



Fruit and Tree Nuts Outlook: March 2023

Catharine Weber, Skyler Simnitt,
Gary Lucier, and Wilma V. Davis

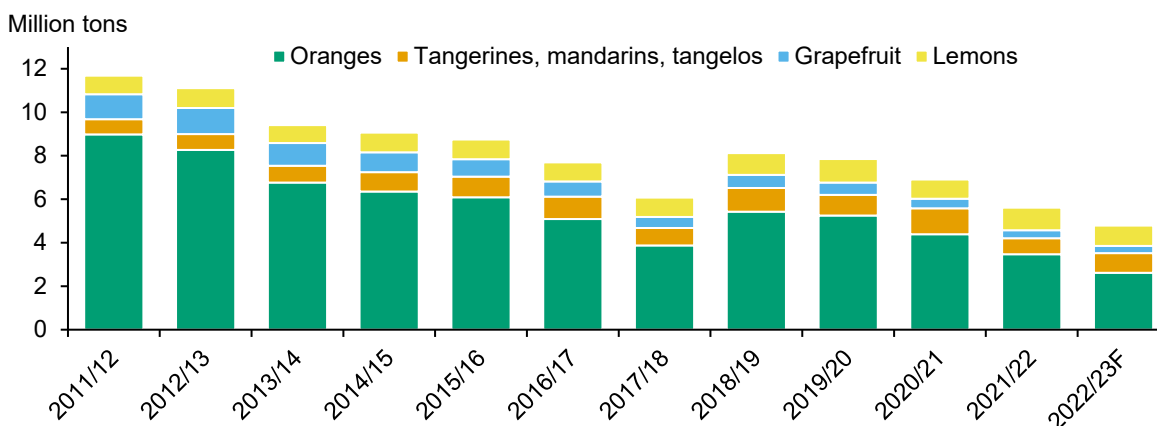
In this report:

- [Price Outlook](#)
- [Citrus Fruit Outlook](#)
- [Noncitrus Fruit Outlook](#)
- [Melons Outlook](#)
- [Tree Nuts Outlook](#)
- [Special Article: U.S. Raisin Statistics](#)

New Low in U.S. Citrus Crop

The most recent U.S. citrus crop forecast (March 2023) for 2022/23 is 4.8 million tons, down 15 percent from the 2021/22 final utilized total of 5.6 million tons. As of the March 2023 USDA, National Agricultural Statistics Service (NASS) Crop Production report, the U.S. all-orange production is forecast at 2.6 million tons, down 25 percent from final production for the 2021/22 season. Production of grapefruit is expected to reach 328,000 tons down 12 percent from the 2021/22 season. Lemons, 95 percent of which are supplied by farms in California, are also expected to be down from last year by 9 percent (100,000 tons). Tangerines are the only citrus commodity expected to see increases over last season's production levels, with 904,000 tons expected in 2022/23, an increase of 23 percent over last season (2021/22).

Total U.S. citrus production is forecast to be 13 percent below last year's levels



F = Forecast.

Source: USDA, Economic Research Service based on data from the USDA, National Agricultural Statistics Service, *Crop Production*, March 2023 issue, and *Citrus Fruit Summary*, various issues.

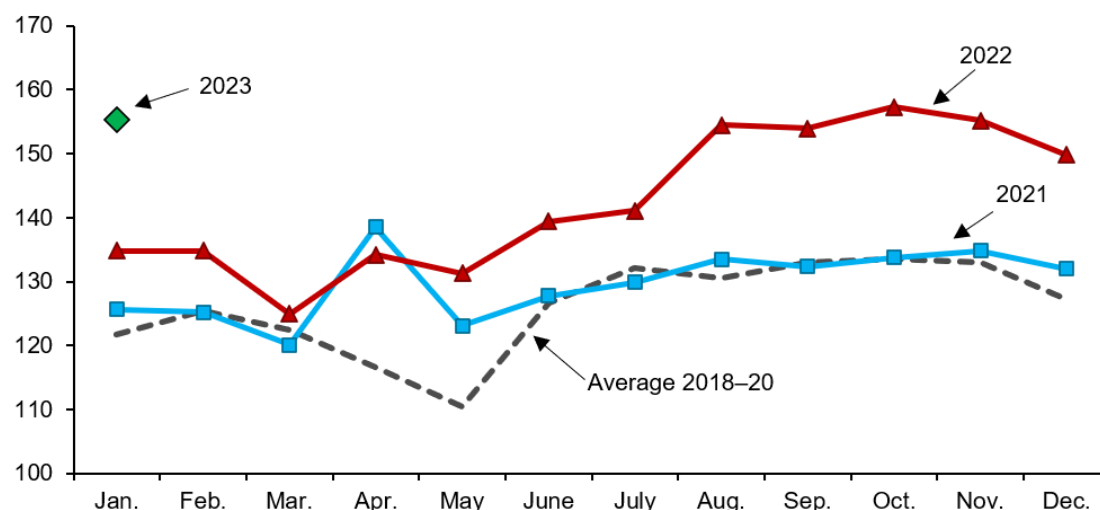
Price Outlook

Fruit and Tree Nut Grower Prices Moving Higher in Early 2023

Fruit grower prices in 2023 began the year strong, denoted by the higher grower price index for fruit and nuts in January. At 155.4 (2011=100), the index was up from the January 2022 index of 134.8 and 28 percent higher than the January 2018–20 index average of 121.8 (figure 1). The index for prices received for fruit and tree nuts in January 2023 is the second highest since the beginning of the index in 1990, behind October 2022. Significantly higher grower prices for apples, strawberries, and grapefruit as well as fresh pears strengthened the January index—the largest year-to-year gain since 2014 (table 1).

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

2011=100



Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Agricultural Prices*.

So far this season (November 2022–January 2023), fresh orange prices are down; however, this is expected to change in coming months given supply gaps in California due to recent winter rains. Fresh orange prices could receive an additional boost this spring and summer given a smaller crop forecast of Valencia oranges in California. Similar to oranges, Fresh lemon prices are also down thus far in the season (August 2022–January 2023), despite lower year-over-year forecasted production levels in California. Meanwhile, grapefruit prices have continued strong on reduced production, especially due to a much smaller expected harvest in Florida this season. Grapefruit prices will likely continue to strengthen as U.S. supplies start to wind down seasonally during the spring.

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

Commodity	December		January		Year-to-year change	
	2021	2022	2022	2023	December	January
	----- Dollars per box -----				Percent	
Citrus fruit: ¹						
Grapefruit, all	17.41	24.11	15.71	20.65	38.5	31.4
Grapefruit, fresh	29.85	33.00	29.11	29.94	10.6	2.9
Lemons, all	19.95	14.19	18.29	15.79	-28.9	-13.7
Lemons, fresh	28.60	25.06	26.56	24.76	-12.4	-6.8
Oranges, all	11.95	12.63	12.51	14.74	5.7	17.8
Oranges, fresh	22.57	20.87	23.91	20.70	-7.5	-13.4
	----- Dollars per pound -----					
Noncitrus fruit:						
Apples, fresh ²	0.716	0.889	0.746	0.922	24.2	23.6
Grapes, fresh ²	1.220	1.155	1.645	--	-5.3	--
Peaches, fresh ²	--	--	--	--	--	--
Pears, fresh ²	0.610	0.690	0.615	0.710	13.1	15.4
Strawberries, fresh	2.470	2.960	2.310	2.990	19.8	29.4

-- Insufficient number of reports to establish an estimate.

Note: Beginning in February 2020 estimates, all monthly price estimates for the noncitrus fruits are derived exclusively from data provided by USDA, Agricultural Marketing Service (AMS) and reflect free-on-board shipping point basis. Previously these estimates were based on a combination of survey data and information from AMS.

¹Equivalent on-tree price.

²Equivalent 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, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Agricultural Prices*.

Lower strawberry supplies in January from Florida, the main domestic source for winter strawberries in the United States, sent strawberry grower prices higher (up 29.4 percent) as cooler weather slowed production. The U.S. Apple Association reported lower than average apples in storage as of February 1, 2023, keeping prices strong and reflecting the smaller 2022/23 crop in Washington State. Total apple holdings were reported at 71.9 million bushels, 7.3 percent less than last February's total and 12.6 percent below the 5-year average.

Consumer Price Index for Fresh Fruit in Early 2023 Increased

The Consumer Price Index (CPI) for fresh fruit was reported at 410.4 (1982–84 = 100) in February 2023, up 0.4 percent from last February. In 2023, U.S. retail prices for fresh fruit rose compared with last year, based on data from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) (table 2), increasing the CPI during the first 2 months of 2023.

- As with grower prices, lower supplies are driving up apple and strawberry retail prices. Apples and bananas are two of the most heavily weighted prices in the fresh fruit CPI, together accounting for about 29 percent of the index relative importance—about the same as all citrus fruit.

- The overall low supplies of oranges boosted prices. February 2023 retail prices for navel oranges were \$1.55 per pound, a 7.2 percent increase from February 2022. An all-time low supply of orange juice from Florida, the dominant supplier, is putting upward pressure on prices.
- BLS data show the average retail price for strawberries in February increased from \$3.05 per 12-ounce pint in 2022 to \$3.17 in 2023. While the retail price in February remained above last year's, an increase in strawberry shipments from Florida compared with the previous month contributed to a slight month-to-month decline.
- In January and February 2023, banana average retail prices remained similar to prices during the same months last year with a year-over-year increase of 1.4 and 2.1 percent, respectively. Higher USDA, Agricultural Marketing Service (AMS) banana shipment volumes compared with the same months last year from major suppliers Guatemala, Ecuador, and Honduras, helped stabilize prices.
- Providing an indication of apple retail prices in general, the CPI for apples was up 8.5 percent in the beginning of 2023, likely due to tight supply.
- The CPI for both processed fruit and vegetable category and canned fruit was up over 14 percent in February. In the February 2023 USDA, ERS food price outlook, the annual CPI for processed fruit and vegetables is expected to be 9.9 percent higher in 2023 than 2022, which is above the predicted 7.9 percent increase for all food prices.

Table 2--U.S. monthly retail prices for selected fruit, 2022–23

Commodity	Unit	2022		2023		2022–23 change	
		January	February	January	February	January	February
		-----1982–84 = 100 -----				--- Percent ---	
Fresh fruit		394.945	408.722	406.905	410.242	3.0	0.4
Apples		343.824	356.638	372.933	376.556	8.5	5.6
		-----1997 = 100 -----					
Processed fruits and vegetables		172.304	175.719	197.142	200.624	14.4	14.2
Canned fruit		175.220	176.105	198.517	202.009	13.3	14.7
		--- Dollars ---		--- Dollars ---		--- Percent ---	
Fresh:							
Navel oranges	Pound	1.427	1.445	1.514	1.549	6.1	7.2
Orange juice, frozen concentrate ¹	16 oz.	2.621	2.754	2.823	2.982	7.7	8.3
Lemons	Pound	2.078	--	2.194	2.157	5.6	--
Bananas	Pound	0.630	0.628	0.639	0.641	1.4	2.1
Strawberries ²	12-oz. pint	3.106	3.045	3.467	3.169	11.6	4.1

-- Insufficient marketing to establish a price.

¹Data converted from 12-fluid-ounce containers.

²Dry pint.

Source: USDA, Economic Research Service based on data from U.S. Department of Labor, Bureau of Labor Statistics.

