments were down this year but that was expected since early in the production year and not due to COVID-19 considerations. When imports from Mexico began, their prices for fresh table grapes were higher than those of Chilean grapes that had been in storage. As the Mexican season concluded, shippers thought the Mexican prices had been reasonable given the COVID-19 situation. One potential bottleneck for Mexican grapes entering the United States

that concerned importers was the mandatory USDA Agricultural Marketing Service inspection at the border. Some importers were concerned that if the inspection staff decreased in numbers due to illness, that the inspection process would slow down. Also, this year the Mexican tomato season ran longer, and tomatoes also have AMS inspections. This increased the inspector workload at a time when they usually have to concentrate only on grapes.

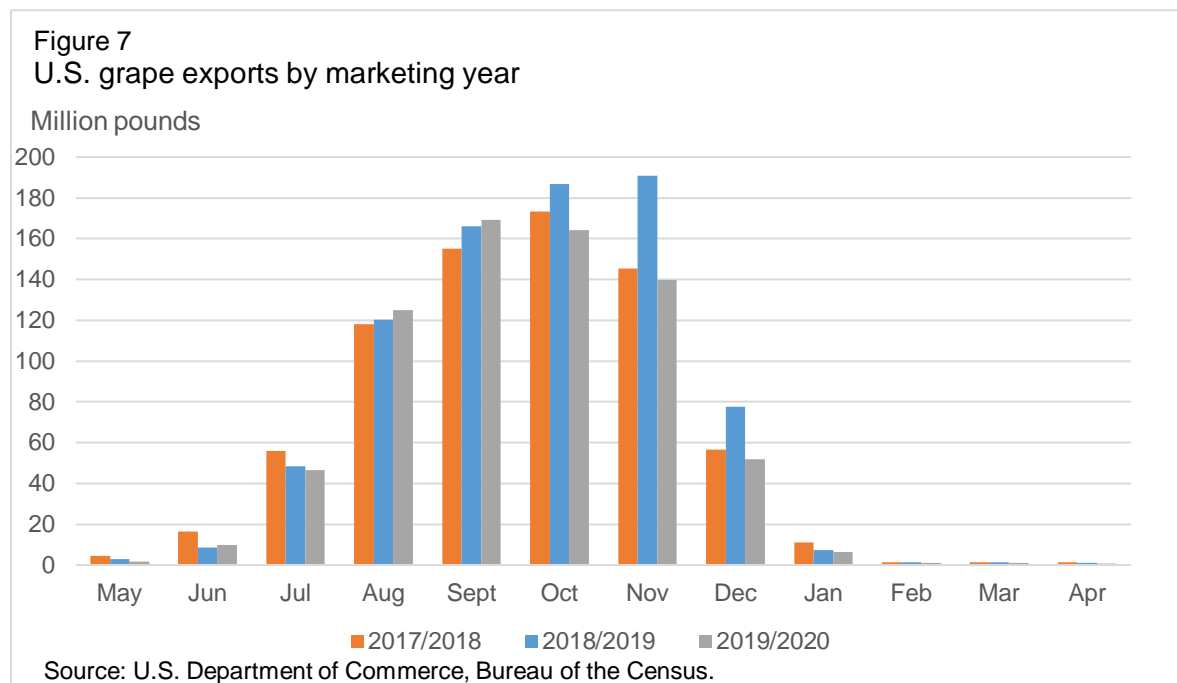
**Figure 6**  
Chile grape shipping point prices 2020 by variety through May 2020



Note: Chilean imports through port of entry Philadelphia and port of entry Los Angeles.  
Source: USDA, Agricultural Marketing Service, *Market News*.

The California table grape shipments were late this year, due to a cooler wet spring. USDA AMS data show the first California grapes began shipping the week ending May 30. Shipments were also a little low compared to the prior year because green grapes were maturing and gaining color slower, leading to a temporary spike in prices. The U.S. table grape industry is uncertain what to expect. It is a perennial crop so the supply at the beginning of the season is set at least in terms of acres of grapes (total harvested production depends on many factors). Table grapes are handpicked so the harvest will depend on the availability of labor. On most operations harvest workers pick grapes in one row, take the grapes to the end of a row, and deliver them to a mobile packing platform where one person cleans, separates, trims, and packs. Increased costs for harvesters would depend on the amount of extra protective equipment provided and slowing of operations to allow for social distancing. California grape growers generally do not rely on H2-A labor.

Demand for grapes has declined with on-line shopping. Consumers aren't as likely to buy grapes when they can't see the actual product. Also, consumers stocking up at the grocery store may have bought less perishable fruit. Shippers were initially concerned about how consumers would react to the usual retail packaging that features grapes in an unsealed bag with holes in the side for ventilation, instead of a closed bag which might be viewed as safer; however, packaging has not apparently affected demand. With COVID-19, sampling grapes in stores has disappeared, eliminating an important marketing tool in some markets. As a result of the changes due to COVID-19, the California Grape Commission changed its promotion strategy. A new focus is advertising through on-line food suppliers and providing incentives to retailers to merchandize and promote California grapes on their e-commerce platforms. The Commission launched new advertising campaigns focusing on snacking and health and removed discussion of grapes as part of entertaining gatherings of families and friends. As noted above, foodservice grape sales declined drastically, but only about 5 percent of grapes go to foodservice. If a firm specializes in sales to the foodservice market, however, it would face marketing challenges as it tried to find another buyer for the grapes no longer purchased by foodservice. As of late June, uncertainty surrounds the impact of COVID-19 on U.S. fresh grape exports. Exports are highest on average from July to December (fig. 7). Exports were lower in the 2019/20 season, mainly due to a tighter U.S. supply. USDA's Foreign Agricultural Service reported lower demand from Mexico this season. There have been reports of trade delays due to quarantine measures, port closures, and vessel delays in Taiwan.



