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Fruit and Tree Nuts Outlook: September 2024

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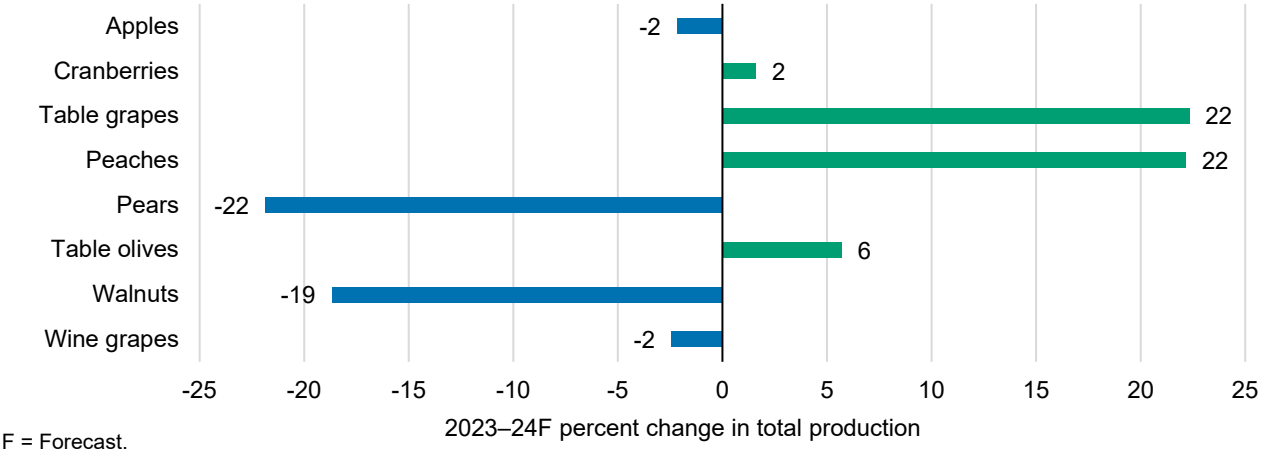
In this report:

Beating the Heat: Larger Table Grape and Peach Production Forecast in 2024

USDA's National Agricultural Statistics Service (NASS) 2024 production forecast is down for apples, pears, walnuts, and wine grapes but up for cranberries, table grapes, peaches, and table olives. In 2024, California's table grape production is expected to be bigger than last season's crop that was negatively affected by remnants of late summer tropical storm systems. Peaches in 2024 are also forecast up with production levels in the Southeast recovering from a previous season marred by spring freeze events. California walnut production is forecast 19 percent lower in 2024 following a record high walnut crop in 2023. Lower walnut yields are expected in 2024 due in part to a warm winter followed by extreme summer heat.

Year-to-year production changes for selected fruit and tree nuts, 2023–24F



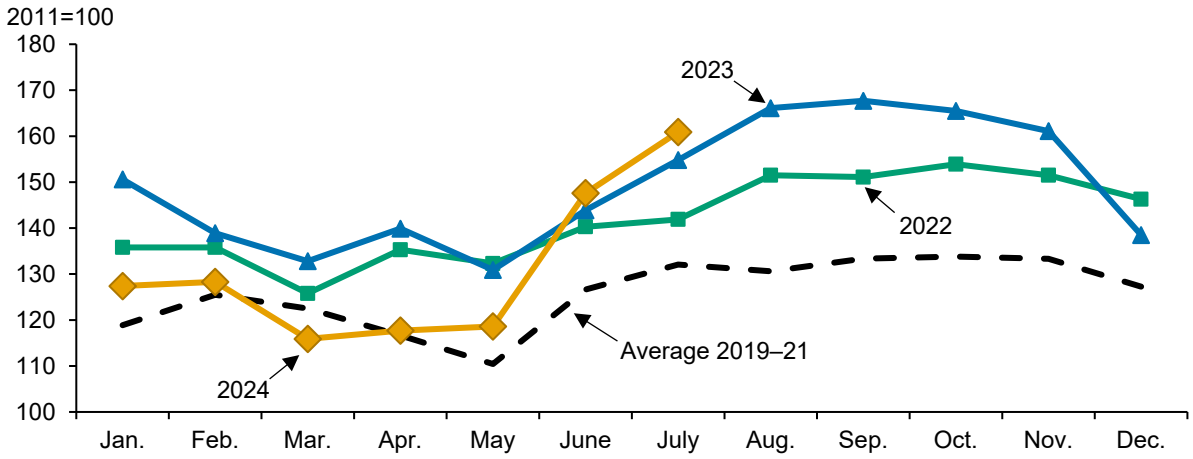
F = Forecast.
Note: Table grape forecast represents California production. Wine grape forecast includes California and Washington.
Source: USDA, Economic Research Service based on data from the USDA, National Agricultural Statistics Service, *Crop Production* (August and September 2024 issues) and *2024 California Table Olive Probability Survey Report.*

Price Outlook

Fruit and Tree Nut Grower Prices Lower in Early 2024

After starting below 2022 and 2023 levels early in the year, the fruit and tree nut grower price index rose in June and July. The July 2024 index of prices received by growers for fruit and tree nuts was 160.9 (2011=100), 4 percent higher than last year and 13 percent higher than 2 years ago (figure 1).

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



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

USDA, NASS does not report monthly grower prices for specific tree nuts, but average prices fell over the last decade. Between 2014 and 2022, nominal almond, walnut, and hazelnut prices fell by 65, 82, and 64 percent, respectively. In part, these decreases were due to steadily increasing domestic production, a heavy reliance on export markets, and a strong dollar. In recent years, however, signs indicate that domestic nut markets may be turning a corner. Nominal almond, walnut, and hazelnut prices increased by 17, 40, and 4 percent, respectively, from 2022 to 2023. Estimates of average prices received during the 2024 NASS marketing seasons will not be published until May 2025, but increases in nut exports, slowdowns in new acres planted, and the September 2024 interest rate cut by the Federal Reserve (which will weaken the U.S. dollar) are expected to put upward pressure on nut prices through 2024 into 2025.

Factors driving changes in average monthly grower prices for the selected fresh-market fruits listed in table 1 are as follows:

- Apple grower prices continue to lag behind last season. The U.S. Apple Association reported total fresh-market apple volume in storage as of June 1, 2024, was 24 percent higher than last June's total and 39 percent above the 5-year average. While apple prices decreased this summer, a smaller than average pear crop contributed to higher year-over-year June and July grower prices (up 25 and 16 percent, respectively).
- Fresh peach prices were lower in June and July 2024 than in the same months last year due to production increases in the Southeast and in California.
- Lower weekly strawberry shipment volume out of California from mid-June to early July likely put upward pressure on grower prices compared to a year prior. Similarly, early season grape prices were higher than last year. California strawberry and table grape production is expected to be larger this year, likely putting downward pressure on grower prices as the season progresses.
- Fresh orange prices were up this season averaging $21.69 a box from November 2023–July 2024, albeit prices fluctuated considerably over the period. This increase over last year reflects a smaller fresh orange crop. The price for a box of fresh oranges in July 2024 reached $27.13, up more than $9.00 from the preceding year.

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

	June		July		Year-to-year change	
Commodity	2023	2024	2023	2024	June	July
	Dollars per box				*Percent*	
Citrus fruit:[1]						
Grapefruit, all	16.26	10.94	14.39	8.80	-32.7	-38.8
Lemons, all	16.08	22.42	17.33	22.16	39.4	27.9
Lemons, fresh	27.23	32.47	28.53	31.37	19.2	10.0
Oranges, all	14.67	14.45	14.03	20.82	-1.5	48.4
Oranges, fresh	20.92	19.49	17.69	27.13	-6.8	53.4
	Dollars per pound					
Noncitrus fruit:[2]						
Apples, fresh	0.838	0.674	0.863	0.655	-19.6	-24.1
Grapes, fresh	1.515	1.645	1.365	1.475	8.6	8.1
Peaches, fresh	1.280	0.870	1.210	0.900	-32.0	-25.6
Pears, fresh	0.690	0.860	0.740	0.855	24.6	15.5
Strawberries, fresh	1.200	1.600	1.490	1.880	33.3	26.2