Citrus Fruit Outlook

Orange Production Down 25 Percent

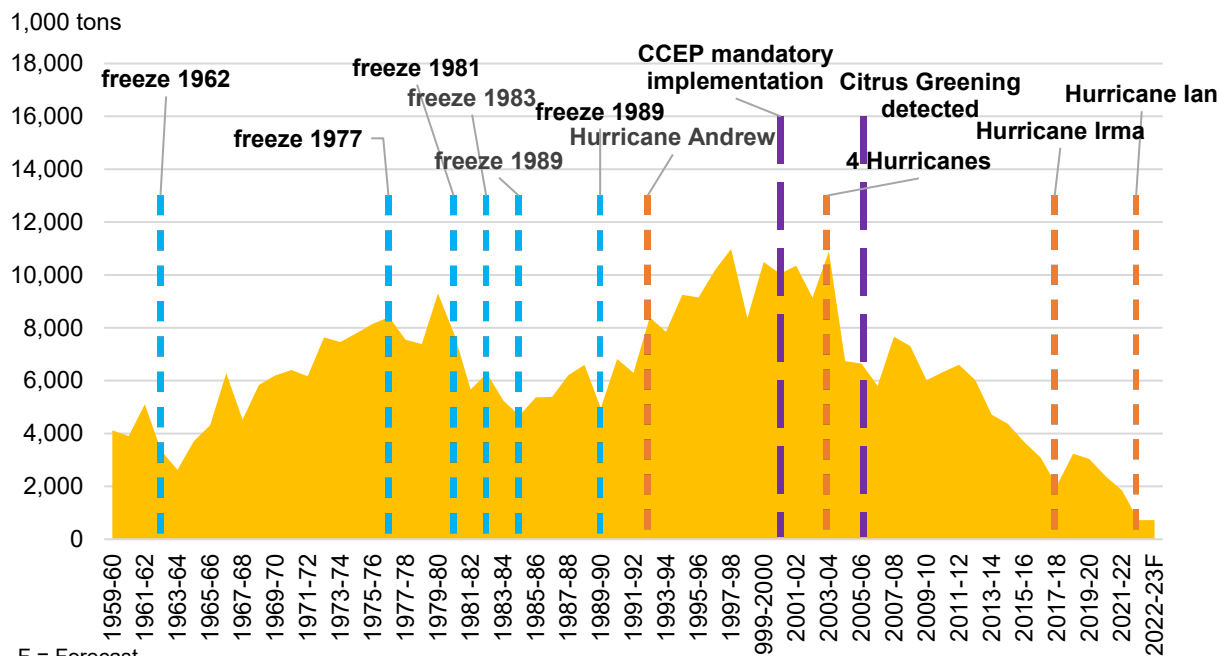
The USDA's National Agricultural Statistics Service (NASS) provides production estimates for two main categories of oranges: (1) Valencia oranges (a seeded variety popular for juicing), and (2) non-Valencia which includes early and mid-season varieties such as navel. California is the nation's top producer of oranges from the non-Valencia group while Florida leads the nation in production of Valencia oranges. Total orange production for the United States this season (November 2022–October 2023) is forecast down 25 percent from last year (2021/22). This decrease is due to an unprecedented year-over-year decrease in Florida's Valencia, and non-Valencia crops; decreases of 56 and 66 percent, respectively. In 2022/23 California's combined orange crop is forecast up by 14 percent (an increase of 228,000 tons), thanks to a larger non-Valencia crop. California's Valencia orange crop, however, is forecast 6 percent (20,000 tons) down from last season's final output. Despite the expected year-over-year increase in the California orange crop, it is ultimately forecast to result in a total output level below the previous 10-year average for California oranges (2 million tons).

Natural Disasters and Disease Affect Florida's Citrus Industry: Florida has experienced declining citrus production levels for nearly two decades (figure 2). Orange production in Florida peaked at 242 million boxes (nearly 11 million tons) in the 2003/04 season. Then in the fall of 2004, a series of hurricanes in quick succession (Charley, Ivan, Jeanne, and Dennis) reduced the 2004/05 crop and spread citrus canker to yet unaffected areas. Citrus canker is a harmful bacterial disease that affects tree health and fruit marketability. To combat the spread of canker, the State of Florida implemented the Citrus Canker Eradication Program (CCEP) making it mandatory between the years 2000–2006. CCEP protocols required infected citrus trees and trees within a certain radius of those infected to be removed. The Florida citrus industry encountered additional difficulty in 2005 when Huanglongbing (citrus greening disease), another bacterial disease deadly to citrus trees, was detected in commercial groves in the State. Citrus greening is transmitted via an insect vector, the Asian Citrus Psyllid. This disease attacks tree health by damaging the phloem, which leads to premature fruit drop, unripe fruit, and eventual tree death. With no known cure, citrus growers employ a variety of management tactics to protect young trees, increase tree immune response, sustain grove health, and improve fruit marketability. Such practices can include increased fertilizer use, more frequent pesticide applications, increased replanting, and the implementation of stricter transport protocols.

Despite these efforts, orange production in the State has fallen by an annual average rate of 6 percent since the 2003/04 season. At the same time, bearing acreage of Florida's orange trees has declined at an average rate of 3 percent per year. Additional hurricanes (Irma in fall of 2017) and Ian (fall of 2022) dealt further damage to Florida's citrus industry.

Figure 2

Orange production levels in Florida have a history of declining after natural disasters and after spread of major disease



F = Forecast.

Source: USDA, Economic Research Service based on data from Florida Department of Agriculture, Florida Agricultural Statistics Service *Citrus Summary* (issues 1948, 1960, 1970, and 1989-90) and USDA, National Agricultural Statistics Service, *Citrus Fruit Summary* (various issues).

Florida's 2022/23 Valencia Orange Crop Sets Historic Low: Florida's total orange crop for the 2022/23 season is forecast at 725,000 tons, the smallest since the 1936/37 season. If realized, this will also be the first season that Florida's combined orange crop (early and mid-season and Valencia) is smaller than that of California. The largest expected decline this season over last year is Florida's early and mid-season orange crop forecast at 275,000 tons, 66 percent below last season. Florida's Valencia crop is forecast at 450,000 tons, a 56 percent decline from last year's crop which was already at a historic low.

California Non-Valencia Orange Production Up in 2022/23: California is expecting a 20 percent increase over its relatively small navel and early and mid-season variety orange crops from last season. If realized, this will be an increase of 6 million boxes or 248,000 tons in 2022/23 compared with 2021/22. California has long been the nation's top producer of non-Valencia (navel and early and mid-season varieties) oranges supplying 63 percent of the

national crops in 2020/21 and 2021/22. Production of Valencia oranges, a popular variety for juicing, is expected to be down by 6 percent in California this year.

Texas Orange Production Bounces Back from Last Season's Freeze: Texas has historically accounted for about 2 percent of U.S. commercial orange production. As of January 2023, Texas orange production is forecast at 49,000 tons, which will be a 475 percent increase over last season (2021/22). This substantial jump in Texas orange production follows last season's 30-year low attributable to the effects of Winter Storm Uri on fruit set in February 2021.

Fresh Orange Import Volume Reaches Record High in 2021/22: Counter seasonal U.S imports allow for year-round availability of fresh oranges to U.S. consumers. Domestic production of fresh oranges (both non-Valencia and Valencia) typically peaks in the second fiscal quarter (January–March) and decreases thereafter before bottoming out in September. Import levels of fresh oranges counter these trends, with import volumes shooting up after June and peaking in July or August, then rapidly tapering down before bottoming out in November. Imports of fresh oranges for the 2022/23 season to date (November 2022–January 2023) are down compared to the same period last year; however, these are expected to pick up in the coming months as a response to lower domestic production levels. Despite declining demand for orange juice, fresh oranges have remained a popular choice with U.S. consumers and per capita availability (a proxy for consumption) is expected to be over 8 pounds in the 2022/23 season. The top foreign suppliers of fresh oranges to the U.S. market are Chile, Mexico, and South Africa, accounting for 33, 30, and 23 percent of imports in the 2021/22 season.

Despite an 85-year low projected for orange production in Florida, oranges for the fresh market forecast only slightly below last season's levels of 1.4 million tons. About 95 percent of Florida's orange crop has historically gone to the processing market for juice, whereas 75 percent of California oranges are for the fresh market. U.S. exports of oranges for the fresh market are likely to be at or below last season's level of 378,000 tons, with Canada, South Korea, Hong Kong, and Japan remaining the largest foreign destination markets for U.S.-grown fresh oranges.

Feeling the Squeeze: Florida's Orange Juice Production Continues 50+ Year Decline

An estimated 57 percent of U.S. grown oranges are expected to go to processing this season (2022/23). Florida is the main supplier of oranges for the domestic processing market. With Florida orange production levels estimated at an 85-year low, orange juice production levels are

also estimated lower this season (table 3). The USDA, Economic Research Service publishes historic statistics on U.S. production of orange juice and per capita availability dating to the early 1970s. Current estimates place orange juice production at 218 million single strength equivalent (SSE) gallons, the lowest level for which there is historic data.

Table 3 -- United States: Orange juice supply and utilization, 2012/13 to 2022/23F

Season ¹	Beginning stocks	Production	Imports	Total supply	Exports	Domestic consumption	Ending stocks	Per capita availability
-----Million SSE gallons ² -----								Gallons
2012/13	449	847	421	1717	159	1024	534	3.25
2013/14	534	663	418	1615	158	974	483	3.07
2014/15	483	592	460	1534	113	908	512	2.84
2015/16	512	503	390	1406	92	894	420	2.78
2016/17	420	422	419	1262	79	809	374	2.49
2017/18	374	271	576	1220	48	808	364	2.48
2018/19	364	465	482	1310	42	744	524	2.27
2019/20	524	418	292	1234	48	778	408	2.36
2020/21	408	320	396	1125	44	725	356	2.28
2021/22	335	286	404	1025	41	620	345	2.21
2022/23F	218	218	555	991	35	809	147	2.41

F= Forecast.

¹Season begins in October of the first year shown.

²SSE = single-strength equivalent.

Source: USDA, Economic Research Service.

As of mid-February 2023, harvest of Valencia oranges in Florida is still in the early stages. The average processing orange price reported by USDA, NASS in January 2023, was \$3.26 per box, less than half of what it was the same time last year. These grower prices are down despite beginning stocks of both chilled and frozen concentrated orange juice being down from last year. Nielsen Retail sales data published by the Florida Department of Citrus indicate that season year-to-date retail prices (October 2022–February 2023) for orange juice are up 12.6 percent; therefore, higher grower prices may come for processing oranges in the coming months.

U.S. Orange Juice Imports May Set Record High in 2022/23: To compensate for lower production, U.S. orange juice imports are expected to increase over last year reaching more than 550 million (SSE) gallons. If realized this will be the highest import quantity of orange juice in at least 50 years. Mexico and Brazil are expected to remain the main suppliers of orange juice imports into the United States, accounting for a combined 90 percent in 2021/22. Given lower expected production volumes of orange juice in Mexico and Brazil in the 2022/23 season, however, Costa Rica, Spain, and South Africa may make slight gains in their share of U.S. orange juice imports this season.