## Strawberries

In the United States fresh-market strawberries are grown on a large commercial basis in California and Florida. California harvests some strawberries every month, but the vast majority is harvested during April-November. Florida is a winter-spring producer, shipping from mid-December to mid-May. Fresh-market strawberries are very perishable with extremely limited short-term storage options, so the United States imports strawberries from Mexico. Central Mexico ships strawberries to the United States from November to March. Baja California, Mexico, ships smaller amounts with most shipments in January through April. Mexico creates competition during the Florida season and the California production areas of Orange County and Oxnard. In 2018, California produced 74.2 percent of total fresh supply (domestic utilized supply plus imports), Florida produced 10.2 percent, and imports, virtually all from Mexico, accounted for 14.8 percent. The United States exported 13 percent of total fresh supply.

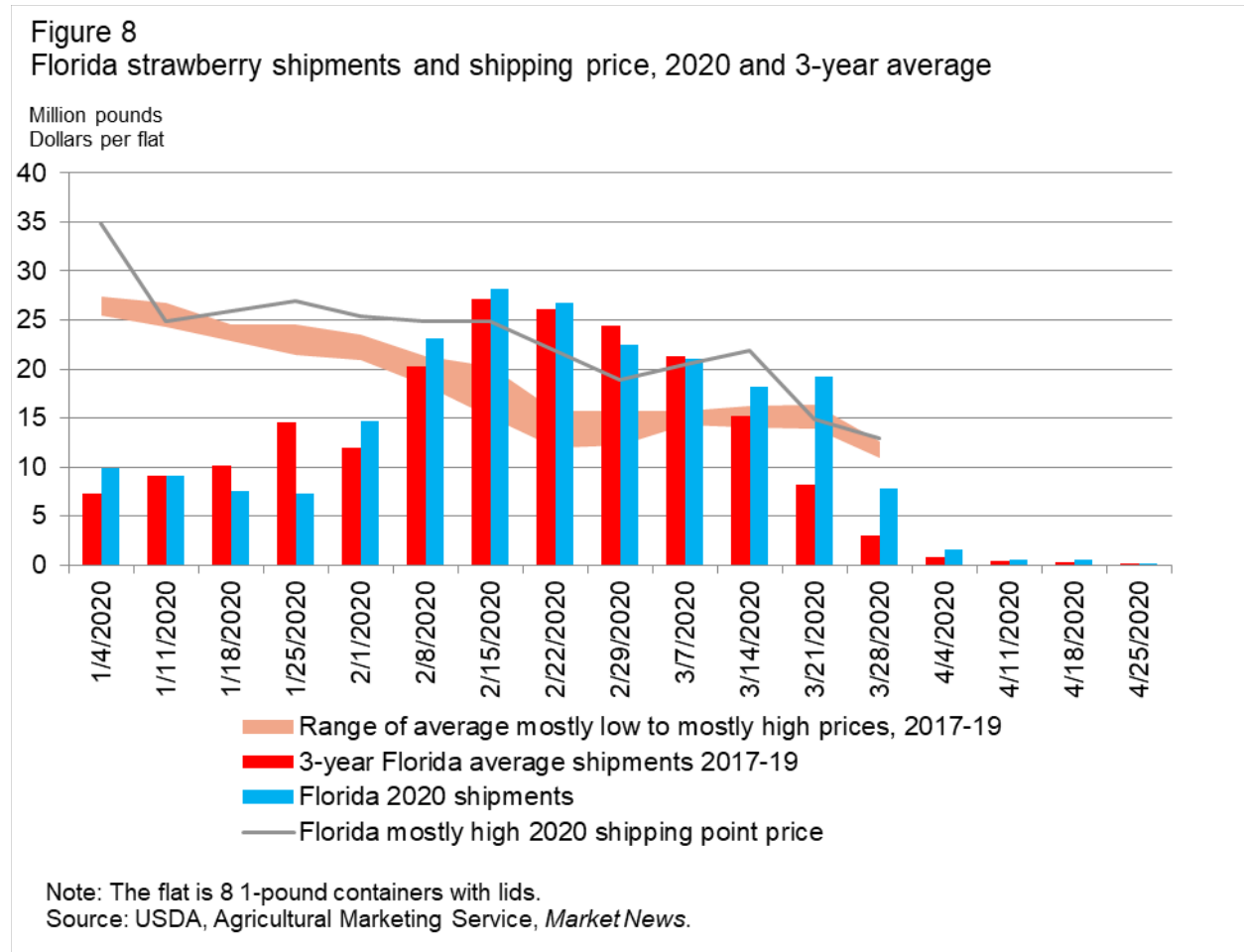
In mid-March (week ending March 14), California producers were harvesting berries in Oxnard and Santa Maria (Salinas/Watsonville, the biggest producing region wouldn't start until the week ending April 25). Florida and Mexico were also harvesting. Producers in California, Florida, and Mexico could have been affected by changes in supply or demand due to the pandemic.

The pandemic created potential problems for the supply side. Growers were more concerned than usual about labor availability due to potential worker illness. To address the labor health issue, the California Strawberry Commission put together a program to instruct owners and workers about the best practices to minimize the chance of infection. Fresh-market strawberries are hand harvested and field packed. Harvest workers proceed up a row of berries with a cart holding a cardboard box of clamshells. When the cartons are full, the workers take the berries to the end of the row where the boxes are checked, individual harvesters given credit for their work, and boxes are palletized. This consolidation point may be the most difficult place for workers to socially distance. Harvester workers can socially distance in the fields in most cases with adjustments to spacing of workers and schedules. More problematic might be the often cramped conditions in worker accommodations and in transportation to the fields where workers could become infected with the virus. California strawberry growers need to be concerned about labor availability over a very long season, unlike other crops that have a much more condensed harvesting season, such as cherries.