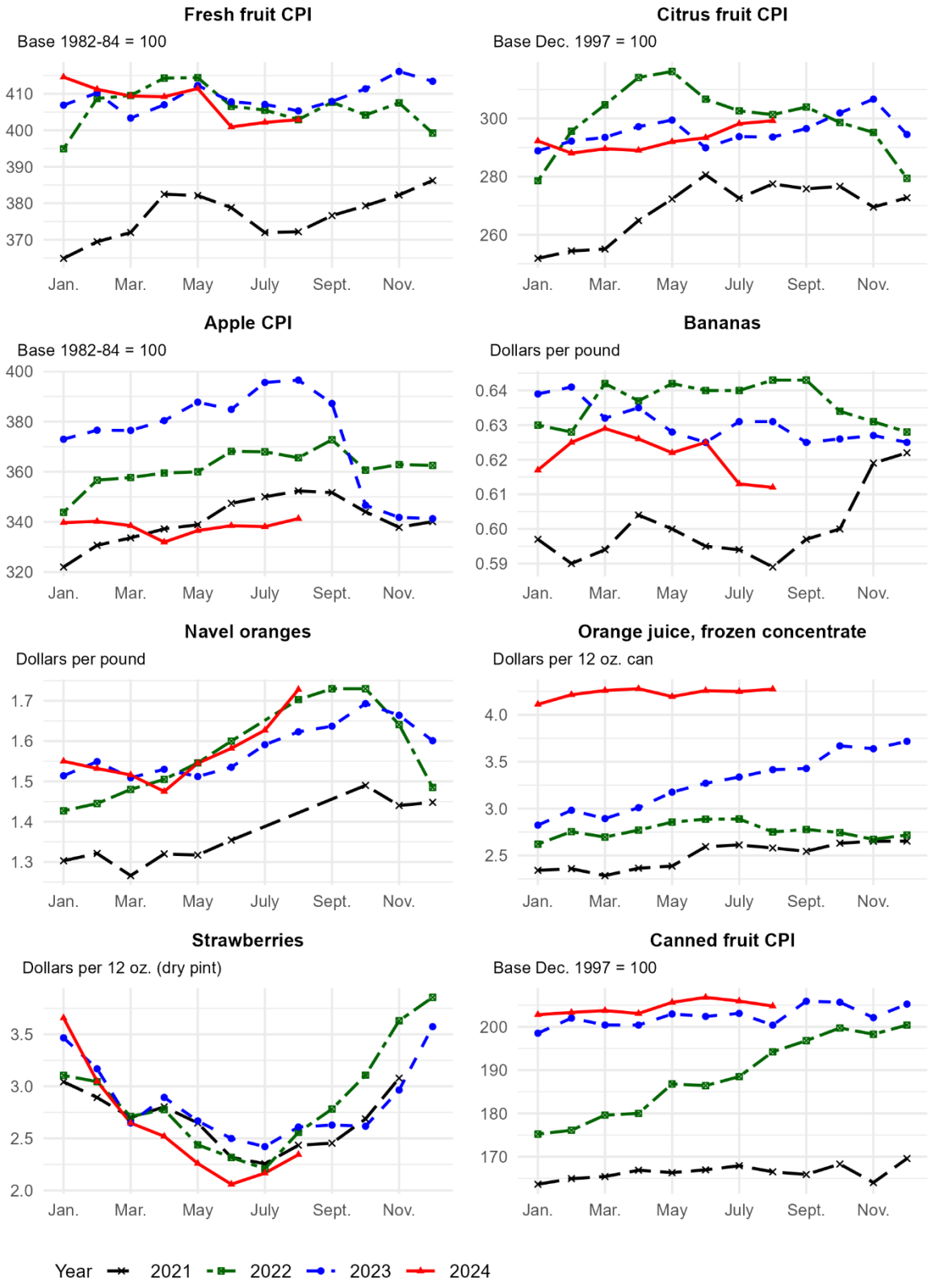
[1]Equivalent on-tree price.
[2]All monthly grower price estimates for the noncitrus fruits are derived exclusively from data provided by the USDA, Agricultural Marketing Service (AMS) and reflect free-on-board shipping point basis.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Agricultural Prices.*

Fresh fruit retail prices lower in summer 2024: The Consumer Price Index (CPI) for fresh fruit was 402.9 (1982–84=100) in August 2024, down slightly (0.6 percent) from August 2023 (figure 2). Apples and bananas are two of the most heavily weighted prices in the fresh fruit CPI, together accounting for about 27 percent of the index—about the same as all citrus fruit (28 percent). Lower year-over-year apple and banana retail prices in June through August 2024 offset an increase in the citrus fruit CPI. Other highlights for U.S. retail prices based on data from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) include:

- The apple CPI reflects the average change in apple retail prices over time. The apple CPI was down 13 percent in August 2024. Higher volumes of fresh apples in storage continued to put downward pressure on consumer prices ahead of this season's fall harvest.
- From January to August 2024, average retail prices for fresh bananas were lower year-over-year each month with the exception of June. Banana prices gradually increased throughout 2020 and 2021 and peaked in August and September of 2022 at 64.3 cents per pound. In the first 8 months of 2024, combined banana shipment volume from the top three major suppliers (Guatemala, Ecuador, and Costa Rica) was up 1 percent based on data from USDA, Agricultural Marketing Service, *Market News*.
- BLS data show the average retail price for strawberries was lower than a year prior for each month from February 2024 to August 2024. Average retail prices in August 2024 were $2.34 per 12-ounce pint, down from $2.61 in August 2023. Year-to-date strawberry shipment volumes from California were up 14 percent through the first week of September.
- The overall smaller supply of fresh oranges increased prices. August 2024 retail prices for navel oranges were $1.72 per pound, a 6 percent increase from August 2023.
- Prices for frozen concentrated orange juice are up 25 percent compared to last year. While total U.S. orange juice production is 22 percent higher this season, ending stocks reached their lowest levels in at least 50 years. In addition, several years of lackluster orange crops in Brazil put upward pressure on frozen concentrated orange juice prices.
- In the August 2024 USDA, ERS *Food Price Outlook*, the 2024 CPI for processed fruit and vegetables was forecast 1.8 percent higher than in 2023. In 2024, the canned fruit CPI largely mirrored the processed fruit and vegetable CPI. In August 2024, the canned fruit CPI was 2 percent higher than last year and 5 percent above the same month 2 years ago.

Figure 2

U.S. monthly retail prices for selected fruit, 2021–24



CPI = Consumer Price Index.

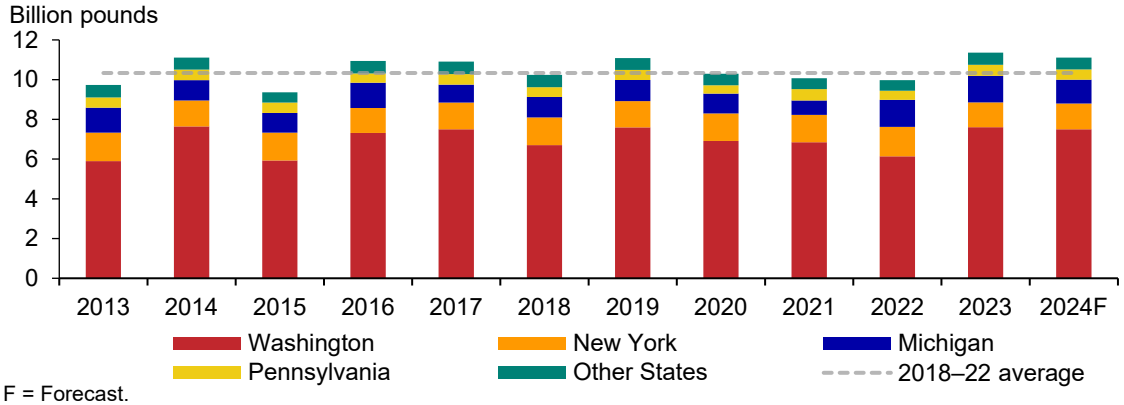
Source: USDA, Economic Research Service based on data from U.S. Department of Labor, Bureau of Labor Statistics.

Noncitrus Fruit Outlook

U.S. Apple Crop Forecast Above Average in 2024

The 2024 U.S. apple crop is forecast at 11.1 billion pounds, down 2 percent from last year, the USDA, NASS *Crop Production* reported in August. While lower year-over-year production in 2024 is expected, the current forecast is still 8 percent larger than the previous 5-year average (2018–22) based on seven NASS-surveyed States (figure 3).

Figure 3
2024 U.S. apple production down slightly based on seven surveyed States



F = Forecast.
Note: Total production based on 7 NASS-surveyed States. Other States include Virginia, California, and Oregon.
Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service.

In **Washington**, the largest apple producing State, the crop is forecast to be 7.5 billion pounds, 1 percent lower (110 million pounds) than last year, but 22 percent higher than Washington's 2022 apple crop. In August 2024, the Washington State Tree Fruit Association described fruit quality as high this season and estimated that organic apples would account for 16 percent of the State's fresh market production. On average, about 80 percent of Washington apples go to the fresh market. This fresh market share is higher than each of the next three apple producing States (New York, Michigan, and Pennsylvania) which had an average fresh market share closer to 50 percent in recent years. In marketing year (MY) 2024/25 (August–July), the top three apple varieties in Washington (Gala, Granny Smith, and Red Delicious) are expected to account for 46 percent of total volume according to US Apple.

In **New York**, 2024 apple production is forecast to rebound 4 percent year-over-year, ranking second in apple production behind Washington with 1.3 billion pounds. Unlike last season's crop that was negatively impacted by a mid-May freeze, USDA, NASS crop conditions were rated 83 percent good-to-excellent in early September. This is double the 5-year average for that period and almost three times higher than last season. In MY 2024/25, the top three apple varieties in

New York (McIntosh, Gala, and Idared) are expected to account for 30 percent of total volume, US Apple reported.

The 2024 USDA, NASS production forecast in **Michigan** is 1.2 billion pounds following two seasons with record high production exceeding 1.3 billion pounds. If realized, the smaller year-over-year production in 2024 would still be 29 percent higher than the 2019–21 annual average and rank as Michigan's fifth largest apple crop on record. The larger Michigan apple volume in recent years is partly attributable to an acreage increase with high-density planting varieties. In MY 2024/25, US Apple expects Michigan's top three varieties (Gala, Honeycrisp, and Golden Delicious) to account for 45 percent of total volume.