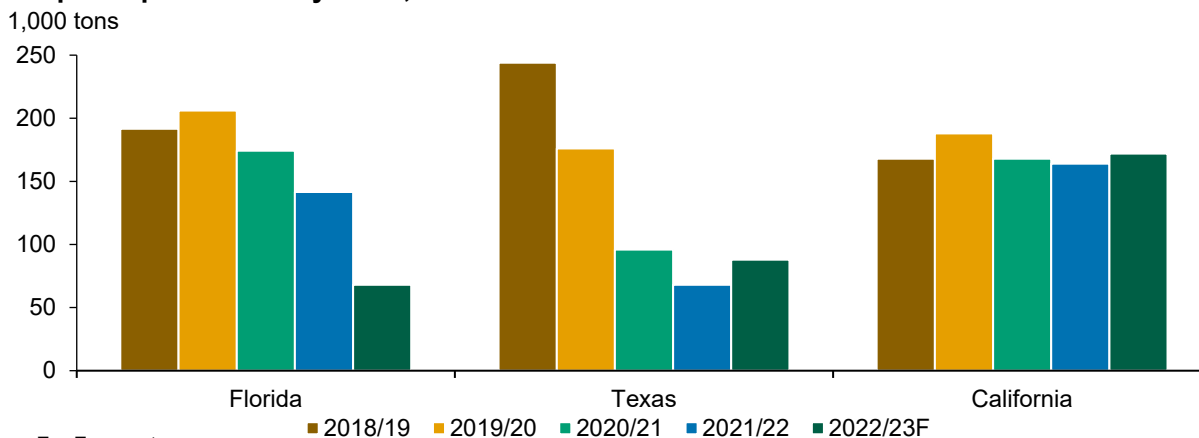
U.S. exports of orange juice are expected to reach a record low of 35 million (SSE) gallons. Canada will remain the primary foreign destination for U.S. produced orange juice accounting for more than two-thirds of all orange juice exports.

Grapefruit Production Expected to be Down in 2022/23

California will lead grapefruit production this season with an expected 5 percent increase over 2021/22 levels (figure 3). About 70 percent of California’s grapefruit crop is expected to go to the fresh market, with the remainder for processing.

Grapefruit is Texas’s dominant citrus commodity group, and as recently as the 2018/19 season, Texas growers led the nation in production. However, that State’s share of production has declined over the last 4 years accounting for only 18 percent in 2021/22. Current projected production levels of 88,000 tons for the 2022/23 season are an improvement over last year but still far below pre-Winter Storm Uri levels (2019/20).

Figure 3
Grapefruit production by State, 2018/19–2022/23F



F = Forecast.

Source: USDA, Economic Research Service based on data from the USDA, National Agricultural Statistics Service, *Crop Production*, March 2023 issue, and *Citrus Fruit Summary*, various issues.

Hurricane Ian passed through Florida’s Indian River Citrus district where commercial grapefruit production is concentrated. While the extent of Ian’s damage to Florida’s grapefruit industry has yet to be determined, it is worth noting that following the hurricane USDA, NASS in March 2023 reduced Florida’s grapefruit production estimates by 20 percent from the pre-storm estimates released in October 2022. If realized, this will be a 52-percent reduction in Florida’s grapefruit crop over last season (2021/22). While California and Texas are both expecting higher grapefruit crops in 2022/23 compared with last season (2021/22), these are not expected to offset projected losses in Florida.

Florida 2022/23 Grapefruit Production Behind California and Texas: The Row Count Survey conducted by USDA, NASS in Florida groves in late February 2023 indicated that 72 percent of grapefruit rows were already harvested. As of March 2023, Florida's total grapefruit crop was estimated at 68,000 tons, with slightly more than half expected to go to the fresh market. Florida will be last in grapefruit production in 2023, behind California at 172,000 tons, and Texas at 88,000 tons.

Current fresh grapefruit prices are registering higher than the 5-year average. The November 2022 to January 2023 average price for fresh U.S. grapefruit was \$32 per box, 4 percent above the average price from last season for the same period.

Fresh grapefruit imports are down so far this season (October 2022–January 2023) and are expected to remain below 2021/22 levels. However, exports are also expected down below last year's levels resulting in per capita availability equivalent to last season of 1.14 pounds per person. Mexico and South Africa are expected to remain the primary foreign suppliers of grapefruit to U.S. consumers, accounting for a combined 80 percent of U.S. fresh grapefruit imports. Canada, Japan, and South Korea are likely to remain the largest foreign markets for U.S. fresh grapefruit exports in the 2022/23 season.

Grapefruit Juice Production Expected Lower this Season: In 2022/23, domestic grapefruit juice production is expected to be 14.6 million (SSE) gallons. If realized, this will be the lowest production level of grapefruit juice in at least 50 years. As a response to lower projected production levels, imports of grapefruit juice are expected to double from last season. Mexico and South Africa will remain the top two suppliers of grapefruit juice imports. At the same time, U.S. grapefruit juice exports are expected to reach a 50-year low of 14.5 million (SSE) gallons. Canada, the Netherlands, Japan, and South Korea will likely remain the top destination markets for U.S. produced grapefruit juice. Higher expected imports and lower exports this season are unlikely to offset continued attrition of the U.S. grapefruit juice market with per capita availability projected at 7.8 fluid ounces (less than 1 cup) per person in the 2022/23 season.

U.S. grower prices for processed grapefruit for January 2023 are higher than the same period last season. Nielsen Retail sales data from the 2022/23 season suggest that season year-to-date grapefruit juice prices are up 9 percent while sales volume is down 8 percent.

Lemon Production Forecast Down in 2022/23

The U.S. lemon crop for the 2022/23 marketing season (August 2022–July 2023) is anticipated to be 940,000 tons, 9 percent below the final utilized production total in 2021/22. Ninety-six

percent of commercial lemons grown in the United States come from California. California lemon production is forecast at 880,000 tons, down 12 percent from last season. Production of Arizona lemons is forecast at 60,000 tons this season, an increase of 58 percent. This larger year-over-year lemon crop forecast in Arizona comes after two uncharacteristically small crops of the 2020/21 and 2021/22 seasons.

Fresh Lemon Prices Lower Despite Smaller Domestic Crop: Fresh lemon grower prices for the current season (August 2022–January 2023) average \$25.73 a box, down 15 percent from the same period last year. Weekly shipments of fresh lemons, according to USDA, Agricultural Marketing Service (AMS) data suggest, however, that shipments of fresh lemons (August 2022–January 2023) were generally above levels from the same period last year. Looking forward, fresh lemon prices are expected to rise as movement slows down and the market reaches a new equilibrium. Fresh lemon imports season year-to-date are down 24 percent from 2021/22. Imports from Mexico are up by 2 percent, while imports from Argentina and Chile are down by 21 percent and 58 percent, respectively. Fresh lemon imports are typically highest at the outset of the season (August through October), thus total imports are likely to remain below 2021/22 levels. Exports are also down this season year-to-date. Per capita availability is expected to be 4.5 pounds per person.

Tangerines, Mandarin, and Tangelo Crops Forecast Up from Last Season

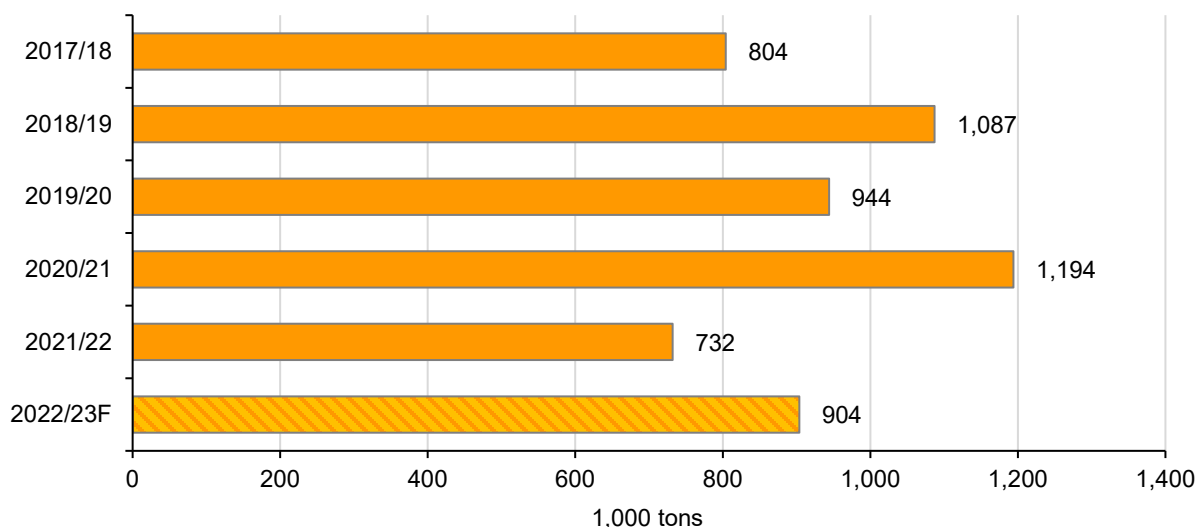
Total production of U.S. tangerines, a commodity group including tangerines, mandarins, and tangelos, is forecast at 904,000 tons in the 2022/23 season. If realized, this quantity will be 24 percent higher than final production levels in the 2021/22 season (November–October).

Tangerine production in the United States has generally followed a trend of growth over the last 20 years with an average annual increase of 5 percent since the 2002/2003 season. This larger year-over-year harvest will be consistent with that trend offsetting a much smaller crop in 2021/22 (figure 4). A larger harvest of 880,000 tons is forecast in California while Florida's production is forecast to fall by 33 percent.

Although USDA, NASS already forecast a smaller harvest for Florida at the outset of the 2022/23 season, (33,000 tons) after losses from Hurricane Ian, this figure was revised down to 24,000 tons. However, with 95 percent of all domestic production occurring in California, declines in Florida are expected to have minimal impact on the overall market.

Figure 4

Tangerines: Only citrus commodity group with production forecast (2022/23) increase over last season



F = Forecast.

Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Crop Production*, March 2023 issue, and *Citrus Fruit Summary*, various issues.

Tangerine Exports Up in Early 2022/23: Domestic demand for tangerines, mandarins, and tangelos is expected to remain strong; nonetheless, imports are currently down. The top foreign suppliers of tangerines to the U.S. market are Chile, Peru, and Morocco. Imports from Chile and Morocco are down season-to-date (November 2022–January 2023) by 15 percent and 74 percent, respectively. Tangerine exports are up season-to-date by 56 percent. Canada and Mexico are the two most important export markets for U.S.-grown tangerines, and exports to each of these countries are currently above 2021/22 levels. If current trade trends persist through the remainder of the season, per capita availability of tangerines is likely to fall below last season’s levels of 6.13 pounds.