The Florida industry was near the end of their season when news about COVID-19 started to affect demand. Initially, there was a big run on everything as people flocked to grocery stores to stock up. Then consumers started to shop less frequently and many favored less perishable

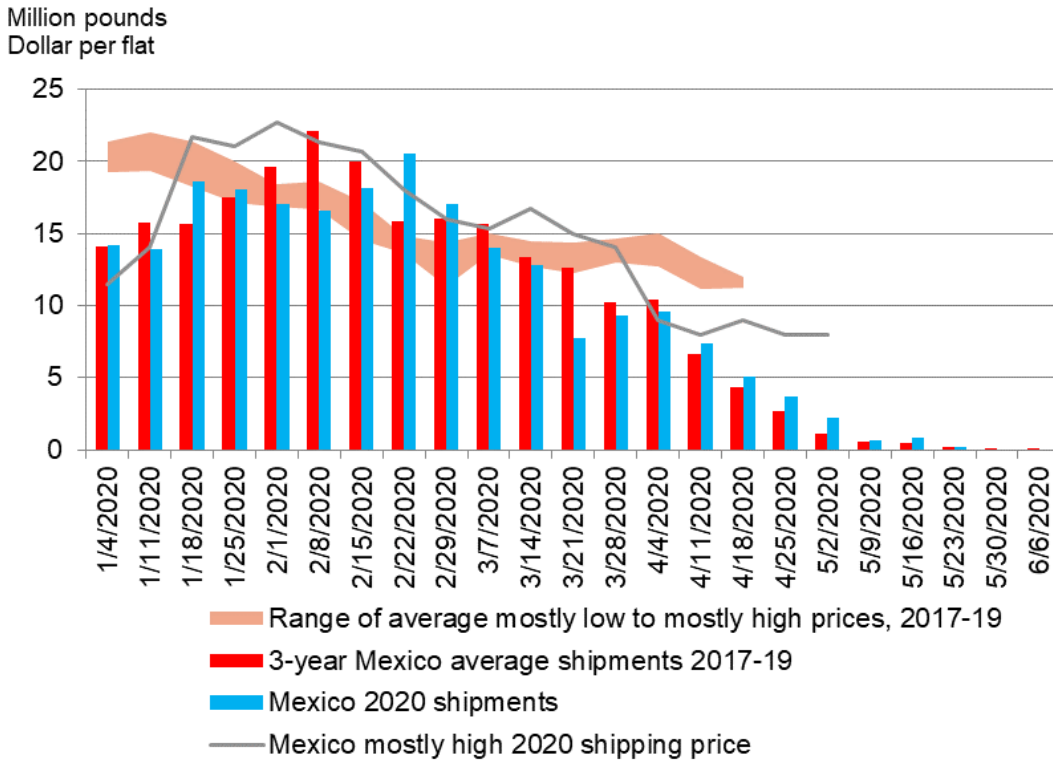


products than strawberries. Many shippers experienced cancelled orders. The season could have continued a little longer in “normal” conditions but with falling demand the Florida season concluded early. Florida 2020 shipments remained above the average of the previous three years for most of the season, except during the last part of January (fig. 8). The 2020 mostly high prices were above the three-year average price except for one week in January and at the end of March.



Like Florida, the Mexican strawberry export industry from Central Mexico was in the final stage of its season and experienced relatively little impact. Shipments in 2020 were generally above the average of the three previous years except in the week ending March 7 through the week ending April 4 (fig. 9). The mostly high prices remained above the three-year average until the week ending March 21, when they fell below the average.

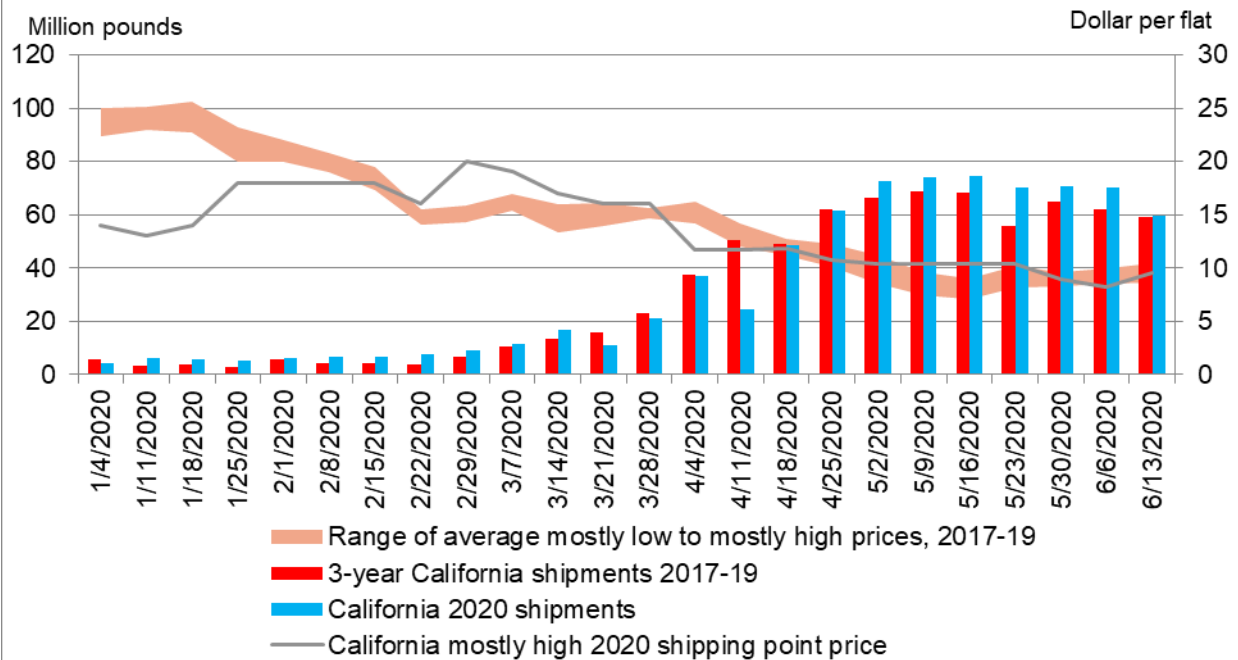
**Figure 9**  
**Mexico strawberry shipments and shipping price, 2020 and 3-year average**



Note: Flat 8 1-pound container with lid.  
 Source: USDA, Agricultural Marketing Service, *Market News*.

California 2020 shipments declined in early April but otherwise have generally been above the three-year average (fig. 10). California shipments through mid-June 2020 were above those of a year ago which had an unusual weather event (although below those of two years ago). Prices have been more variable. Since the week ending March 14, the mostly high 2020 prices were below the three-year average into early summer with the exception of the first three weeks of May.