Pennsylvania is forecast to produce 510 million pounds of apples in 2024, which represents 5 percent of U.S. production. This year's forecast is 43 million pounds smaller (down 8 percent) compared to the 2023 crop, but overall quality is reported as high. In early September 2024, apple crop conditions in Pennsylvania were rated 80 percent good-to-excellent, slightly above the 5-year average (74 percent). In MY 2024/25, the top three apple varieties in Pennsylvania (Golden Delicious, York, and Fuji) are expected to account for 57 percent of total volume according to US Apple.

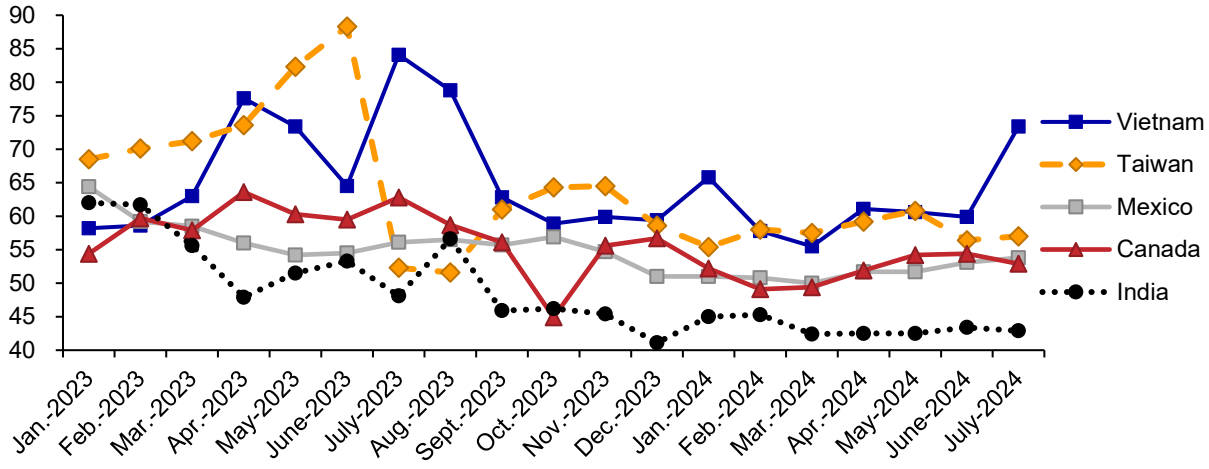
2023/24 end-of-season storage-apple supplies remained high despite increased consumption: Last year's larger apple crop led to increased storage apple volume throughout MY 2023/24. By June 1, 2024, total apple holdings (fresh and processed) were up almost 40 percent from the same time a year ago and 25 percent higher than the previous 5-year average, according to US Apple. In the 2023/24 marketing year, monthly fresh-market average grower prices reported by USDA, NASS fell 6 months in a row to reach a marketing year low in February 2024 ($0.605 per pound). The average fresh-market apple grower price in February 2024 was the lowest in nominal and real (inflation-adjusted) terms in 4 years. According to USDA, AMS free-on-board (FOB) shipping-point price data, Honeycrisp apples had a larger price decline in early 2023/24 compared to other popular varieties like Gala, Granny Smith, and Fuji. In the first 6 weeks of 2024/25, FOB prices for Honeycrisp, Granny Smith, and Fuji varieties continued to remain well below the same period last year.

Ample supplies of apples in storage and lower prices throughout MY 2023/24 supported year-over-year increases in per capita availability (a proxy for consumption), and fresh apple exports, as well as lower demand for fresh apple imports. The preliminary 2023/24 fresh apple per capita availability is 17.9 pounds per person, up 1.7 pounds from the previous season. Ranking second behind bananas in fresh fruit category, annual fresh apple per capita availability has

ranged between 15 and 21 pounds per person since the 1980s with domestic apple production accounting for more than 90 percent of total supply each season.

Fresh apple export volumes up, but export unit values down in 2023/24: In MY 2023/24, the United States exported approximately 25 percent of its fresh market apple production volume, up 4 percent from MY 2022/23. At almost 2 billion pounds, 2023/24 fresh apple export volume was 632 million pounds higher (47 percent) than 2022/23 and 9 percent higher than the previous 5-year average. However, the value of fresh apple exports in 2023/24 increased by a smaller percentage (35 percent), reflecting lower export unit values compared to last season (down 8.5 percent). Among the top five destinations for U.S. fresh apple export volume, unit values were the lowest in India (44 cents per pound) and the highest in Vietnam and Taiwan (60 cents per pound) (figure 4).

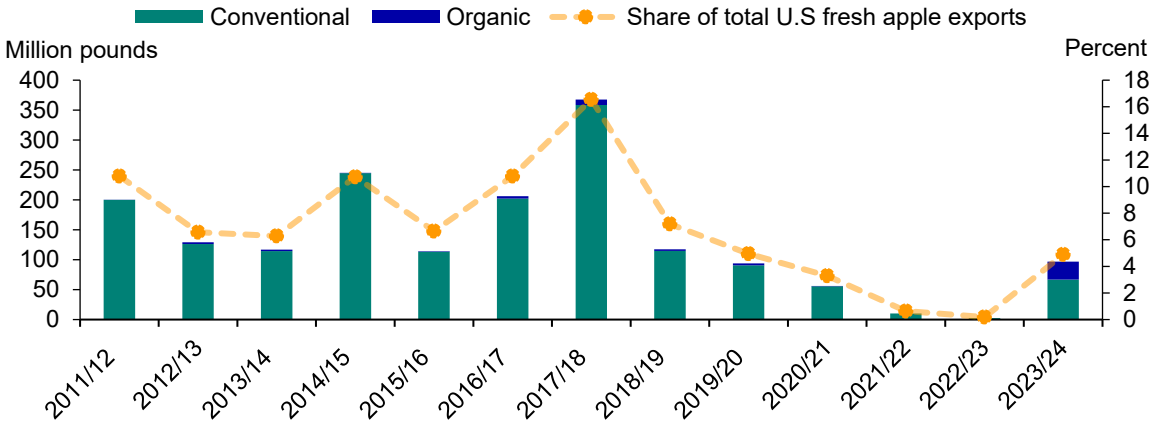
Figure 4
U.S. fresh apple monthly export unit value for selected destinations



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

Record high organic apple export volume in MY 2023/24: Organic apples represented 17 percent of total fresh export volume (328 million pounds) in 2023/24. More than 65 percent of organic apple volume (215 million pounds) went to top destination Mexico. Canada has historically ranked second in organic exports, but India became the second destination in 2023/24, representing 9 percent of volume (30 million pounds) with Canada ranking third (20.5 million pounds). Total fresh apple exports (conventional and organic) to India rose 3,725 percent year-over-year following India's removal of retaliatory tariffs on U.S. apples originally imposed in 2019 (figure 5). While 2023/24 export volumes to India were larger than the previous 4 marketing years, India's share of total U.S. fresh apple export volume (5 percent) remained below the record set before the retaliatory tariffs (17 percent in MY 2017/18).

Figure 5
2023/24 U.S. fresh apple export volume to India highest in 4 years

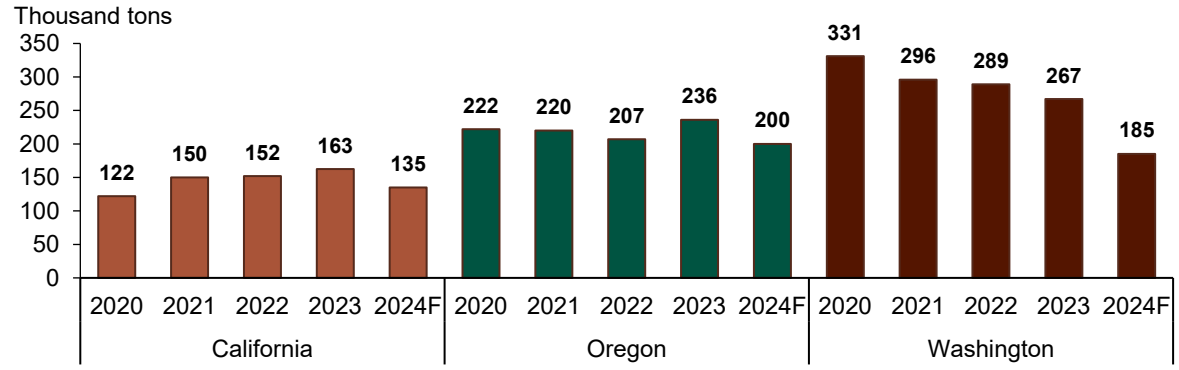


Note. Apple marketing year starts in August and ends in July of the following year.
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

Cold Weather Bites Into 2024 Pear Crop

The USDA, NASS 2024 pear forecast is 520,000 tons, down 22 percent from last year. If realized, the 2024 U.S. pear crop will be the smallest since 1967 (463,880 tons). Adverse weather conditions led to production declines in all three NASS-surveyed States (California, Oregon, and Washington) (figure 6).