Noncitrus Fruit Outlook

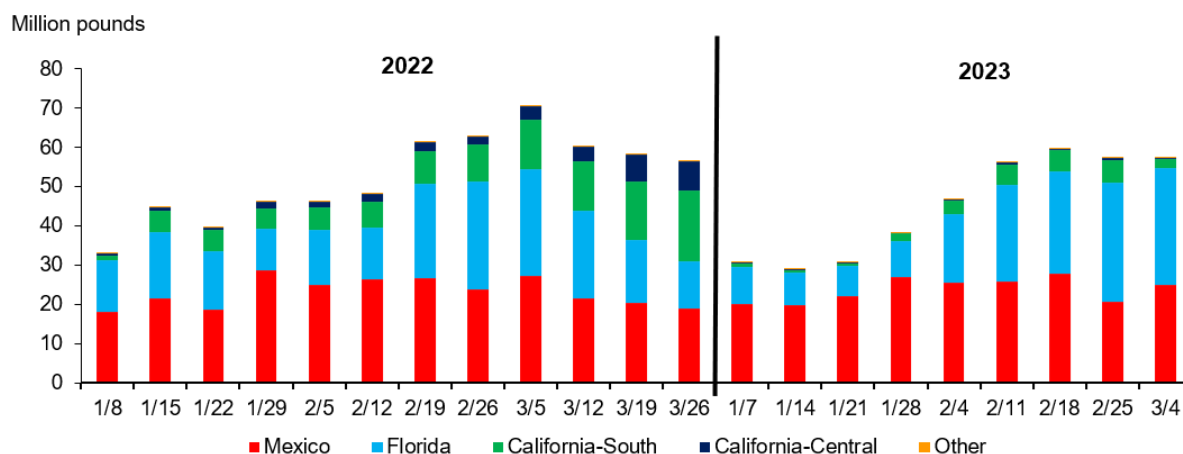
Winter Strawberry Shipments Down, Prices Up

Early 2023 strawberry supplies were reduced 9 percent by cool, wet weather in both Florida and California. During the winter season (January–March), Mexico and Florida account for about 90 percent of U.S. market volume, with the south coast of California filling in the remainder.

Florida’s crop, based largely in the area surrounding Tampa Bay, was slowed by early winter cold snaps and delayed planting due to Hurricane Ian. Mexico, which exports fresh-market strawberries to the United States year-round, shares the market with Florida through April and then largely competes with California into November.

According to USDA’s *Market News*, fresh strawberry shipments from Mexico accounted for 53 percent of national volume over the first 2 months (9 weeks ending on March 4, 2023.) (figure 5). Volume from Mexico was down fractionally from a year earlier at 21.3 million pounds.

Figure 5
Fresh strawberry weekly shipments, 2022 and 2023



Source: USDA, Economic Research Service based on data from USDA, Agricultural Marketing Service, *Market News*, Movement data.

- Florida accounted for 40 percent of fresh strawberry market volume during the first 9 weeks of 2023. Although volume slumped in January due largely to cool, wet weather, the State’s recovering volume in February pushed shipments through March 4 up 1 percent from a year earlier.
- California’s South Coast accounted for 6 percent of fresh strawberry volume through March 4 with heavy rains reducing volume 56 percent from a year earlier. Frequent heavy rainstorms again drenched coastal California strawberry regions in late February and into March affecting fruit quality, volume, and harvest. Although California accounts

for a minor share of the winter strawberry market, a 61 percent reduction in the State's shipments coincided with the weather-slowed start for Florida's dominant winter crop, leading to higher early winter shipping-point prices.

- U.S. strawberry free-on-board (f.o.b.) shipping-point prices averaged \$2.99 per pound in January 2023, up 29 percent from a year earlier. According to USDA's *Market News*, fresh strawberry prices largely remained above a year earlier through February and into March as California farms struggled to overcome the impact of cool, wet weather.

California Strawberry Acres Up in 2023: Based on the annual acreage survey conducted by the California Strawberry Commission, total California strawberry acreage in 2023 is estimated up 2 percent from last year at 41,570 acres, with 5,247 acres (13 percent) designated for organic production. California, by far the largest domestic source of strawberries (61 percent of national acreage according to the 2017 Agricultural Census), earmarked about three-fourths of 2023 acreage for harvest during the peak late-spring through summer period. Some California growers reported crop damage due to extended periods of heavy rain associated with several atmospheric river events in January and March. Due to the impact on the crop from these damaging weather events, spring season shipments may be slow to reach normal seasonal volumes. As a result, fresh strawberry price variability is expected to be greater than average from April through early May.

During 2019–21, California averaged 2.29 billion pounds of strawberries annually for fresh and processing uses. To keep pace with domestic demand, California's area and production have trended higher. Although production is year-round, California's primary strawberry season runs from April through November, when the Golden State (led by Monterey County) accounts for two-thirds or more of total commercial fresh-market strawberry volume. The annual Monterey County strawberry crop (mostly fresh) is valued at nearly \$1 billion, ranking second behind lettuce in the county's agricultural cash receipts.

Strawberry Imports Up, Export Volume Down in 2022: In 2022 (January–December), total imports of fresh and processed strawberry products totaled \$1.5 billion—up 2 percent from a year earlier. Exports of fresh and processed strawberry products during 2022 totaled \$540 million—up 2 percent from a year earlier.

- The value of fresh-market conventional and organic strawberry imports rose 1 percent to \$1.1 billion, with the volume up 7 percent and the average unit value falling 5 percent to \$1.91 per pound. Mexico remained the top foreign source of fresh-market strawberries, with most volume shipped during the late November through early July period.

- About 12 percent of fresh-market strawberry import volume consisted of organic berries. This was the first full year that organic strawberry imports were enumerated in U.S. trade.
- The volume (down 8 percent) and value (down 3 percent) of frozen strawberry imports declined from a year earlier in 2022. Volume from the top two foreign sources, Mexico (down 17 percent) and Chile (down 20 percent), declined while volume from Peru (up 40 percent) continued its strong upward trend. Since 2017, Mexico's dominant share of the U.S. frozen strawberry import market has been eroding, while that of Peru, Chile, Egypt, and others have increased.
- Exports of fresh-market conventional and organic strawberries rose 2 percent to \$495 million, with the volume up 7 percent and the average unit value declining 7 percent to \$1.88 per pound. Canada (up 2 percent) accounted for 71 percent of total fresh strawberry export volume in 2022, followed distantly by Mexico (18 percent), and Japan (3 percent).
- Exports of fresh organic strawberries dropped 26 percent in 2022 on reduced volume to the two leading markets for U.S. organic strawberries—Canada (down 32 percent) and Japan (down 12 percent). Volume shipped to Mexico rose 27 percent and organic now accounts for 2 percent of U.S. fresh strawberry exports to Mexico.
- Frozen strawberry exports continued their long-term slide, slipping 10 percent to 24 million pounds in 2022. Strong competition from nations such as Peru, Chile, and Turkey have caused volume to be cut nearly in half since 2017.

Fresh Apple Exports in 2022/23 Start Sluggish

Despite a 3 percent increase in the U.S. 2022 apple production forecast (USDA, NASS), a 4-percent decline in Washington State production is expected to contribute to a decline in export volumes during the 2022/23 marketing year (August–July). In the first 6 months of the marketing season (August–January), U.S. fresh apple export volume was down 12 percent compared with the same time last year.

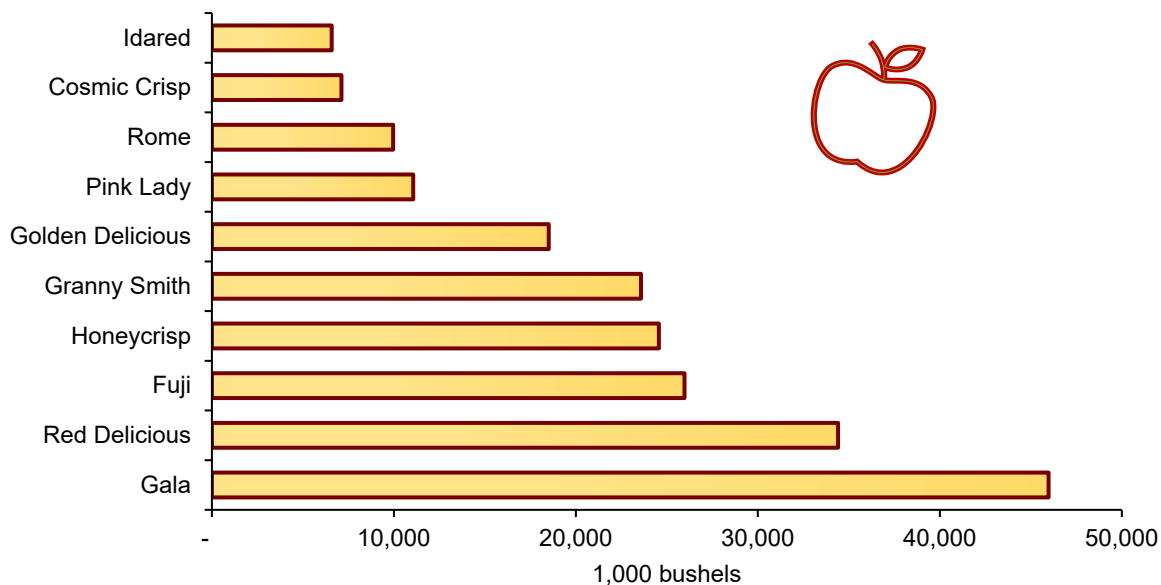
U.S. fresh apple exports are important to the U.S. apple industry, representing about 18 percent of utilized production volume each year. During the 2021/22 season, fresh apple export volume fell to its lowest level since 2007/08. A 27 percent increase in export volume to Canada, the second largest U.S. fresh apple market, was not enough to offset reductions to other trading partners, leading to an overall decline in export volume (down 7 percent to 1.59 billion pounds) in 2021/22 compared with the previous marketing year. Decreased U.S. fresh apple export

volume in 2021/22 dropped to top market Mexico, along with Central and South American trading partners like Guatemala, Colombia, and El Salvador.

Gala remains the top apple variety in 2022/23: Gala, Red Delicious, and Fuji are expected to be the top produced varieties by volume in 2022/23, accounting for about 42 percent of U.S. apple production (figure 6), the U.S. Apple Association reported. While Gala and Red Delicious have long been leading varieties, their production has declined over the last 5 years while Fuji and Granny Smith varieties have remained relatively steady.

Figure 6

Gala and Red Delicious remain top apple varieties in 2022/23F by volume



F = Forecast.

Note. 1 bushel is equivalent to 42 pounds. Top 10 varieties represent approximately 82 percent of U.S. production in 2022/23 F. Source. USDA, Economic Research Service based on data from U.S. Apple Association's *USApple Industry Outlook 2022 Report*.

More Fresh Blueberry Shipments Start 2023 Season

For more than 40 years, the U.S. blueberry market has remained on an upward trajectory fueled by rising consumer preferences molded by improved varieties, year-round availability, industry promotion, and positive nutritional messages. U.S. farm cash receipts from blueberries reached a nominal dollar \$1.1 billion in 2021, up 22 percent from the average of the previous 3 years (2018–20). In terms of farm value, blueberries are now ranked as the thirtieth most valuable U.S. farm commodity. According to the Food and Agriculture Organization of the United Nations, the United States continues to be the global leader in blueberry production, with about one-third

of global output.¹ Domestic per capita availability of both fresh and processed blueberries continues to trend higher on rising domestic output and larger imports.

USDA's National Agricultural Statistics Service will release its annual survey-based estimates of both cultivated and wild blueberry production data on May 8, 2023, in the *Noncitrus Fruits and Nuts 2022 Summary*. Until that time, the North American Blueberry Council (NABC) estimated the 2022 U.S. blueberry crop at 645.9 million pounds, down 6 percent from a year earlier.