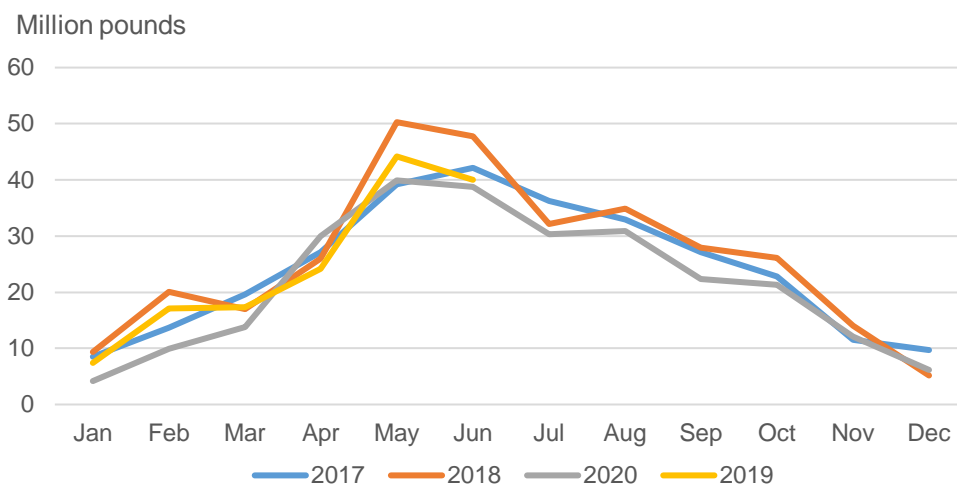
Figure 10  
California strawberry shipments and shipping price, 2020 and 3-year average



Note: Flat 8 1-pound container with lid.  
Source: USDA, Agricultural Marketing Service, *Market News*.

As with many produce items, consumer demand was difficult to anticipate. Strawberries are considered an impulse item so the industry was worried that consumers would focus more on staples like apples. With consumers shopping less there was concern that they would not buy relatively perishable strawberries. Also, with many people unemployed, strawberries may have been out of reach of some consumers with reduced income. Many spring events where berries are commonly consumed—Easter, Mother’s Day, graduations, Confirmations/First Communion, wedding showers, and weddings—would be very different events with social distancing, and demand might falter. About 15 percent of fresh-market strawberries go to the foodservice industry; growers who sold to that outlet had to suddenly find other markets for those berries. Demand, however, was fairly robust. With fear of the virus, consumer demand for foods perceived to be healthy might have contributed to this demand. Extra government contributions to unemployment checks and the one-time payment to taxpayers may have helped with demand. Other factors that could have contributed to fairly high sales for strawberries might have been the closed clamshell package, which may have given consumers more confidence in the safety of the product. Trade data through May show no obvious trend from a year ago (fig. 11).

Figure 11  
U.S. strawberry monthly exports



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

### Conclusions

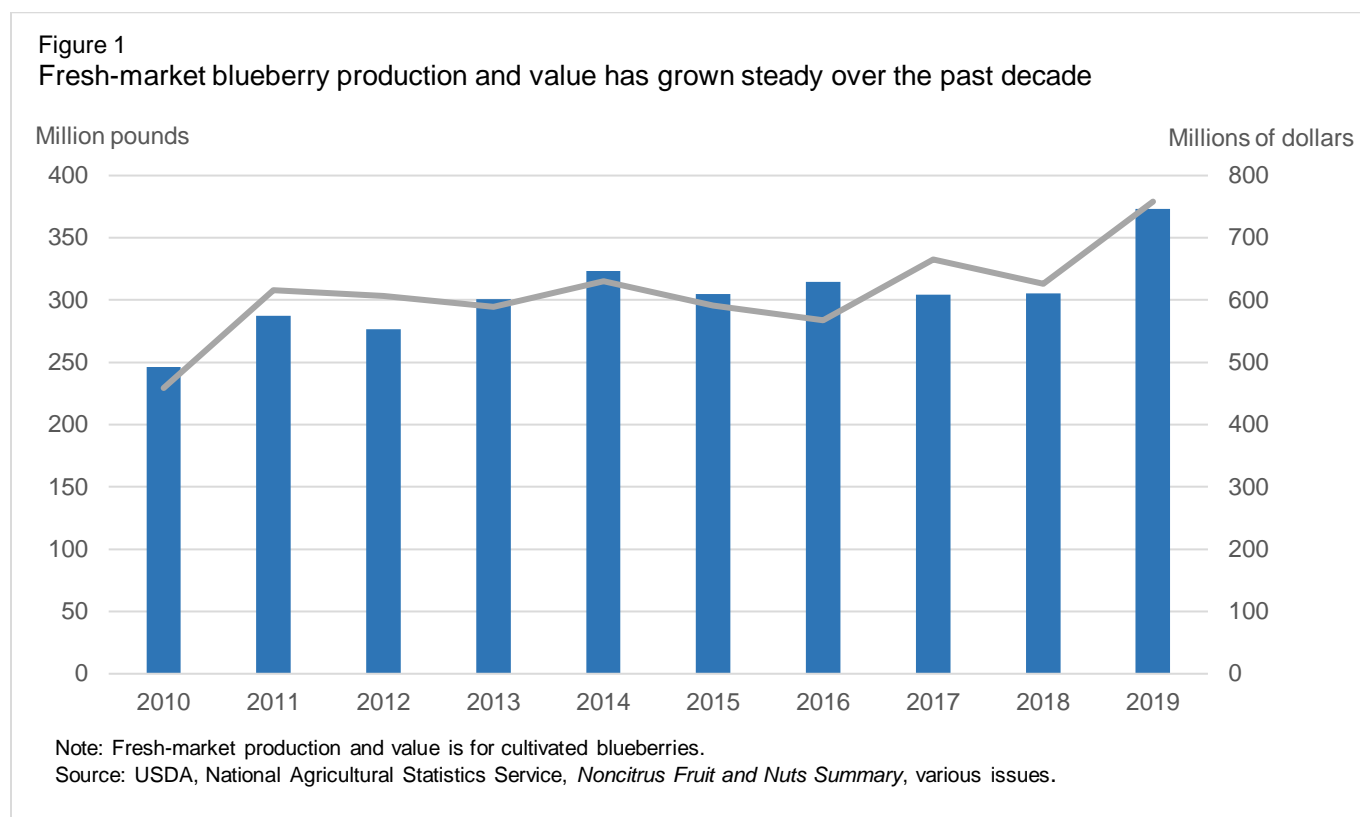
This report looks at the impact of COVID-19 from March through June 2020, using only the data available at the end of June. In the first few months of the pandemic there was still a lot of uncertainty about how supply and demand would be affected. The impact of COVID-19 is still evolving and future analysis will follow later developments.