Figure 6
2024 pear production forecast down in top three States

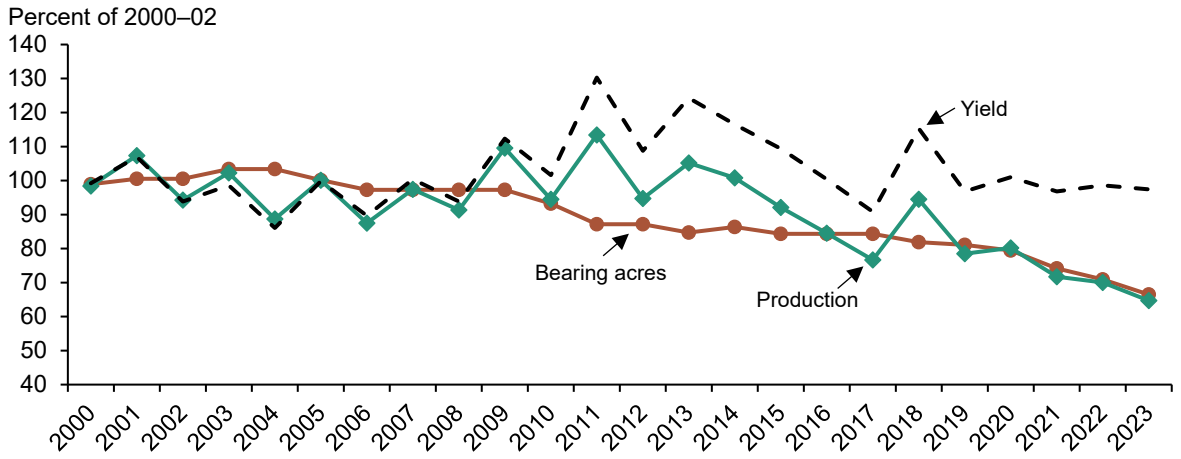


F = Forecast.
Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service.

Washington, typically the largest pear-producing State, is forecast to produce 185,000 tons this season, 15,000 tons less than Oregon. The 2024 forecast in Washington is 31 percent lower than last year and 39 percent lower than the previous 3-year average. In January 2024, Washington experienced cold weather that damaged pear buds and pear trees in key growing areas. This season would be the fourth consecutive year-over-year decline in the State and the lowest production since 1972. While yields this season were negatively affected by weather, lower production in recent seasons also reflects a downward trend in pear bearing acreage. In

2023, Washington pear bearing acreage totaled 16,400 acres, which represented two-thirds of average bearing acreage in the early 2000s (figure 7).

Figure 7
Washington pear production, bearing acres, and yield in the 21st Century



Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service.

In 2024, the pear production forecast in **Oregon** is 200,000 tons, accounting for 38 percent of U.S. production. If this forecast is realized, it would be a 15 percent reduction from 2023 and the smallest crop in Oregon since 2010. The 2024 pear production forecast for **California** is also down double digits from last season. California pear growers are expected to produce 135,000 tons in 2024, a 17 percent decline from last year as rains during bloom negatively affected pollination. On average, more than half of California's pear crop is processed (primarily as canned pears or in fruit cocktail). Processed pear volume for the 2023/24 crop was the largest in five seasons. For 2024/25, industry reports indicate processor demand is dampened due to lower consumer demand and higher canned pear inventories, which will result in a larger portion of California’s crop sold on the fresh market.

Organic pear export volume sets record in 2023/24: The United States is a net exporter of fresh pears with more than 200 million pounds exported each season since the early 1990s. During MY 2023/24 (July–June), fresh pear export volume totaled 243 million pounds. The 2023/24 export volume was 10 percent higher than the previous season but ranked third in lowest seasonal export volume since the turn of the century. Exports for fresh conventionally produced pears was up 7 percent by volume and 6 percent by value in 2023/24 compared to 2022/23. Organic fresh pear volume increased 20 percent by volume and 28 percent by value in 2023/24. At 68.5 million pounds, 2023/24 organic pear export volume was the highest on record with more than 90 percent of exports going to top destination Mexico. The share of organic export volume for fresh pears has increased in recent years, accounting for 28 percent in 2023/24, up from 11 percent a decade ago.

Grape Production Higher in 2024

The 2024 U.S. grape crop is forecast is 12.73 billion pounds. This USDA, NASS forecast includes California, Washington, and two additional States: New York and Oregon. California and Washington combined production is expected to be 12.21 billion pounds, up 3 percent year-over-year from 11.82 billion pounds.

California table and raisin grapes up, wine grapes down: California production in 2024 is forecast to be 11.6 billion pounds, up 4 percent from 11.14 billion pounds in 2023. Of California's grape crop, about 62 percent is wine-type grapes, 20 percent table-type grapes, and 18 percent raisin-type grapes. Wine-type grape production in California is forecast to be 7.2 billion pounds, a 2 percent decrease year-over-year. Table-type grape production in California is forecast to be 2.3 billion pounds in 2024, a 22 percent increase year-over-year and above the 2020–22 average. In 2023, remnants of a hurricane struck California during peak table grape harvest, pushing fresh grape production to the lowest volume since 1987. Raisin-type grape production in California is forecast to be 2.10 billion pounds in 2024, up 12 percent from 1.88 billion pounds in 2023. Raisin-type grape production in the State is half of what it was in the late 2000s as acreage has been pulled from production.

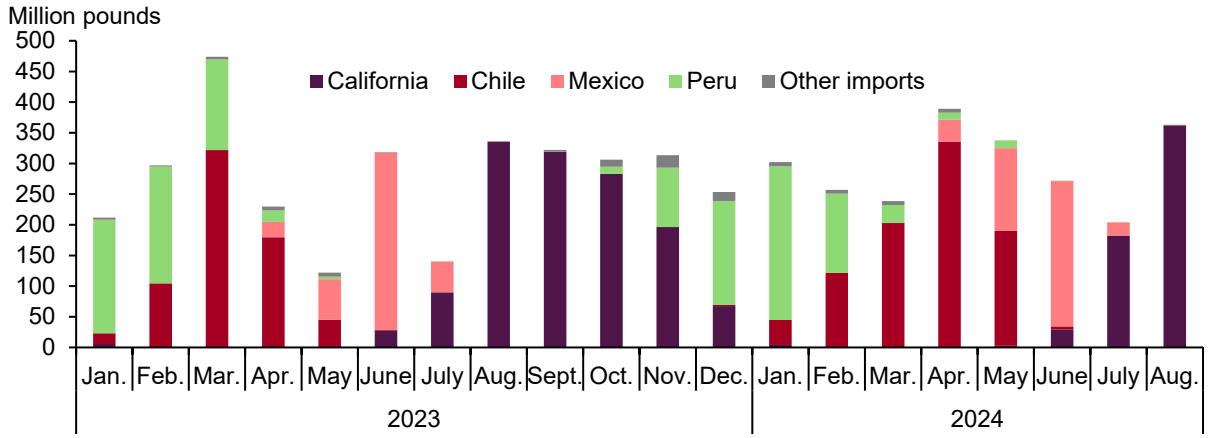
Smaller grape crop expected in Washington State: Washington production is forecast to be 610 million pounds, a 10 percent decrease from 2023 and 19 percent below the previous 5-year average (2018–22). If realized, Washington's 2024 grape crop would be the third smallest in the last two decades behind 2004 and 2021. Washington's grape production is split between wine-type grapes (51 percent) and juice-type grapes (49 percent). Similarly, grape production in both New York and Oregon historically has been concentrated in the processing market rather than the fresh market. From 2007 to 2017[1], New York grape production was almost all destined for processing (97 percent). Of this, about 70 percent was for juice and 30 percent for wine on average. Oregon's grape production was all for the processing market, specifically for wine.

Per capita availability for fresh grapes was 8.30 pounds per person in 2023/24, down from 8.63 pounds per person a year prior. Though fresh grape import volumes reached record highs in 2023/24 and exceeded domestic production for the first time, higher import volumes did not fully offset the decrease in domestic production, lowering availability. From August to November, California is the primary table grape supplier for domestic consumption (figure 8). Imports from

[1] For New York and Oregon, State-level production data is unavailable from 2018 through 2023. State level estimates are available in 2024.

Peru are available during the winter months, before transitioning to imports from Chile in the spring and Mexico in early summer.

Figure 8
Table grape shipments shift seasonally from California to imports



Note: Other imports includes shipments from the following countries: Brazil, Canada, Italy, South Africa, South Korea, and Spain.
Source: USDA, Economic Research Service based on data from USDA, Agricultural Marketing Service, *Market News*.

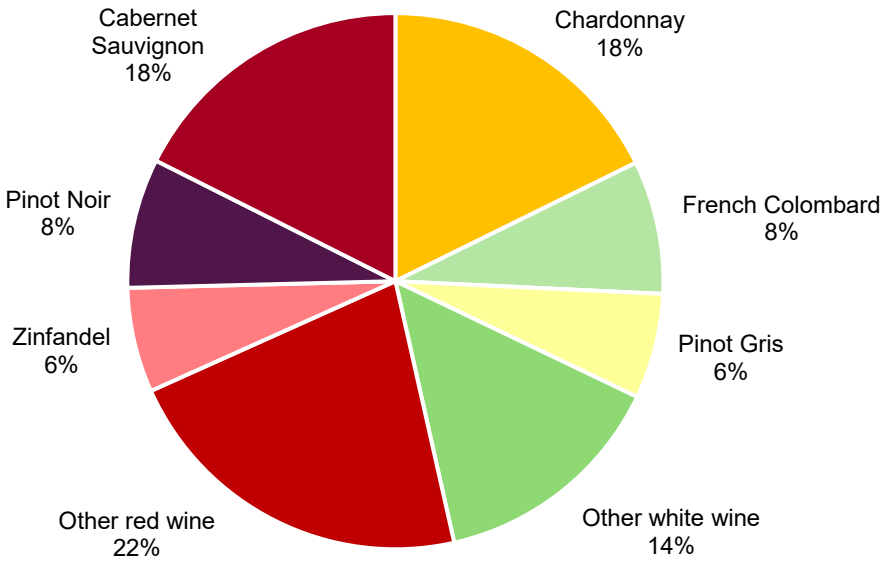
In recent years, processed grape availability was approximately 8.25 pounds per person annually (excluding wine). About 64 percent of this is dried grapes (on a fresh-weight basis). Data from the Raisin Administrative Committee[2] indicates that total raisin shipments were up 4.5 percent year-over-year in MY 2023/24 (August to July). In 2023/24, Natural Seedless varieties accounted for 88 percent of shipment volume, followed by Golden Seedless (6 percent). Unlike many of the Natural Seedless varieties, Golden Seedless grapes are mechanically processed after harvest to preserve their golden color. Import volume of dried grapes was 55.9 million pounds in 2023/24, down 15 percent from 65.4 million pounds in 2022/23.