- Fresh-market production was estimated by NABC at a record 329 million pounds, down 8 percent from its 2021 estimate. Fresh production increased in North Carolina and Florida, while fresh output declined in top producing States Washington, Oregon, Georgia, California, and Michigan.
- NABC reports that production of cultivated blueberries for processing declined by 4 percent to 286.7 million pounds in 2022 compared with the previous year. An increase in processed blueberry volume in both Washington (up 24 percent) and Oregon (up 18 percent) pushed total cultivated blueberry production in both States higher than the previous season.

Surging Market Volume Weakens Blueberry Prices: According to preliminary USDA, *Market News* information, shipment volume of fresh-market blueberries during the 2022 season rose 20 percent from a season earlier. All of the increase in market volume came from a 31-percent surge in imports as domestic (organic and conventional) movement fell 1 percent in 2022. A few key observations of market movement over the past season include:

- Domestic organic and conventional fresh blueberries accounted for 29 percent of all annual shipments during the 2022 season, down from 35 percent a season earlier.
- Import shipments continued their upward trend, climbing 31 percent and garnering 71 percent of the total fresh blueberry market in 2022.
- Powered increasingly by imports, movement of organic blueberries continues to trend higher, rising from 15 percent of total volume in 2021 to 17 percent during the 2022 season.
- In the first 2 months of 2023, total fresh blueberry shipment volume rose 11 percent compared with the same period last year. Chile accounted for half of all fresh blueberry

¹Not all countries report blueberry production data to FAO. According to the International Blueberry Organization's *Global State of the Blueberry Industry 2022 Report*, China's estimated blueberry production volume exceeded that of the United States in 2021.

shipment volume with Peru (26 percent) and Mexico (22 percent) making up most of the remainder.

According to data derived from USDA, AMS *Market News*, simple average free-on-board (f.o.b.) shipping-point prices for fresh conventional blueberries averaged \$2.68 per pound in 2022, down 3 percent from a year earlier. F.o.b. prices for organic blueberries averaged about 5 percent less than a year earlier.

- Reflecting large supplies, shipping-point prices for conventional blueberries have averaged below a year earlier since the spring quarter of 2022 and have remained below a year earlier during the 2023 winter quarter (January–March).
- Despite lower shipping-point prices, the U.S. Highbush Blueberry Council (USHBC) reported the average blueberry retail price per pound was \$4.69 in the summer quarter (July–September), up 9.2 percent from the same period in 2021.

Blueberry Trade Value Rose in 2022: During 2022, the value of total (fresh and processed) blueberry imports rose 13 percent to \$2.1 billion. The top three foreign suppliers were Peru (38 percent of value), Mexico (27 percent), and Chile (16 percent). These nations have been the top three suppliers to the United States since 2016, with Peru replacing Chile as the top exporter in 2019. The Mexican blueberry industry has also been rapidly expanding over the past decade and that country's share of the U.S. import market grew from 5 percent in 2012 to 27 percent in 2022. Like Mexico during the same period, Peru's industry and export capability has expanded rapidly with its market share rising from zero in 2012 to 38 percent in 2022, largely wresting winter market share from Chile.

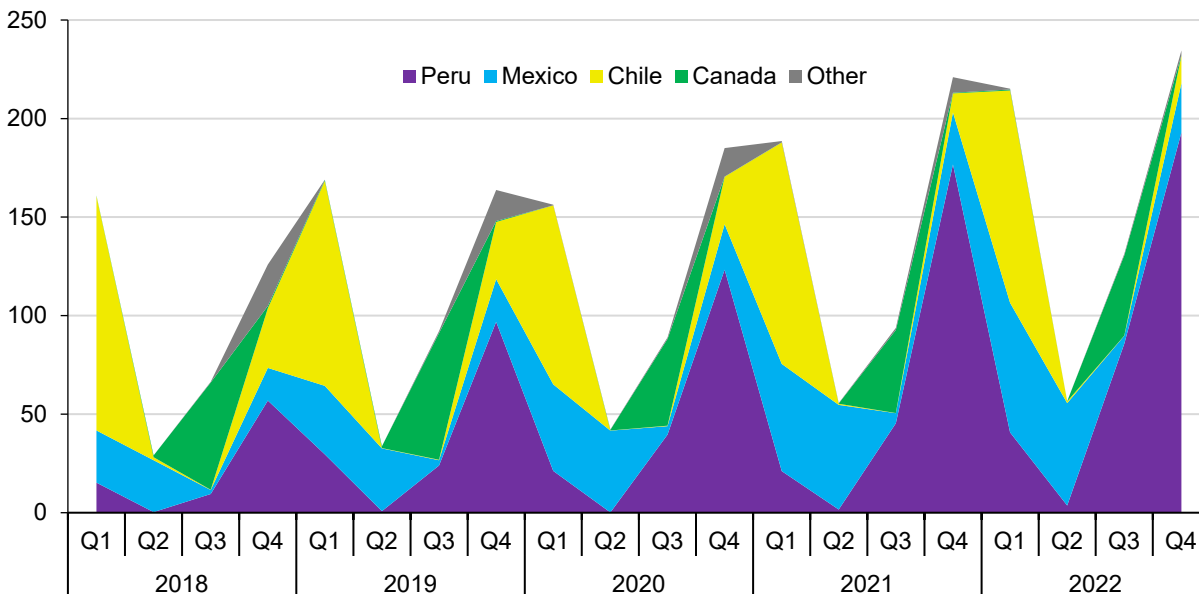
The value of fresh market blueberry imports was up 10 percent to \$1.8 billion in 2022. The volume rose 15 percent to a record 657 million pounds—47 percent above the average of the past 5 years, and 3 times greater than a decade earlier. The largest share of this volume consisted of cultivated conventional fresh-market blueberries, which rose 14 percent to 534 million pounds in 2022 compared to 2021 (figure 7).

- In 2022, fresh wild blueberry imports, largely from Canada, were up 56 percent from a year earlier to 19 million pounds. Favorable weather in eastern Canada led to a strong crop and greater fresh availability, according to industry sources. Greater fresh imports helped offset the impact of hot, dry weather on productivity of the Maine wild blueberry barrens.

Figure 7

U.S. cultivated fresh blueberry imports by country, 2018–22

Million pounds



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

- Imports of fresh market certified organic blueberries continue to trend higher, rising 14 percent to 104 million pounds in 2022, largely maintaining 2021’s 16 percent share of total U.S. fresh blueberry import volume.

On the other side of the trade ledger, U.S. exports of blueberries and blueberry products totaled \$258 million in 2022—4 percent greater than a year earlier. The top three markets remained Canada (69 percent of value), South Korea (11 percent), and Japan (6 percent). Key fresh and processed product blueberry trade during 2022 include:

- U.S. fresh-market export volume fell 31 percent in 2022 due in part to sharply higher export prices. Although fresh organic export volume was largely unchanged, cultivated exports were down 9 percent and fresh wild blueberry volume dropped 65 percent.
- Although processed blueberry export value increased 12 percent to \$128 million in 2022, higher export unit values sliced into export demand. For example, the value of frozen blueberry exports, which accounted for 79 percent of processed blueberry export value, rose 17 percent despite a 4-percent reduction in volume as export unit values jumped 21 percent to \$1.49 per pound.

California Avocado Production Forecast to Fall in 2023

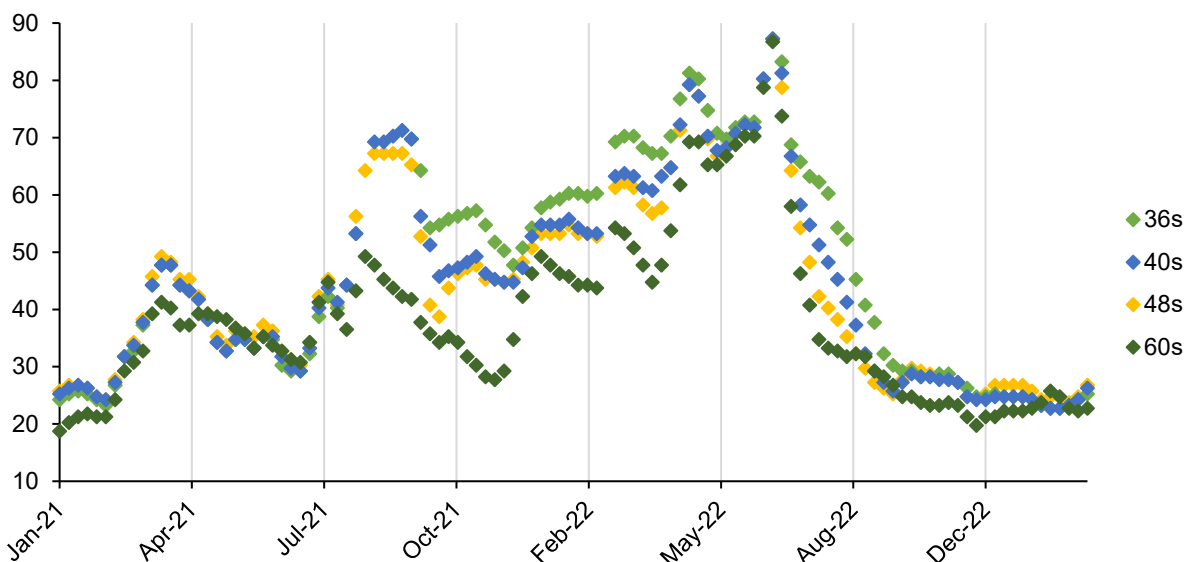
The California Avocado Commission (CAC) projects 2023 production at 257 million pounds. If realized, California avocado production would be about 5 percent lower than preliminary production estimates for 2022, following the alternate-bearing nature of the tree, where a year of higher production tends to follow a year of lower production.

2022: Last year, avocado shipments from California started earlier in the season due in part to good weather, strong pricing, and lower import volumes from Mexico. The earlier start led to a 49 percent decrease in shipment volumes at the end of the California season (July through September) in 2022 compared with the same period in 2021. Lower import shipments in the first half of 2022 put upward pressure on f.o.b. shipping-point prices, which peaked toward the end of June. In 2022, f.o.b. shipping-point prices for conventional Hass avocados in the last 2 weeks of June averaged \$75 per 2-layer cartons (size 36s–60s), more than double the average \$35 price observed during the same period in 2021. Shipping-point prices for Hass avocados (2-layer cartons) tend to be higher for larger avocados (e.g., 36s) compared to smaller avocados (e.g., 70s) where the item size number represents the approximate fruit count in a 25-pound case holding 2 layers of fruit (figure 8).

Figure 8

Free-on-board (f.o.b.) prices for Hass avocados from Mexico, January 2021–February 2023

Dollars per 2-layer carton



Note: Excludes organic f.o.b. prices.

Source: USDA, Economic Research Service based on data from USDA, Agricultural Marketing Service, *Market News*, weekly shipping-point data.