# Special Article

## U.S. Market for Cultivated Fresh-Market Blueberries Over Time<sup>4</sup>

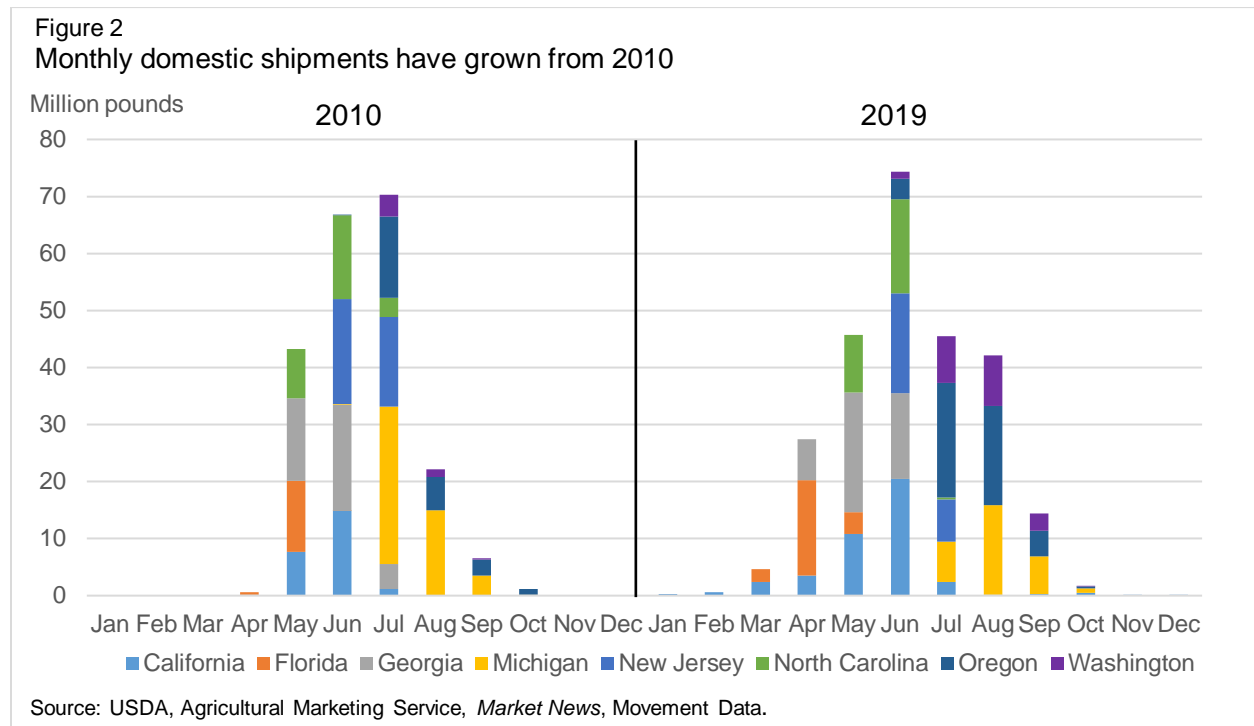
Jaclyn Kramer

Annual growth in fresh-market cultivated blueberry production averaged 5 percent over the past decade, climbing from 246.4 million pounds in 2010 to a record 373 million pounds in 2019 (fig.1). The value of production also has grown; in 2019, the value of fresh production was \$760 million compared with \$460 million in 2010. Blueberries are the second most produced berry (after strawberries) in the United States, and blueberry production has been growing faster than strawberry production over the past decade. Consumption has grown even faster than production. Annual fresh blueberry per capita consumption has grown over 510 percent, from 0.33 pounds per person in 2000-02 to 2.02 pounds per person in 2017-19. Imports of fresh blueberries have grown to meet demand and support year-round availability.



<sup>4</sup> This article does not discuss wild blueberries, which are a distinct industry from cultivated blueberries.

USDA Agricultural Marketing Service (AMS) reported 2019 fresh-market blueberry shipments from eight States: California, Florida, Georgia, Michigan, New Jersey, North Carolina, Oregon, and Washington. This diversity is due to a number of varieties of blueberries that can be grown in different climates. Northern highbush blueberries typically require more “chill” hours (chill hours are defined as the minimum number of hours in the winter under 45°F that a variety requires for production) and milder summers. The rabbiteye variety, native to Georgia, benefits from hot summer weather in the Southeast. Southern highbush, a hybrid of northern highbush and rabbiteye, also thrives in hot humid weather and ripens earlier than the rabbiteye.



In 2010, the biggest U.S. producers of fresh-market blueberries were New Jersey, Georgia, and Michigan. California, Washington, and Florida were smaller producers. In 2019, Georgia, California and Oregon were the largest suppliers, each with roughly 17 percent of total domestic supply<sup>5</sup>. Since 2010, U.S. blueberry production has expanded in the spring and late summer/early fall (fig. 2).

The Florida crop typically arrives in the market beginning in March and ending in May. Georgia enters the market in mid-to-late April, followed by other major producing States which come into production through the summer. California’s peak harvest period is May to June with smaller

<sup>5</sup> When considering both fresh-market and processing blueberries, Washington and Oregon are the two largest producers.