Chardonnay and Cabernet Sauvignon remain top varietals in 2023 California grape crush: The California Department of Food and Agriculture's *Grape Crush Report* noted 3.9 million tons of grapes were crushed in California in 2023, up 6 percent from 3.67 million tons in 2022. Grapes are crushed for wine, concentrate, juice, vinegar, or brandy. Red wine varieties accounted for 1.97 million tons, up 3 percent year-over-year. Red wine varieties made up the largest share of all grapes crushed (51 percent), followed by white wine varieties (44 percent) and table and raisin grapes (6 percent). White wine varieties accounted for 1.71 million tons, up 15.5 percent from 2022. The top two varietals, Chardonnay (a white wine) and Cabernet Sauvignon (a red wine), made up more than one-third of wine grape tonnage crushed (figure 9). The top six varieties, including French Colombard, Pinot Noir, Pinot Gris, and Zinfandel,

[2] The Raisin Administrative Committee administers the raisin Federal marketing order under USDA authority. The marketing order regulates raisins produced from grapes grown in California.

accounted for almost two-thirds of wine grape crushed volume. Red wine grapes are more expensive on average than white wine grapes. Red wine grapes averaged $1,345.68 per ton (up 13 percent), while white wine grapes averaged $733.54 per ton (up 6 percent). Of these top six wine varieties crushed by volume in 2023, Cabernet Sauvignon was the most expensive per ton ($2,124.33) while French Colombard (a white wine variety) was the least expensive ($318.49). Of all wine varieties, Cabernet Franc (a red wine) was the most expensive variety at $4,544.50 per ton.

Figure 9
Share of wine grapes crushed in California by variety, 2023

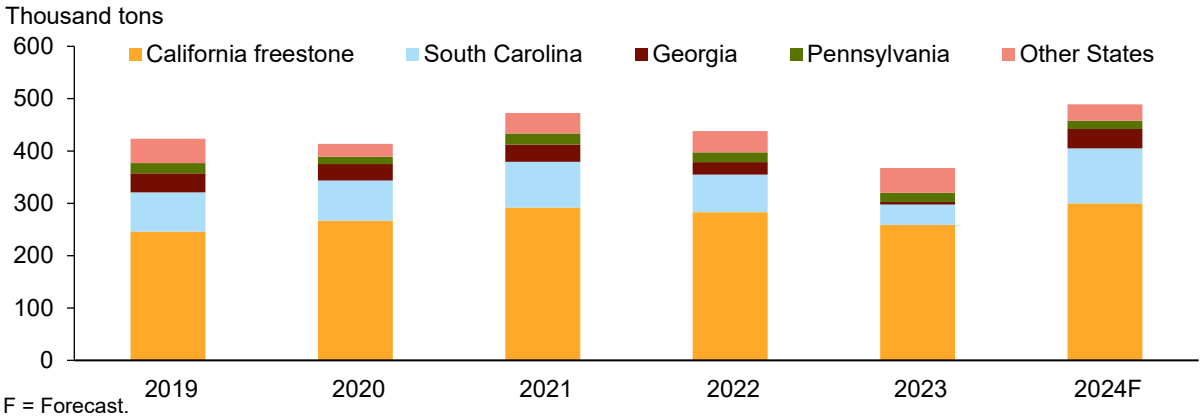


Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service and California Department of Food and Agriculture, California Grape Crush Report, Crop Year 2023.

U.S. Fresh Peach Supply Larger in 2024

The USDA, NASS August *Crop Production* forecast for U.S. peach production in 2024 is 719,000 tons, a 22 percent increase from the previous year. In California, the top peach producing State, freestone and clingstone peach production are both forecast up from the previous year (16 and 4 percent, respectively). On average about 70 percent of California freestone peaches enter the fresh market, while clingstone peaches are grown almost exclusively for the processing market. Peach crops in the other NASS-surveyed States are primarily freestone-type, grown for fresh market consumption. When all USDA, NASS surveyed States are combined with California's freestone crop forecast, estimated freestone production is 35 percent larger than last year (figure 10).

Figure 10
California freestone and Southeast peach production in 2024 boosts fresh peach supplies



F = Forecast.
Note: Excludes California clingstones. Other States include Colorado, Michigan, New Jersey, and Washington. Starting in 2024, Washington is no longer included in the USDA, NASS annual survey.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts Summary (various issues)* and *Crop Production* (August 2024).

Southeast peach production rebounds from last season: In 2024, peach production in South Carolina and Georgia is forecast well above last season's freeze damaged crop (up 171 and 651 percent, respectively). If realized, this season's crop would be the largest in South Carolina since 2010 and the largest in Georgia since 2016. Crop quality was reported as high with more than 88 percent of South Carolina's crop and 99 percent of Georgia's peaches rated in good-to-excellent condition at the end of June. By mid-August, peach harvest in both States was more than 90 percent complete.

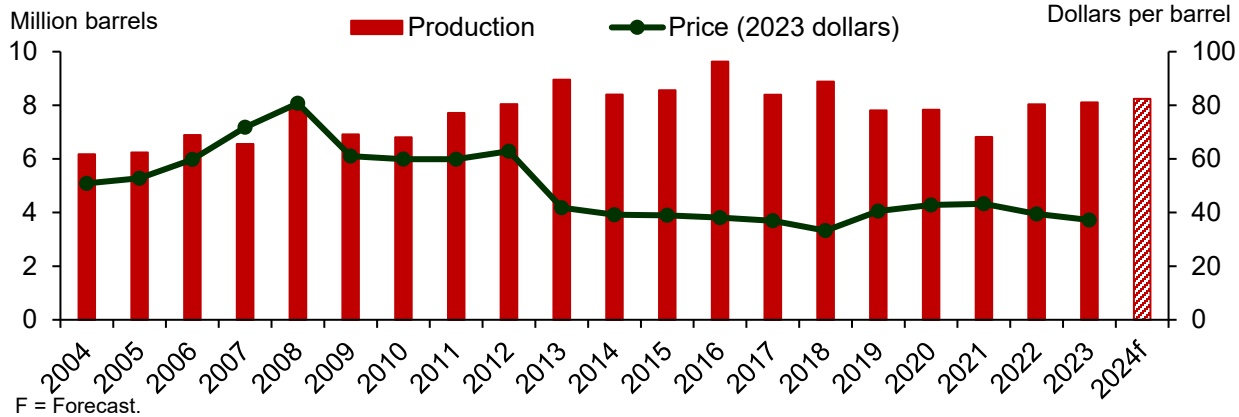
California peaches feeling the heat: California's freestone peach crop forecast is 300,000 tons this year. If realized, this would be California's largest freestone crop since 2012 and 11 percent higher than the 5-year average. While good spring weather conditions led to abundant fruit set, persistent high summer temperatures in the Central Valley have led to an increase in heat-related defects during August and September. In mid-August, California clingstone producers noted that extreme heat was likely responsible for the higher percentage of low-grade delivery volumes this season. They reported an increase in uneven fruit maturation within orchards.

Higher domestic production and lower prices contributed to increased U.S. fresh peach exports this season. Year-to-date exports (fresh peaches and nectarines) through July 2024 increased 50 percent by volume and 21 percent by value compared with the same time last year. Canada and Mexico continued to be the top export destinations, accounting for 84 percent of export volume.

Cranberry Production Up for Third Consecutive Year

The U.S. cranberry crop is forecast to be 8.24 million barrels in 2024, up 2 percent from 8.11 million barrels produced in 2023 (figure 11). A barrel of cranberries weighs 100 pounds. Lower production in Wisconsin (down 110,000 barrels) is expected to be more than offset by higher production in Massachusetts (up 230,000 barrels).

Figure 11
Cranberry total production and real grower price, 2004 to 2024F



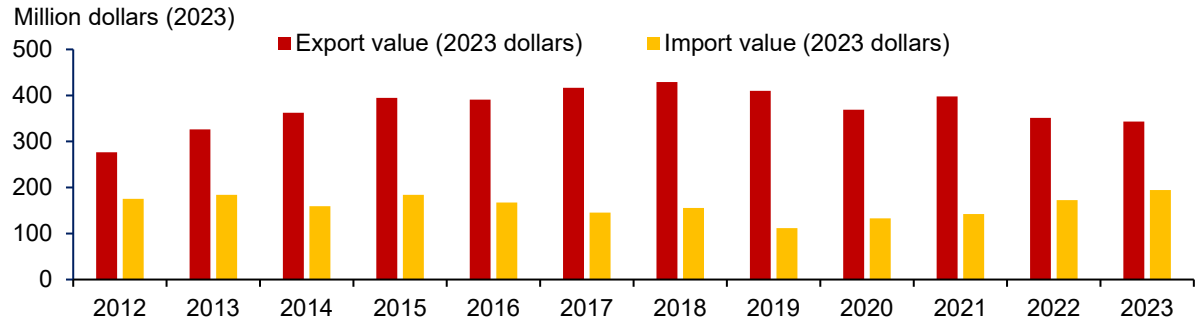
F = Forecast.
Note: A barrel weighs 100 pounds. The implicit price deflator has been rescaled such that the base year is 2023.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service and U.S. Bureau of Labor Statistics, gross domestic product (implicit price deflator), index 2017=100, annual, not seasonally adjusted.