Following record-setting U.S. import volumes of fresh avocados in 2021, import volumes fell 7 percent in 2022 with lighter volumes from Mexico in the early part of the year. While fresh

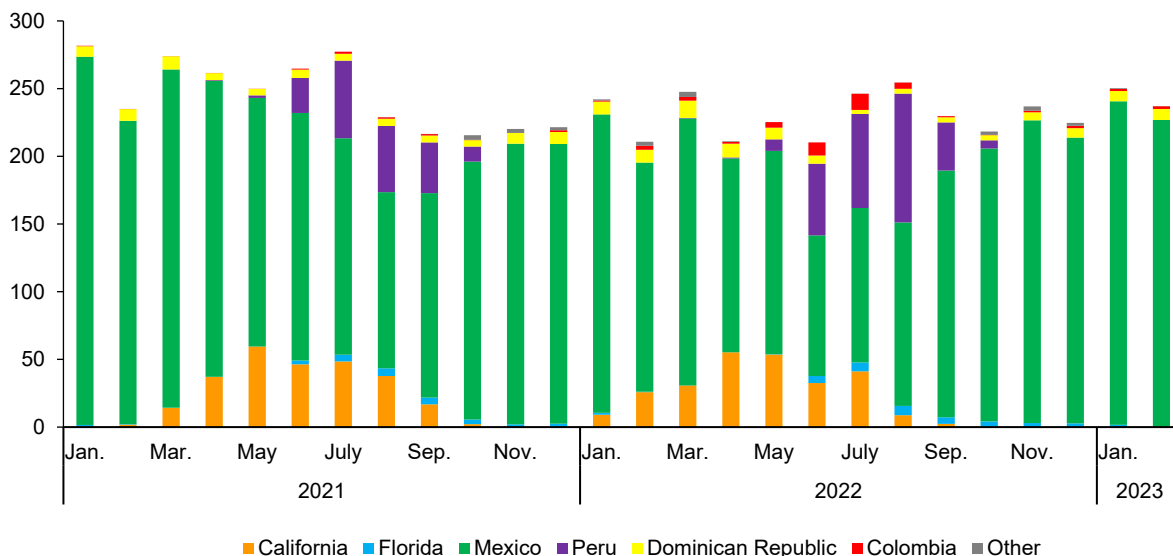
avocado import volume decreased, the value of imports jumped 8 percent in 2022 led by an increase in unit value for Hass avocados and organic Hass avocados. Higher domestic prices in the summer months encouraged an increase in imports from Peru with import volume 45 percent more in 2022 than 2021. Despite the increase in U.S. avocado imports from Peru, the European Union (led by the Netherlands and Spain) remained Peru’s largest avocado export market, accounting for almost half of annual avocado export volume in 2022.

Avocado shipments rebound in early 2023: USDA, AMS *Market News* shipment data reports avocado shipment volume was up in the first 2 months of 2023 compared with the same period last year (figure 9). Mexico accounted for 96 percent of shipment volume and no early shipment volumes were recorded from California. Leading up to the 2023 Super Bowl, f.o.b. shipping point prices for conventional Mexican Hass avocados averaged \$23.88 per 2-layer cartons (size 36s–60s), down from around \$52.50 during the same period last year. The increased import volume, due in part to a larger crop in Mexico, is expected to continue downward pressure on prices, especially compared with the prices observed last spring and summer. In 2023, if California’s production forecast is realized and total U.S. avocado imports are at or above levels reached in 2021, estimated fresh avocado per capita availability would be close to 9 pounds per person.

Figure 9

Monthly domestic and imported avocado shipments, January 2021–February 2023

Million Pounds



Source: USDA, Economic Research Service based on data from USDA, Agricultural Marketing Service, *Market News*, Movement data.

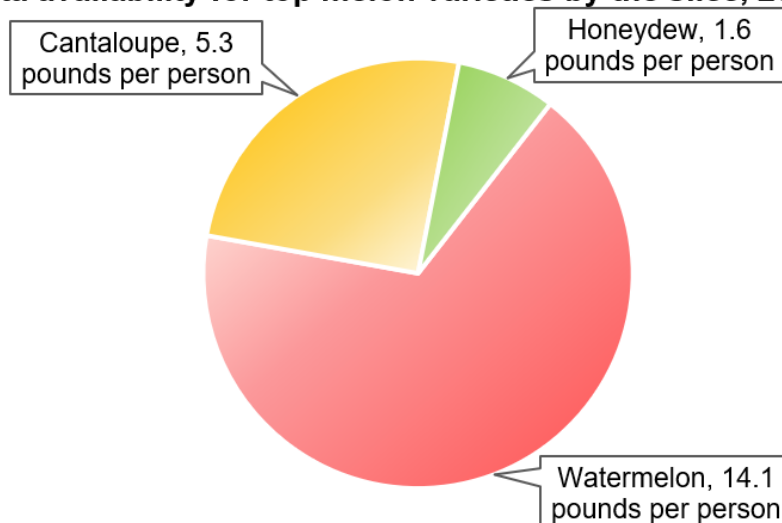
Melons Outlook

Cantaloupe and Honeydew Per Capita Availability Up in 2022

Estimated domestic availability (a proxy for consumption) of melons totaled 7.04 billion pounds in 2022, up 1.5 percent from the previous year (table 4). This estimate translates to 21.1 pounds per person, up from the 20.7 pounds in 2021 and slightly below the previous 5-year average. Increases in domestic cantaloupe and honeydew production and imports helped offset a decline in watermelon production and imports in 2022. Despite the decline, watermelon per capita availability remained more than double cantaloupe and honeydew combined (figure 10).

Figure 10

Per capita availability for top melon varieties by the slice, 2022



Source: USDA, Economic Research Service.

In 2022, the United States remained a net importer of melons, with exports very much dwarfed by the volume of imports. As total melon imports have generally risen over the past few decades, they have captured an increasing share of the U.S. fresh melon market—from an average share of less than 10 percent during the 1980s and 1990s to about 37 percent over the last 5 years. Meanwhile, following relatively steady annual melon export volume of about 600 million pounds between 2000 and 2018, export volume in 2022 fell to its lowest since 1998. In the last two decades, an average of 7 percent of U.S. supplies have been diverted away from the domestic market each year.

Table 4--U.S. melons: Supply and utilization, by type and all, 2019–2022

Year	Supply			Disappearance			Trade share of:	
	Utilized production ¹	Imports ²	Total supply	Exports ²	Domestic availability	Per capita availability	Availability imported	Supply exported
	-- Million pounds --				--Pounds--		-- Percent --	
Cantaloupe³								
2019	1,130	873	2,003	131	1,872	5.7	46.6	6.5
2020	1,122	753	1,875	105	1,770	5.4	42.6	5.6
2021	1,003	762	1,765	103	1,662	5.0	45.8	5.8
2022	1,073	786	1,860	90	1,770	5.3	44.4	4.8
Honeydew⁴								
2019	260	353	613	63	550	1.7	64.1	10.2
2020	220	348	567	69	499	1.5	69.7	12.1
2021	163	357	520	66	454	1.4	78.6	12.7
2022	183	407	590	65	525	1.6	77.5	11.0
Watermelon								
2019	3,579	1,729	5,308	322	4,986	15.2	34.7	6.1
2020	3,439	1,658	5,097	360	4,737	14.4	35.0	7.1
2021	3,339	1,788	5,127	376	4,750	14.3	37.6	7.3
2022	3,277	1,766	5,043	328	4,716	14.1	37.5	6.5
All Melons								
2019	4,969	3,032	8,001	528	7,473	22.8	40.6	6.6
2020	4,781	2,788	7,569	539	7,030	21.3	39.7	7.1
2021	4,505	2,923	7,429	548	6,881	20.7	42.5	7.4
2022	4,533	2,987	7,520	485	7,036	21.1	42.5	6.4

¹Source: USDA, National Agricultural Statistics Service.

²Source: U.S. Department of Commerce, Bureau of the Census.

³NASS survey data from 2019 to 2022 includes: Arizona, California, Florida, Georgia.

⁴Honeydews do not have a separate tariff code. USDA, Agricultural Marketing Service import shipment data was used to estimate the portion of import honeydew and "other" melons for 2019–2022.

Source: USDA, Economic Research Service.

Watermelons: In the eight USDA, NASS surveyed States, total watermelon utilized production volume fell 2 percent in 2022 compared with the previous year. Tighter domestic supplies, lower seeded watermelon import volume, and inflation contributed to a 30 percent increase in the season average price compared with 2021. The 2022 watermelon season average price of \$22.80 per hundredweight (cwt) set a record high in both real and nominal terms.

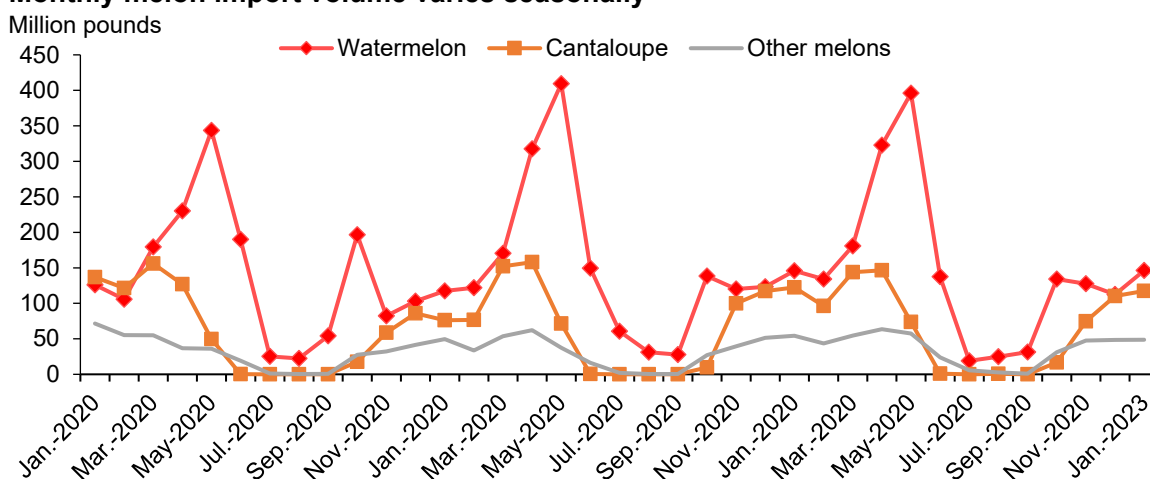
Planted acres dropped 5 percent (down 4,600 acres) in 2022 compared with 2021 as acreage declined in Florida, Indiana, North Carolina, South Carolina, and Texas. In Florida, the largest watermelon producing State, a combination of decreased planted acreage and lower yields related to drier weather reduced utilized production by 10 percent compared with the previous

season. California and North Carolina’s good growing seasons led to a 21 percent increase in production in each State from the previous year, but it was not enough to offset the notable declines in Florida and Texas.

Partly influenced by lower availability and higher prices, U.S. watermelon exports experienced a 13-percent reduction from the previous year while export value fell by 4 percent to \$93 million in 2022. Exports to several markets were down, particularly to Canada which received nearly all of the volume. U.S. imports of watermelon in 2022 fell 1 percent below volumes in 2021. Along with cantaloupe and other melons, watermelon imports tend to increase in January through May, ahead of the domestic season (figure 11).

Figure 11

Monthly melon import volume varies seasonally



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

At the start of 2023, AMS cumulative shipment volume was up 13 percent through the end of February from the same time a year ago. Almost 70 percent of import shipments to date were from Mexico; overall volumes were up slightly from the same time last year, but seedless-type volumes registered higher. Season-to-date shipments of watermelons, in general, were also running lower from other suppliers such as Guatemala, Honduras, and Brazil. In the first week of March 2023, f.o.b. prices for red flesh seedless watermelons from Mexico (24-inch bins, approximately 35 count) were similar to prices observed during the same period last year.