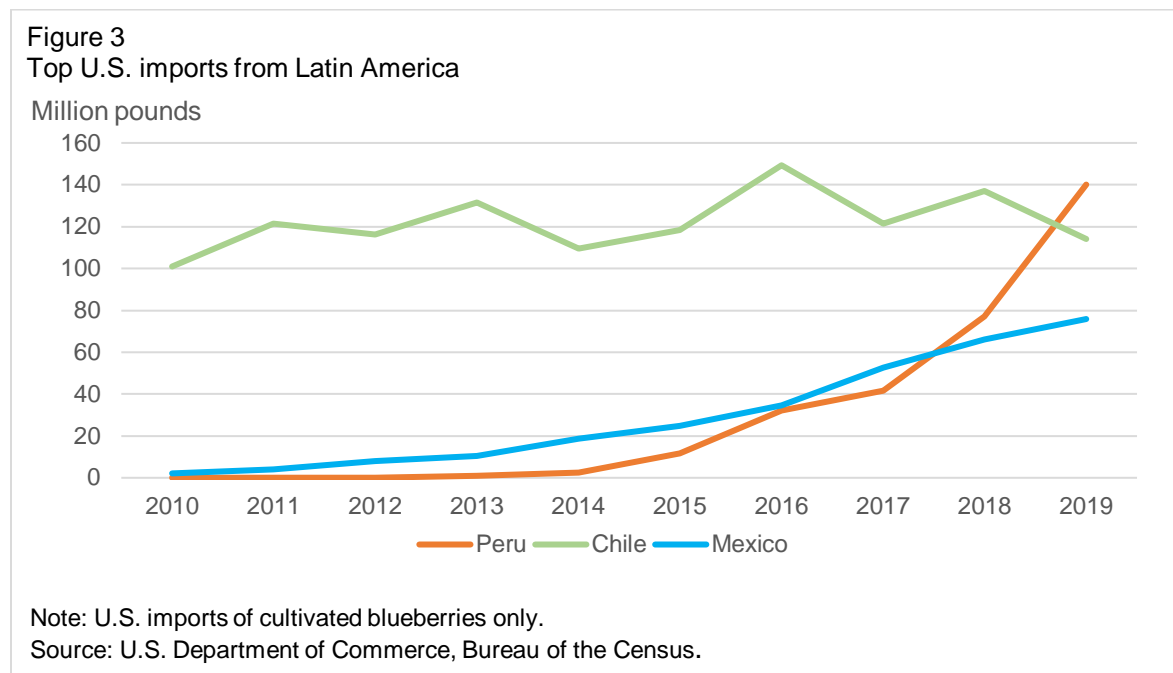
supplies throughout the year. Florida growers used to have very small production in March (which does not appear in figure 2 because AMS needs reports from three growers before it can publish data) but have since increased production in March using the low chill southern highbush blueberry. In addition, blueberry production in southern Florida has grown. The Georgia season now starts in April, a month earlier than in 2010. Growers in Georgia use both southern highbush and rabbiteye to extend their season. In eastern Washington, dry growing conditions and relatively little pest pressure (except for the Spotted Wing Drosophila (SWD)) have led to the growth in blueberry production there. Eastern Washington has extended its early season with this new production. While the U.S. harvest ends in September for growers throughout the United States except California; Washington, Michigan, and Oregon ship into October with the use of controlled atmosphere environment storage.

Increases in area harvested (total blueberries not just fresh-market blueberries) led to expanding production over time, from 70,510 acres in 2010 to 102,700 cultivated blueberry acres in 2019. Yields have also increased. In 2019, the average yield was 6,630 pounds per acre for cultivated blueberries, up from 5,830 in 2010. Yields vary substantially by State with 2019 yields ranging from 11,700 pounds per acre in Oregon (closely followed by California with 10,100 pounds per acre and Washington with 9,760 pounds per acre) to 4,120 pounds per acre in Michigan, where winters can be harsh.

One advancement in production is growing blueberries under high tunnels, a covered structure which allows growers to control the environment better. The high tunnel reduces the risk of frost and may yield an earlier harvest. Tunnels are used in Florida (on a small scale) and California in the United States as well as in Mexico and Chile. Growers in eastern Washington use mesh tents to protect their blueberries from the SWD.

Another advancement in production is the mechanical harvester, primarily used for blueberries destined for processing. In the past, mechanical harvesters were not been widely used for blueberries for the fresh market, as the harvester can bruise the fruit. Some growers have used it for harvesting passes through their fields later in the harvest season. Now, many growers are using the mechanical harvester on all their conventional fresh-market berries throughout the harvest season due to declining blueberry prices and increasing labor costs. Growers in Georgia, New Jersey, Michigan, and the Pacific Northwest use the mechanical harvester on fresh-market berries. Washington State may be the largest user of mechanical blueberry harvesters in the United States, with about half of its conventional berries mechanically harvested. While the mechanical harvester may be cost-effective, the industry would benefit

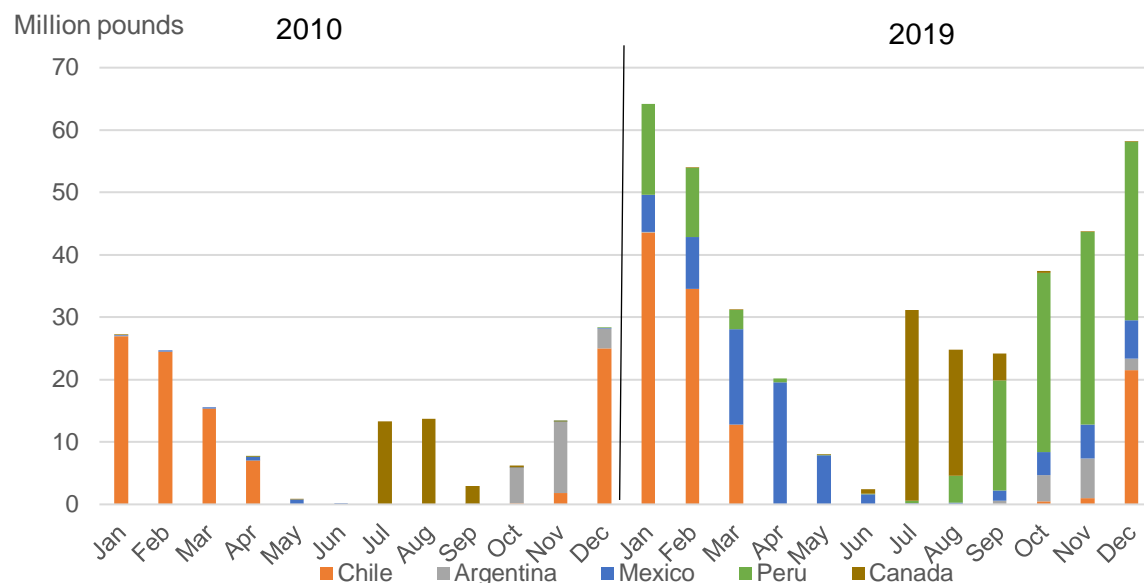
from a more advanced mechanical harvester to handle delicate fresh-market berries and from newer varieties that do not bruise as easily.