Wisconsin is the top cranberry producing State, accounting for 60 percent of the U.S. crop in recent years (2021–23). Other leading cranberry producing States include Massachusetts (26 percent), New Jersey (8 percent), and Oregon (7 percent). In 2024, Wisconsin production is forecast to be 4.90 million barrels, down 2 percent from 5.01 million barrels in 2023 but above the State's 5-year average. A cold and wet spring followed by frost and hailstorms led to a challenging growing season in Wisconsin. Production volume in Massachusetts, New Jersey, and Oregon is forecast to be at or above last year's crop.

Based on data from Food and Agriculture Organization of the United Nations (FAO), the United States produces about two-thirds of the world's cranberries (2018–22). U.S. production has trended upward, reaching a record high of 9.63 million barrels in 2016. Average 2021–23 real grower price is 50 percent lower than the highest price in the last two decades. Volume control regulations authorized by a Federal marketing order were used in 2017 and 2018 to try to reduce cranberry volume and stabilize prices. Cranberry prices have remained low, with 2023 prices the fifth lowest in real terms since 1947. In 2023, the cranberry industry voted during a referendum to terminate the Federal marketing order.

More than 95 percent of cranberries produced in the United States are processed. In 2023, the United States exported $343.1 million of cranberries, with processed cranberry products accounting for 95 percent of value (figure 12). Prepared or preserved cranberry export volume was 179.8 million pounds, valued at $267.6 million and accounting for 78 percent of cranberry export value. Cranberry juice export volume was 11.9 million gallons, valued at $57.1 million. Processed cranberry products were largely destined for Canada, Mexico, China, and the Netherlands. Import volume of all processed cranberry market segments (frozen, prepared/preserved, and juice) are down year-to-date (January to July) with lower volumes from Canada, the primary supplier. Cranberry juice and prepared/preserved cranberry value are up year-to-date. Fresh cranberry trade is highly seasonal, with volumes spiking in autumn in time for the holiday season. In 2023, the United States imported 117.2 million pounds of fresh cranberries, with 97 percent entering in September, October, and November.

Figure 12
Cranberry import and export value, 2012 to 2023



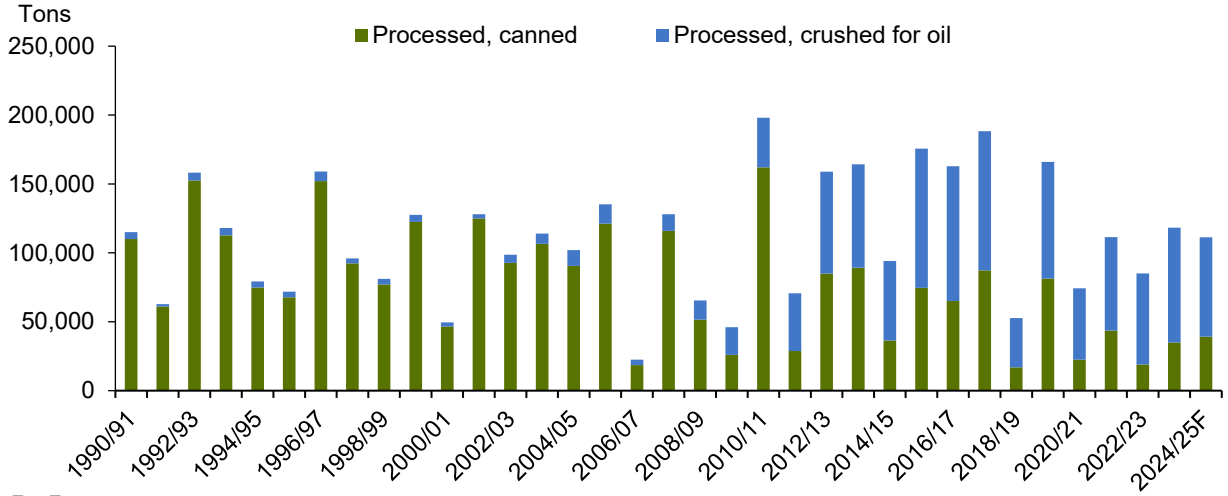
Note: The implicit price deflator has been rescaled such that the base year is 2023.
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census and U.S. Bureau of Labor Statistics, gross domestic product (implicit price deflator), index 2017=100, annual, not seasonally adjusted.

California Table Olive 2024 Forecast

The 2024 California table olive forecast is 40,000 tons, 6 percent higher than last year's crop of 37,841 tons, according to the USDA, NASS *2024 California Table Olive Probability Survey Report*. The Manzanillo olive variety production forecast represents 92 percent (36,700 tons) of total volume, followed by Sevillano (3,200 tons) and other varieties (100 tons). Table olive bearing acreage is expected to total 12,200, which represents about one-third of all olive bearing acreage in California. The remaining acreage is associated with olive oil production. If the California table olive production forecast is realized, and 98 percent of volume is canned (assuming a 2 percent cull rate), processed canned olive production in MY 2024/25 (August–July) would be 39,200 tons (figure 13). The current USDA 2024/25 forecast for processed olives

crushed for oil is approximately 72,000 tons, which would represent 65 percent of domestic olive production.

Figure 13
California olive production processed for canning or crushed for oil, 1990/91–2024/25F



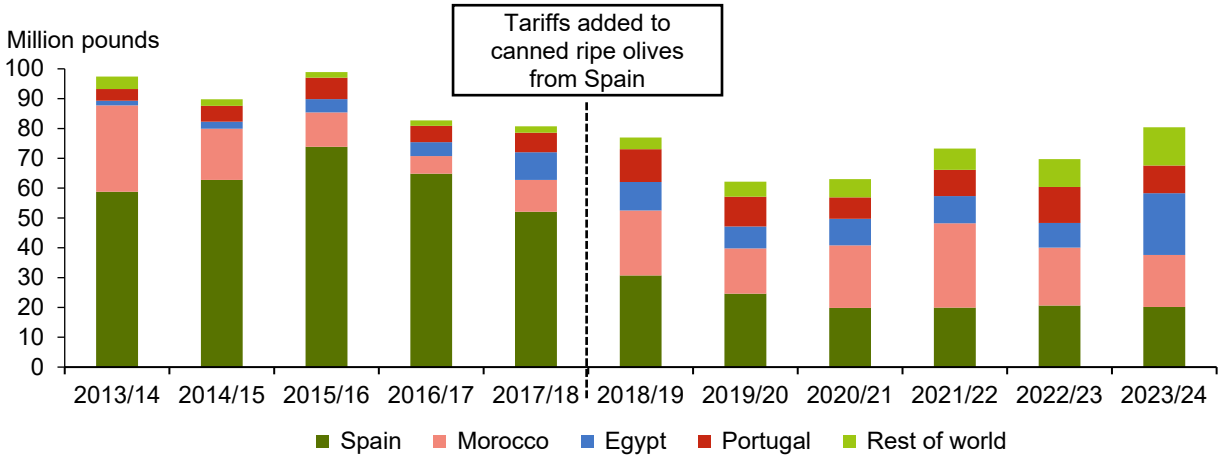
F = Forecast.
Note: U.S. olive marketing year starts in August and ends in July of the following year. Canned category includes canned and limited size processed olives. The 2024 olives crushed for oil forecast assumes an oil extraction rate of 15.3 percent.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service, *Noncitrus Fruits and Nuts Summary*, various issues, and USDA, FAS Oilseeds Production, Supply, and Distribution Database.

The majority of California table olives are destined for canning as “ripe olives” as opposed to specialty olive styles like Spanish-style green olives or Kalamata olives. U.S. consumers may recognize the common California black-ripe olives as a pizza topping, in salads, or sandwiches. In July 2024, the U.S. International Trade Commission voted to continue applying antidumping and countervailing tariffs on canned ripe olives from Spain. The tariffs originally went into place at the beginning of MY 2018/19.

In the last decade, canned ripe olives represented about a quarter of all processed olive import volume each year. In the 3 years leading up to the tariffs (MY 2015/16 to 2017/18), Spain accounted for about 75 percent of U.S. canned ripe olive imports (figure 14). In 2023/24, imports from Spain represented 25 percent of canned ripe olive import volume while Egypt and Morrocco (which are not subject to the same tariffs) accounted for 47 percent. Import volume of canned ripe olives in 2023/24 (80 million pounds) was the highest in 6 years while total processed olive volume (300 million pounds) was similar to the previous 3-year average. In 2023/24, sliced olives continued to be the most common style of preparation for canned ripe olive imports to the United States, accounting for over 80 percent of volume and value.