Cantaloupe: In 2022, total U.S. utilized production increased by 7 percent from the previous year. California, the largest producing State, experienced better growing conditions in 2022 that helped increase yields by 7 percent compared with 2021, despite a challenging irrigation water situation. Although utilized production and import volume were up, higher input costs (labor, water, transportation, etc.) contributed to a 15 percent increase in the season average price

compared with 2021. The 2022 cantaloupe season average price of \$30.30 per cwt set a nominal dollar record high with 1974 retaining the record high price of \$36.60 in real terms.

U.S. fresh cantaloupe imports in 2022 increased 3 percent from the previous year, as Costa Rica rebounded from a 2021 export season negatively impacted by Hurricane Eta and Tropical Storm Iota. Guatemala and Honduras remained the top two cantaloupe suppliers to the U.S. market, accounting for 64 percent and 21 percent of import volume in 2022, respectively. Annual average U.S. import volume of fresh cantaloupe in the last 3 years has trended lower than volumes observed from 1997 to 2019.

Export volume in 2022 (approximately 90 million pounds) marked the lowest annual volume since 1991. Compared with 2022, U.S. cantaloupe export volume decreased by 12 percent while export value remained unchanged at \$31.5 million. Canada and Mexico together accounted for 97 percent of total volume.

In January–February 2023, lower cantaloupe shipments from Guatemala and Honduras reduced import shipments by 8 percent compared with the same time last year. The lower winter shipment volumes fetched higher f.o.b. prices with mostly average prices at the end of February about 50 percent higher than in 2022, but the same as prices observed in 2021. The upward pressure on cantaloupe shipping point prices may ease as peak domestic shipment volumes from California and Arizona enter the market from May through September.

Honeydew: Area planted in California was reduced in 2022 by 8 percent, but a 22 percent increase in yield per acre led to a Statewide increase in honeydew production (up 12 percent) from the previous year. At 183 million pounds, California's 2022 utilized production was half the production volume produced in the early 2000s. Despite an increase in production from 2021 to 2022, higher input costs contributed to a slight increase (about 2 percent) in the average grower price to \$39.60 per hundredweight (cwt), surpassing 2021's nominal record high price of \$39 per cwt.

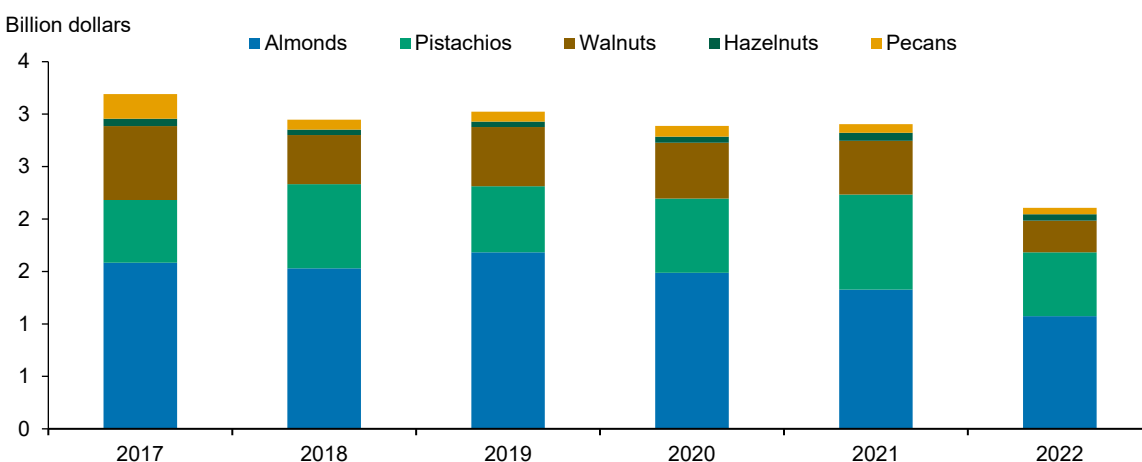
U.S. honeydew melon imports for the 2023 season through the end of February were running more than 16 percent behind volumes of a year earlier, based on USDA, AMS data. Reflecting reduced Mexican supplies, shipments were down 6 percent from a year ago through the end of February while shipments from Guatemala and Honduras were both down about 17 percent. U.S. advertised retail prices averaged \$4.08 each from January through early March, about 40 cents higher than the same period a year ago. Like the other melons, preparations are underway for the 2023 U.S. honeydew melon season, which typically starts in late spring with peak harvest in the summer months.

Tree Nuts Outlook

Tree Nut Export Value Forecast to Decline in FY2023

The U.S. export value for tree nuts is forecast to decline in fiscal year 2023 (October–September) from the previous year, according to the February 2023 USDA, ERS trade outlook. While the U.S. exports tree nuts year-round, the months following fall harvest correspond with peak export volume for almonds, walnuts, pistachios, and hazelnut products. In the first quarter of FY2023 (October–December), U.S. export value was down for all major tree nut crops, with the largest year-over-year changes observed in walnuts (down 41 percent) and pistachios (down 33 percent) (figure 12). The last time first quarter export value for almonds, pistachios, walnuts, hazelnuts, and pecans was lower than FY2023 was October–December 2010. Declines in unit value (export value divided by export volume) for almonds and walnuts, along with weaker demand from top markets in China and the European Union, contributed to lower first quarter export value. As 2023 progresses, record high beginning stocks for almonds and pistachios in the 2022/23 marketing season may put downward pressure on prices. Record-high beginning stocks may also lead to a larger percentage of annual export volume for almonds and pistachios during the summer months than is typical as the industry makes room for the 2023/24 crop.

Figure 12
U.S. export value for selected tree nuts, October–December



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

While bearing acreage for almonds, pistachios, and walnuts has more than doubled in the last 20 years to meet world demand, domestic per capita availability for tree nuts (shelled basis) has also climbed from 2.85 pounds per person in 2001/02 to 5.65 pounds per person in 2021/22.

Preliminary per capita availability for all tree nuts in 2021/22 was the second highest on record following the previous season's record high of 5.73 pounds per person.

2022/23 U.S. Pecan Production Forecast to Exceed 2021/22 Volumes

In January 2023, USDA's National Agricultural Statistic Service (NASS) reported U.S. pecan production for the 2022/23 marketing season (October–September) at 274.5 million pounds, utilized in-shell basis, down 6 percent from the October 2022 forecast of 290.5 million pounds but 8 percent above the previous year. Georgia and New Mexico remained the top pecan producing States, accounting for 74 percent of utilized production in 2022. After experiencing significant pecan production losses in the 2018 season because of Hurricane Michael, Georgia's pecan growers reported largely avoiding damage from Hurricane Ian in 2022.

Increased 2022/23 pecan production in Georgia and New Mexico made up for reductions in the three other USDA, NASS surveyed States. Production fell in Arizona (down 10 percent), Texas (down 29 percent), and Oklahoma (down 33 percent) due to a combination of an "off-year" of the crop's alternate-bearing cycle and decreased acreage. U.S. pecan bearing acreage declined slightly (down 0.7 percent) in 2022 as a reduction of 10,000 bearing acres in Texas more than offset increases in Georgia and New Mexico.

Based on USDA, NASS cold storage data as of September 30, 2022 (marking the end of the pecan 2021/22 marketing season), 2022/23 beginning stocks were 18 percent below the previous season due in part to record-setting per capita availability in 2020/21 and 2021/22. Strong domestic demand has also offset the decline in pecan exports (shelled basis), which dipped to their lowest volume in 2021/22 since the 2010/11 season. Other highlights for the 2021/22 and 2022/23 pecan season include:

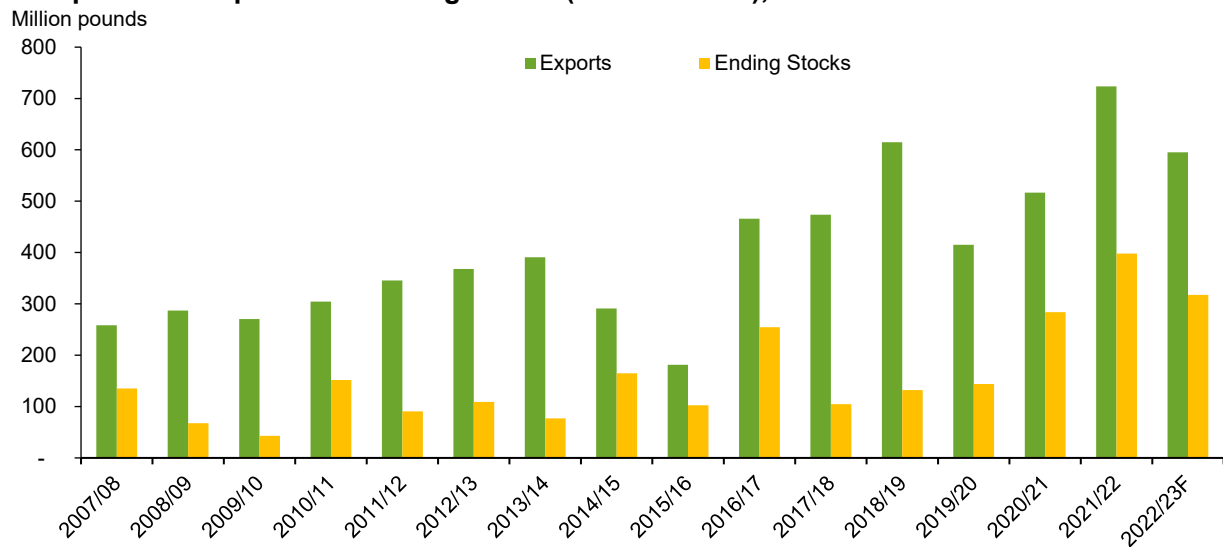
- The U.S. average grower price for pecans fell from \$2.16 per pound in 2021 to \$1.79 per pound in 2022.
- The value of utilized pecan production in 2022 was over \$492.5 million, an 11 percent decline from the previous year but above annual values reported in 2018, 2019, or 2020.
- In 2021/22, the United States remained a net importer of pecans with Mexico accounting for the majority of imports. Since pecan import volume (shelled equivalent) peaked in 2018/19, imports have declined during the last three marketing seasons.

U.S. Pistachio Exports and Ending Stocks Set Record High in 2021/22

Based on data from the Administrative Committee for Pistachios (ACP), the U.S. pistachio crop for the 2022/23 season (September–August) is forecast to decrease to 884 million pounds (in-shell basis), down 23 percent from last season’s record production. Increased bearing acreage was not enough to offset lower yields in an “off-year” of the alternate-bearing crop cycle for pistachios. ACP reports average per acre yield in 2022 was 2,057 pounds, down 27 percent from the previous year. California had approximately 18,000 more bearing acres in 2022 compared with last year’s total of 409,000 acres, plus an estimated 127,716 non-bearing acres, ACP reported.

Following a record crop in 2021/22, the season finished with ending stocks reaching a record high at more than 397 million pounds according to USDA, Foreign Agricultural Service (FAS) (figure 13). The record ending stocks in 2021/22 occurred despite the United States leading the world in pistachio exports and setting a record high export volume of pistachios in the 2021/22 season of 724 million pounds in-shell basis (328,250 metric tons).