Global blueberry production grew rapidly over the past decade; on average, 60 percent of U.S. blueberry consumption was imported during 2017-19. In 2010, Chile was the main foreign supplier of fresh-market blueberries to the United States. In 2019, about 80 percent of U.S. blueberry imports came from three countries: Peru, Chile and Mexico. Since 2010, Peru’s blueberry exports have grown exponentially; in 2019, Peru became the leading supplier of U.S. blueberry imports (fig. 3). The boost in production in these countries is likely a result of increased cultivation of newer varieties and expanded acreage devoted to blueberries in relatively new producers of blueberries such as Peru and Mexico.



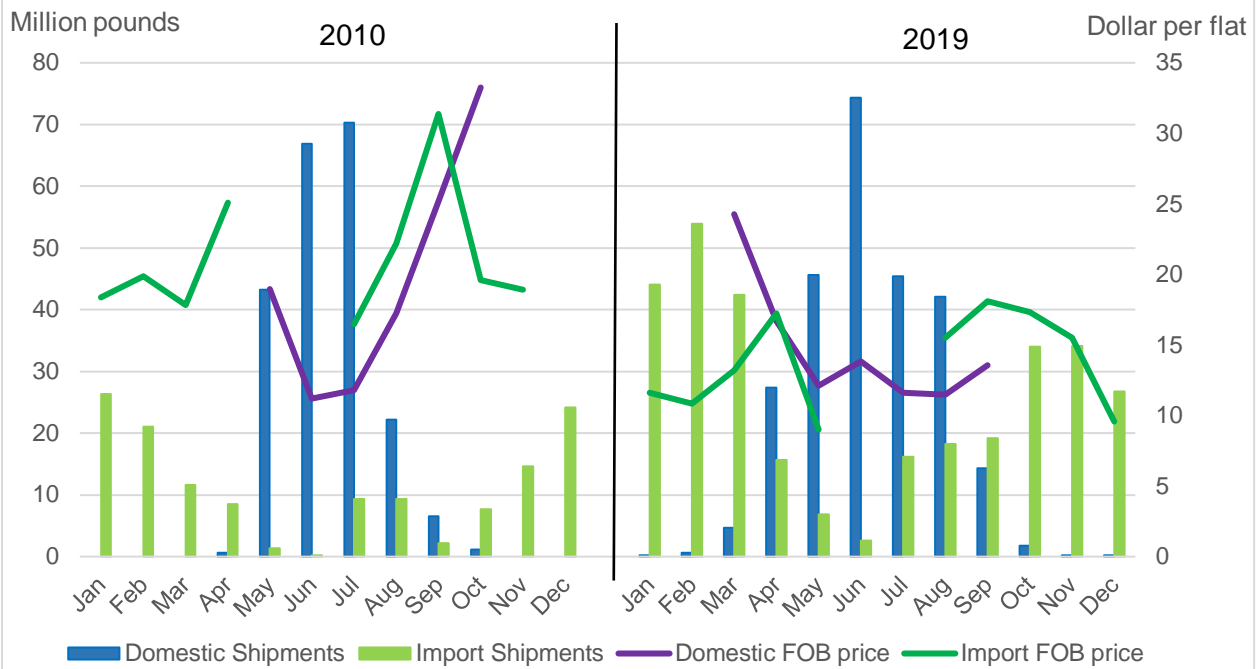
Figure 4  
Top 5 foreign fresh-market blueberry suppliers, 2010 and 2019



Note: Top five countries of U.S. fresh cultivated blueberry imports.  
Source: U.S. Department of Commerce, Bureau of the Census.

In 2010, there was little overlap in season between U.S. producers and foreign suppliers to the United States. The periods between the main domestic and import seasons had very high prices. Domestic growers and importers tried to produce or market in those periods, if possible, to capture the high prices. In 2010, Peru and Mexico produced much smaller quantities of blueberries. Since then, imports and domestic supplies have started to overlap, putting pressure on U.S. producer and importer prices. In August and September 2019, domestic shipping prices averaged \$11.50 to \$13.50 per flat (12 6-ounce cups with lids), compared to \$17 to \$25 per flat in 2010 (fig. 5). In September to October 2019, 70 percent of import shipments were from Peru (fig. 4) In early spring, imports from Mexico have grown (imports from Chile have declined slightly), while Florida and Georgia now harvest more in March and April. In May 2019, the domestic shipping point price was \$12 per flat, compared to \$19 per flat in 2010.

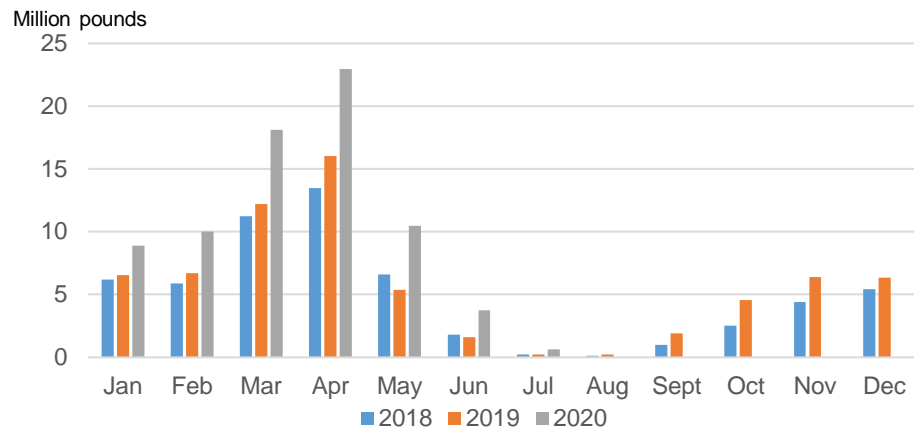
**Figure 5**  
**Blueberry shipments have grown during the off seasons**



FOB= freight on board  
 Flat is 12 6- ounce cups with lids  
 Source: USDA, Agricultural Marketing Service, *Market News*, Movement Data and Shipping Point Data.