Figure 14

U.S. canned ripe olive imports fall following countervailing and antidumping tariffs on Spain[1]



[1.]Canned ripe olive import codes applicable to countervailing and antidumping tariffs on Spain include: 2005.70.5030, 2005.70.5060, 2005.70.6020, 2005.70.6030, 2005.70.6050, 2005.70.6060, and 2005.70.6020.
Note: U.S. olive marketing year starts in August and ends in July of the following year.
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

Tree Nuts Outlook

Calendar year 2024 was a tale of two seasons. Through mid-June over 98 percent of California was drought free, reservoirs were full, and precipitation levels were near the statewide historical average. The start of the summer, June 20, brought an increase in California temperatures and a decrease in precipitation. The *California Crop Progress & Condition* reported temperatures 12 to 13 degrees (Fahrenheit) higher than normal in some parts of the Central Coast and Sacramento Valley by the end of the first week in July. Temperatures peaked at a withering 118 degrees near the Sacramento Valley's Redding and Red Bluff weather stations. As temperatures rose, the percent of abnormally dry land (U.S. Drought Monitor Rating D0) in California climbed from 3 percent on June 25, to 6 percent on July 2, to 19 percent on July 9. The percent of land in moderate drought (D1) had reached approximately 5 percent by the beginning of August, and it slowly climbed through the start of the harvest period. By September 10, the percent of land in D1 had risen to over 10 percent, and moderate drought had become severe (D2) in a small number of isolated cases. Extreme heat and dry conditions have slowed nut maturation, reducing yields and nut quality.

The MY 2023/24 crop ended in June for hazelnuts, in July for almonds, and in August for walnuts. The 2024/25 crop year will come into focus as the autumn harvest proceeds, summer trade data is published by the U.S. Department of Commerce, Bureau of the Census, and the final estimates of carryover (i.e., inventory in storage at the start of the new crop year) are released by tree nut marketing boards.

Since USDA, ERS last discussed tree nut markets in the July 2024 *Fruit and Tree Nut Outlook* report, NASS published the 2024 *California Walnut Objective Measurement Report*. This provided the first authoritative government information about the 2024 California walnut crop.

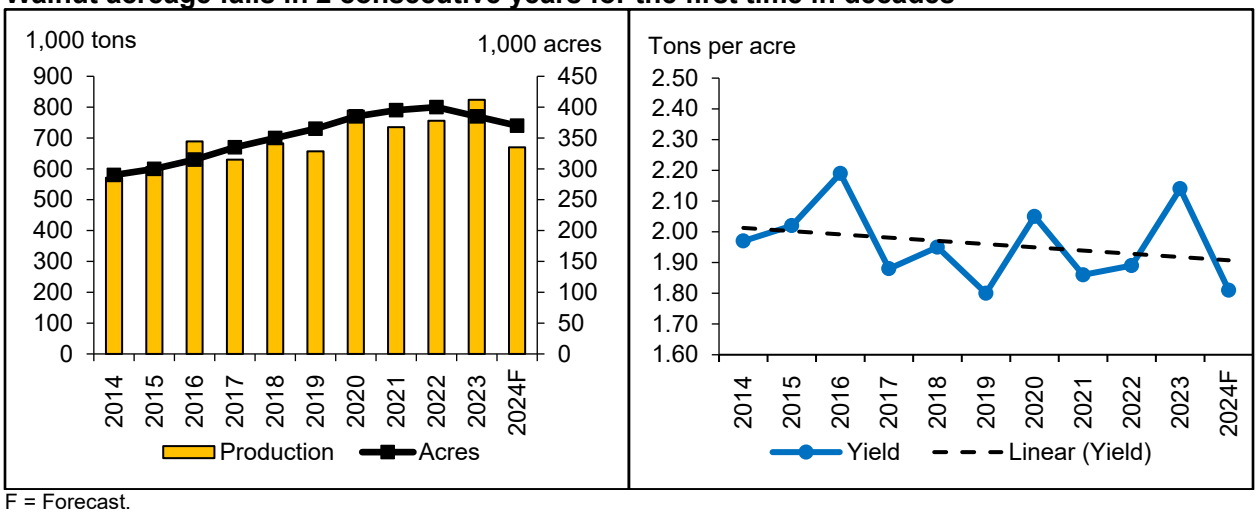
Walnut Acreage Falls in 2 Consecutive Years for the First Time Since 1951

In the July 2024 *Fruit and Tree Nuts Outlook* report, USDA, ERS reported that a warm winter in 2023/24 was expected to put downward pressure on walnuts yields, and that 2024 walnut production would drop from last year's historic peak of 824,000 tons. Estimates from the 2024 *California Walnut Objective Measurement Report* published on September 4 suggest that bearing acreage, yields, and production will be even lower than anticipated.

NASS forecasts that walnut bearing acreage dropped by 4 percent in 2024, from 385,000 in 2023 to 370,000 acres (figure 15). Yields dropped 15 percent, from 2.14 to 1.81 tons per acre. These changes are expected to decrease production by 154,000 tons (19 percent), from 824,000 tons in 2023 to 670,000 tons in 2024. If NASS preliminary estimates are realized, 2024 will be the first time that walnut acreage has dropped in 2 consecutive years since 1951.

Figure 15

Walnut acreage falls in 2 consecutive years for the first time in decades

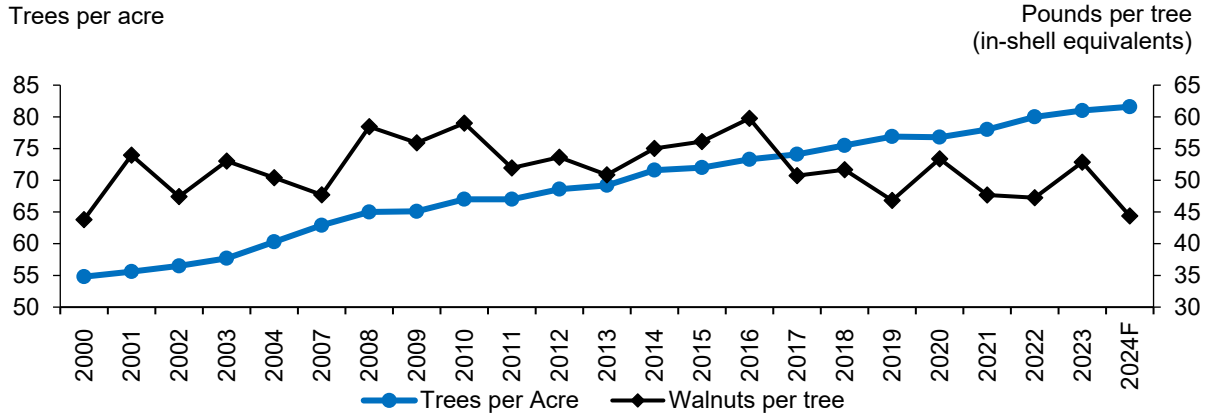


F = Forecast.
Note: Production and yields are in-shell equivalents.
Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service.

While walnut yields have been lower than 1.81 tons per acre (yields were 1.80 tons per acre in 2019), the number of walnut trees per acre has increased over time. This has contributed to higher yields and has partially offset the effects of drought, extreme heat, and insect infestations. Converting yields from tons per acre to pounds per tree helps illustrate the effect of changes in weather and production decisions on walnut yields (figure 16).

Figure 16

On a per-tree basis, estimated 2024 walnut yields are forecast to reach a 24-year low



F = Forecast.
Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service.

NASS estimates that 44.4 pounds of walnuts were produced per tree, on average, in 2024. This is lower than the average pounds produced in 2021 or 2022, when California was in a deep and persistent drought. Average pounds per tree have not been forecast this low since 2000, when 43.8 pounds were produced per tree, and yields were 1.2 tons per acre. The *USDA-ERS Fruit and Tree Nuts Situation and Outlook* report published in September 2000 indicates that extreme heat was also a factor that year.

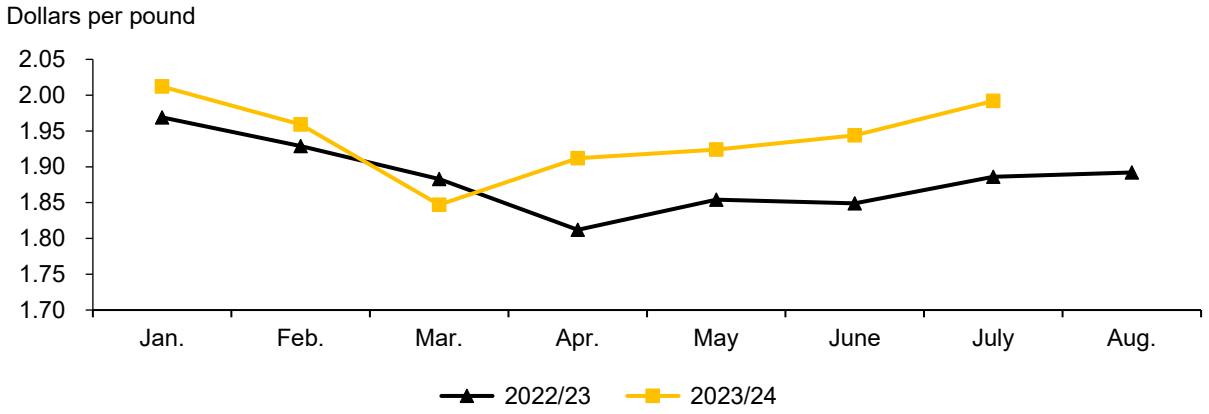
NASS September walnut forecasts tend to be lower than the final production estimate published in the May NASS *Noncitrus Fruits and Nuts* report. On average, from 2000 through 2023, estimated production from the *Walnut Objective Measurement Report* was 3 percent lower than the final estimate. In recent years, estimates from this report differed by even more than the historical average, with final production estimates exceeding the preliminary forecasts by 9 percent in 2021, 4 percent in 2022, and 9 percent in 2023, respectively. However, even if the 2024 final estimate was 3 percent higher, final production would remain below 700,000 tons. Notably, NASS final estimates have been lower than the *Walnut Objective Measurement Report* estimates over 25 percent of the time since 1997. Given the extreme heat experienced earlier this summer, a downward revision is plausible in 2024. Regardless, lower production is expected to contribute to higher walnut prices in 2024/25.