Figure 13
U.S. pistachio exports and ending stocks (in-shell basis), 2007/08–2022/23F



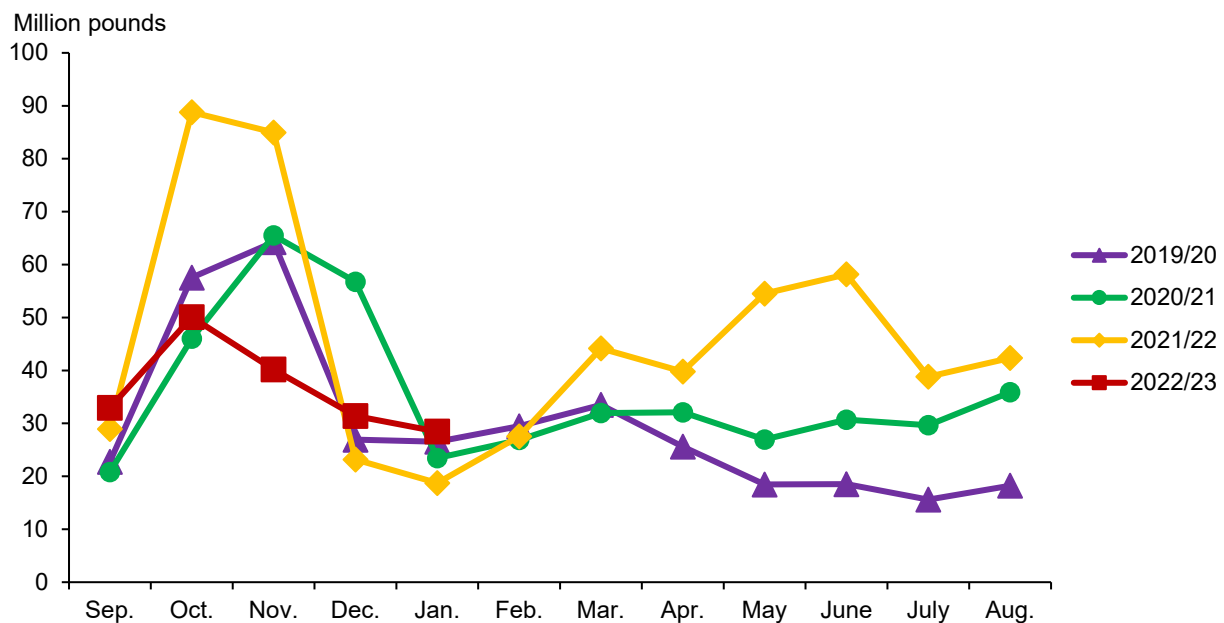
F = Forecast.
 Note: U.S. pistachio marketing year begins in September and ends in August of the following year.
 Source: USDA, Economic Research Service using data from USDA, Foreign Agricultural Service’s Production, Supply, and Distribution.

Pistachio export volume for in-shell pistachios historically peak in October and November. In the first 5 months of the 2022/23 season (September–January), export volume for in-shell pistachios was down 25 percent from the previous year (figure 14). Several factors, including a strong U.S. dollar, contributed to decreased shipments to China (down 54 percent) and the

European Union (down 22 percent). Lower export volume at the beginning of the 2022/23 marketing year is expected to result in a larger percentage of export volume later in the season as the industry makes storage room for next season's harvest. A shift in seasonal U.S. export volume patterns was observed in 2021/22 with record highs set for the months of May and June.

In 2022/23, limited competition from Iran, a major global producer and exporter of pistachios, should benefit market opportunities for U.S. pistachios, especially in markets such as China, the European Union, and Canada. The USDA, FAS forecasts Iran's pistachio production to decline for the third consecutive year in 2022/23 due to a combination of factors, including frost and drought. Despite limited competition from Iran, the USDA, FAS forecast for U.S. pistachio export volume (in-shell basis) is expected to decline by 18 percent in 2022/23 from last season's record high.

Figure 14
U.S. in-shell pistachio export volume, 2019/20–2022/23



Note: U.S. marketing year for pistachios begins in September and ends in August of the following year. Export volume for in-shell pistachio trade code 0802510000.
 Source: USDA, Economic Research Service based on data from U.S. Department of Commerce, Bureau of the Census.

Special Article

Through the Grapevine: U.S. Raisin Statistics

Catharine Weber and Skyler Simnitt

Raisins are dried grapes with a long history of production in California. Raisin production in the United States occurs almost entirely in California's Central Valley. Grapes are classified into three major groups: table-type, raisin-type, and wine-type. However, several grape varieties within each group may be destined for the fresh or processed (wine, juice, raisin) market. In the past decade, raisin-type grape bearing acreage has declined in California while table-type and wine-type grape acreage have increased. Raisin-type acreage accounted for 17 percent of California grape bearing acreage from the average of the marketing years 2019/20–2021/22 (August to July), down from 25 percent in 2009/10–2011/12. Between 2009/10–2011/12 and 2019/20–2021/22, California growers reduced raisin-type bearing acreage by more than 67,000 acres (table SA1).

Table SA1--U.S. raisin industry statistics, 2009/10–2011/12 to 2019/20–2021/22¹

	Unit	Average		Percent change
		2009/10–2011/12	2019/21–2021/22	
California raisin-type grape-bearing acreage	Acres	210,000	142,333	-32
Season average (fresh-weight basis)	Dollars per ton	338	298	-12
Raisin shipments ²	Million pounds	614	503	-18
Organic share of total shipments	Percent	4.0	7.4	86
Imports	Million pounds	43	39	-9
Exports	Million pounds	329	170	-48
Per capita availability (dry-weight basis)	Pounds per person	1.3	1.1	-15
Raisin import share of consumption	Percent	10.5	10.7	2
Raisin export share of production	Percent	47.1	34.0	-28

¹Statistics on a marketing-year basis, August to July.

²Raisin shipments as reported by the Raisin Administrative Committee. Raisins can be stored; shipments represent sales from annual production and stored raisins.

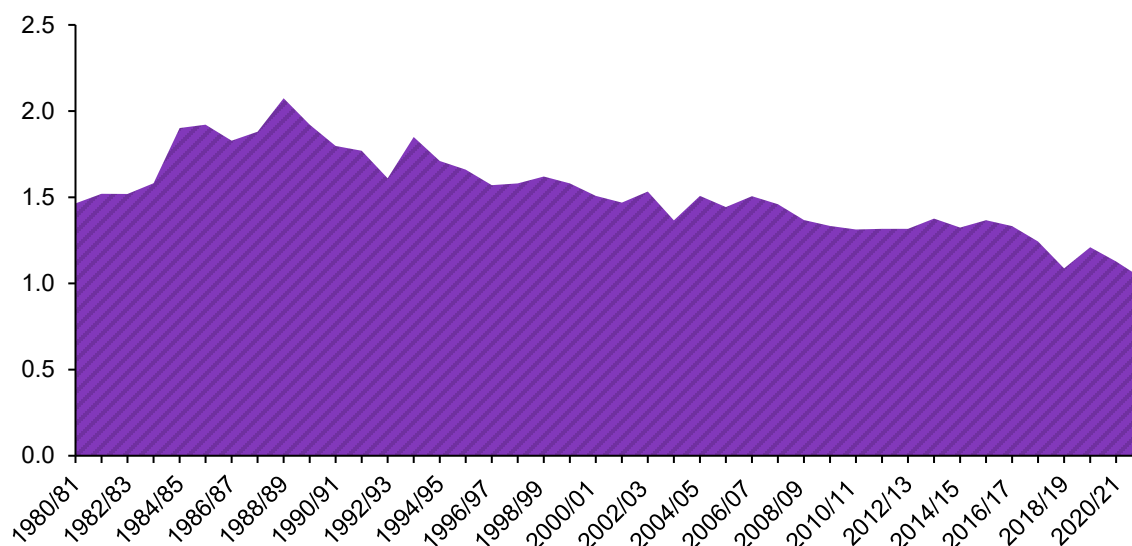
Source: USDA, Economic Research Service, *Fruit and Tree Nut Yearbook 2021*; USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts* (various issues); U.S. Department of Commerce, Bureau of the Census; Raisin Administrative Committee.

Since raisin-type grapes may not necessarily be utilized as raisins and raisin stocks may carry over into the next marketing year, USDA, ERS has historically relied on total raisin shipments reported by the Raisin Administrative Committee (RAC) to understand the volume of raisins

entering the market. When shipment data from RAC was unavailable to the public for the 2018/19–2019/20 marketing seasons, USDA, ERS discontinued its annual raisin supply and utilization table. However, RAC began publicly reporting raisin shipment volumes again in the fall of 2020. According to USDA, ERS estimates using previously unavailable RAC raisin shipment data, average per capita availability (a proxy for consumption) of dried raisins fell 15 percent in the last decade (2009/10–2011/21 to 2019/20–2021/22), continuing its gradual decline since peaking in the late 80s (figure SA1). Some of the reasons behind the decline in per capita availability include greater year-round availability of fresh fruit and competition from other dried fruit (e.g., cranberries, cherries, and blueberries). In addition, previous USDA, ERS research indicated higher labor costs and lower priced exports from Turkey put pressure on the U.S. raisin industry in recent years.²

Figure SA1
U.S. dried raisin per capita availability trends down since peaking in 1980s

Pounds per person



Note: Raisin marketing year starts in August and ends July of the following year.
 Source: USDA, Economic Research Service.

The downward trend in California’s raisin-type bearing acreage in the past 10 years has varied by variety. According to the USDA, NASS *California Grape Acreage Report*, the Thompson Seedless variety accounted for the largest percentage of bearing acres, but its share of raisin-type acreage decreased from 91 percent in 2011 to 81 percent in 2021. The Thompson Seedless variety produces a green seedless fruit and can be used for raisins, juice, wine, and table grapes. Besides its versatility, the Thompson Seedless is also popular because of its high

²See USDA, ERS Administrative Publication Number 103, “*Supplement to Adjusting to Higher Labor Costs in Selected U.S. Fresh Fruit and Vegetable Industries: Case Studies*” (July 2022) for more information.

productivity. While Thompson Seedless acreage has declined between 2011 and 2021, bearing acreage for both Fiesta and Selma Pete varieties have increased by 29 percent and 122 percent, respectively. In 2021, the Fiesta variety represented 12 percent of raisin-type bearing acreage, followed by Selma Pete at 5 percent. The benefit of the Fiesta variety is earlier ripening compared to the Thompson Seedless, which helps extend the fruit picking period and mitigates risk from early rainfall. Selma Pete is also an earlier maturing variety and is suitable for making dry-on-vine (DOV) raisins on an open-gable trellis. In the USDA, NASS 2021 *California Raisin Grape Mechanical Harvest Report*, the Selma Pete variety claimed the highest percentage of mechanically harvested acres by raisin-type grape variety at 64 percent (4,321 out of 6,706 acres). While the Thompson Seedless variety claimed the largest total raisin-type grape acreage using mechanical harvest methods in 2021 at 28,582 acres, it represented only 26 percent of its total acreage.

Along with an overall decrease in acreage and domestic production, the United States has reduced total export volume and the share of domestic production going to exports. In 2021/22, the U.S. raisin export volume tallied its lowest level since the mid-80s. Despite the decline, the United States remained a net exporter of raisins and continues to rank among the top three countries in global raisin export volume along with Turkey and Iran.

Suggested Citation

Weber, Catharine, Skyler Simnitt, Gary Lucier, and Wilma V. Davis, *Fruit and Tree Nuts Outlook: March 2023*, FTS-376, U.S. Department of Agriculture, Economic Research Service, March 30, 2023

Use of commercial and trade names does not imply approval or constitute endorsement by USDA.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.