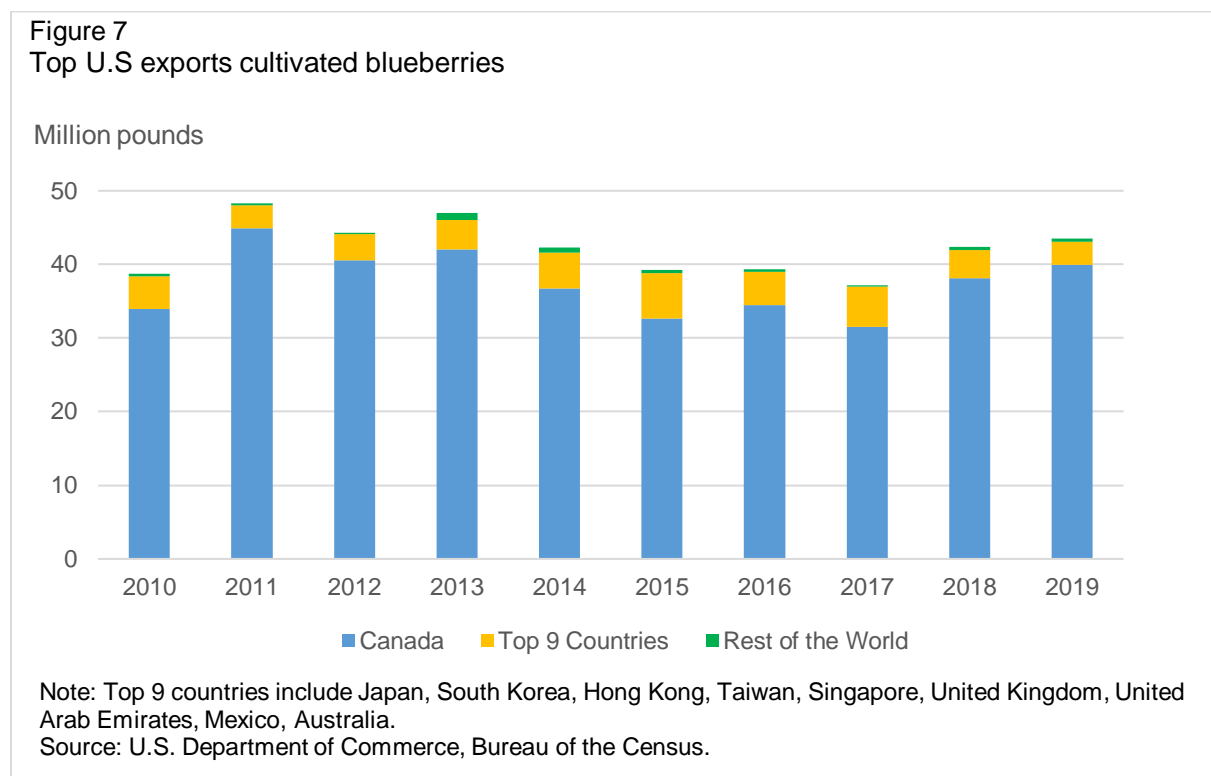
Mexico is likely to continue to put downward pressure on spring blueberry prices if production there continues to increase. U.S. imports from Mexico in 2020, compared to 2019, increased 48 percent in March, 43 percent in April, and 94 percent in May (fig. 6). Changes in prices reflect growth of domestic and imported supplies in the U.S. market, as well as economies of scale.

**Figure 6**  
**Blueberry imports from Mexico, 2018-2020**



Source: USDA, Agricultural Marketing Service, *Market News*, Movement Data.

Expanding domestic production and increasing global demand present potential new opportunities and challenges for U.S. producers. U.S. exports of fresh-market blueberries fluctuated over the past decade and reached 43.5 million pounds in 2019, a 12-percent increase from 2010. On average, 88 percent of U.S. annual blueberry exports are to Canada [from 2010-19] (fig. 7). Other leading markets for U.S. fresh blueberries include South Korea, Japan, Taiwan, the United Kingdom, and Hong Kong, with a combined share of about 10 percent of total export volume.



Under the U.S.-China Economic Trade Agreement, as of May 2020, the United States was granted access to export blueberries to China. Chinese consumption of fresh blueberries grew from 14,000 tons in 2012 to 180,000 in 2018. China's domestic blueberry production peaks in June and July. More than 70 percent of China's domestically produced blueberries are consumed fresh. The bulk of China's blueberry imports comes from Chile and Peru, each of which has a free trade agreement with China and a harvest season opposite of China's. The United States will benefit due to the lack of competition from other exporters to China in July to September.

In July 2020, the United States-Mexico-Canada Agreement (USMCA) went into effect, replacing the North America Free Trade Agreement (NAFTA). Like NAFTA, the USMCA provides for tariff- and quota-free trade among the member countries for almost all agricultural products, including blueberries, and affirms the right of each member country to apply its antidumping and countervailing duty laws to imports from the other member countries. Under the Trump Administration’s plan to protect U.S. farmers, the Office of the United States Trade Representative (USTR), USDA, and the U.S. Department of Commerce are examining increases of imports of seasonal and perishable fruit and vegetables, including blueberries. After two days of hearings in August 2020, with testimony from different sides of the issue, these three agencies jointly outlined a plan that includes that “USTR will request the International Trade Commission to initiate a Section 201 global safeguard investigation into the extent to which increased imports of blueberries have caused serious injury to domestic blueberry growers.” To ensure fair trade in the United States, as the U.S. blueberry market evolves, global production expands, and demand grows.

## Suggested Citation

Kramer, J. Simnitt, S. and Calvin. L (2020), *Fruit and Tree Nuts Outlook: September 2020*, FTS-371, U.S. Department of Agriculture, Economic Research Service, September 29, 2020.

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