NASS defines the marketing season for domestically produced walnuts as September 15 to November 10. This is when most of the U.S. walnut crop is harvested and marketed. Data on the average prices domestic producers received for the 2024 crop will not be published until the NASS *Noncitrus Fruits and Nuts 2024 Summary* is published next spring. However, recently collected trade data can provide insight into how global prices have changed since last year.

From March 2024 to July 2024, the value of a pound of shelled walnut exports rose approximately 8 percent, from $1.85 to $1.99 per pound (figure 17). Increases in prices may be related to tightening domestic inventories. They do not reflect the impact of the lower than anticipated estimate NASS published in September in the *Walnut Objective Measurement* report. Unit values for exports in September, October, and November 2024, which will be reported later this fall and over the winter, will provide an early indication of what prices could look like during the 2024/25 marketing year (August–July).

Figure 17

Unit values of U.S. shelled walnut exports rose in summer 2024



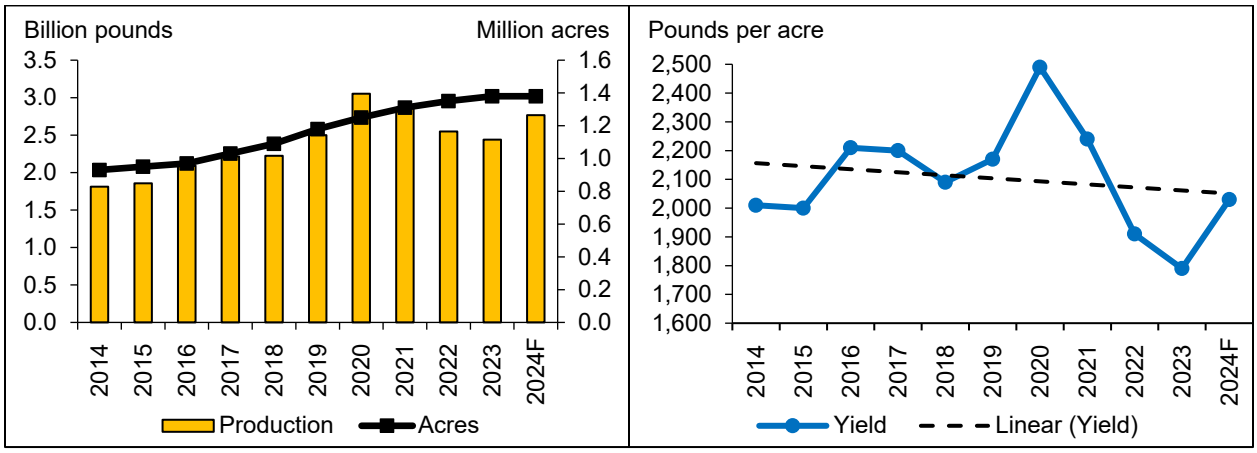
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

Almond Ending Stocks Lower in 2023/24

NASS forecasts that 2.8 billion pounds of almonds will be harvested in 2024. While almond acreage did not change much from 2023 to 2024, it has increased steadily over time, and trend-line yields would make the 2024 crop the third largest on record (figure 18).

Figure 18

Almond production is forecast higher in 2024, largely due to increases in yields



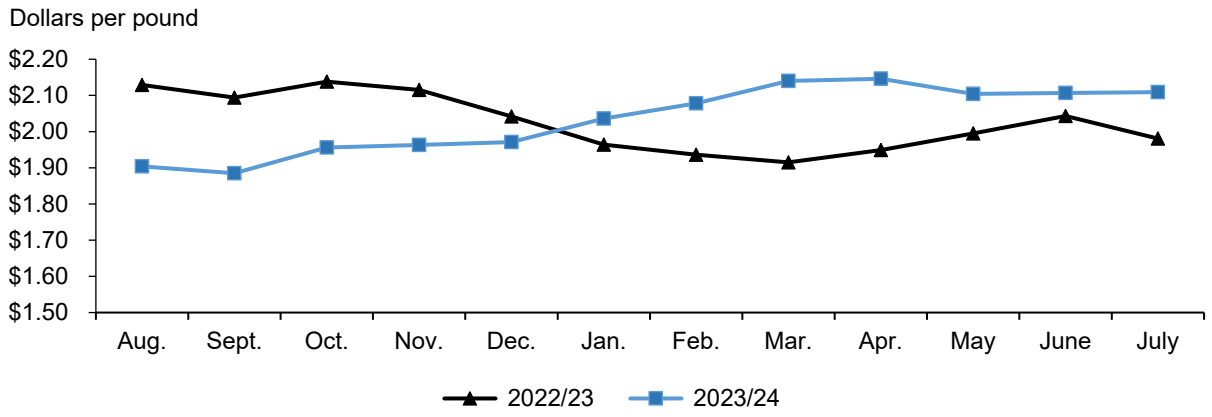
F = Forecast.
Note: Production and yields are in shelled equivalents.
Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service.

Although the marketing year for almonds begins in August and ends in July, NASS defines the marketing season for domestic almonds as August 5 to November 15. Average prices domestic producers received during the NASS 2024 marketing season will not be published until May 2025. In the meantime, trade data can provide insight into how almond prices have changed during the 2023/24 marketing year (figure 19). The average price received for a pound of

shelled almond exports rose throughout the 2023/24 marketing year. Increases in prices received during 2023/24 may be due to dwindling inventories and increases in export demand.

Figure 19

Unit values of U.S. shelled almond exports rose in MY 2023/24

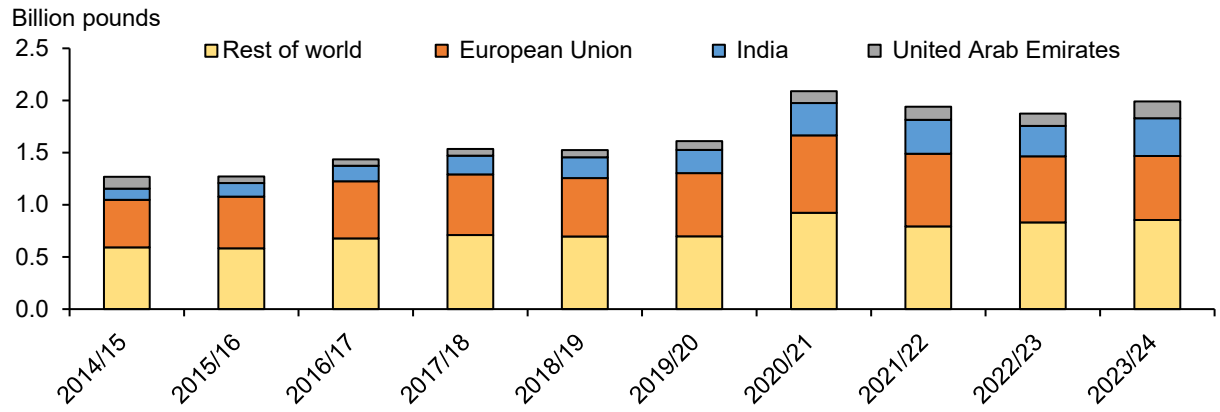


Source: USDA, Economic Research Service using data from using data from the U.S. Department of Commerce, Bureau of the Census.

The 2023/24 almond marketing year ended with 1.99 billion pounds exported. This was the second highest volume recorded, topped only by the 2.09 billion pounds exported in 2020/21. Export volumes for the 2023 crop were 6.2 percent higher than in 2022/23 and 10 percent higher than the 5-year average (figure 20).

Figure 20

6 percent more almonds were exported in 2023/24 than in 2022/23



Note: These export statistics are partial marketing year totals, reflecting volumes traded from August through July. Export volumes are shelled equivalents. In-shell (HS 802110000) and preserved (HS 2008194000) almond volumes were converted to shelled equivalents using the conversion factors 0.6 and 0.7, respectively.
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

In the August 2024 *Almond Industry Position Report*, the California Almond Board reported that 502.65 million pounds of almonds were carried into 2024/25. This is a 37 percent decrease from the 800 million pounds of inventory carried into the 2023/24 season. Assuming that imports are

unchanged from this year to next, total supply for the 2024/25 season should be approximately 3.29 billion pounds, approximately 1 percent higher than last year's 3.26 billion pounds, and just over 0.5 percent lower than the 5-year average.

Almond availability, which reflects the quantity of almonds sold in the domestic market, rose by 4.6 percent in 2023/24. Preliminary 2023/24 almond per capita availability rose from 2.18 pounds of almonds to 2.27 pounds, a 3.9 percent increase from 2022/23, but 6 percent lower than the 5-year average.

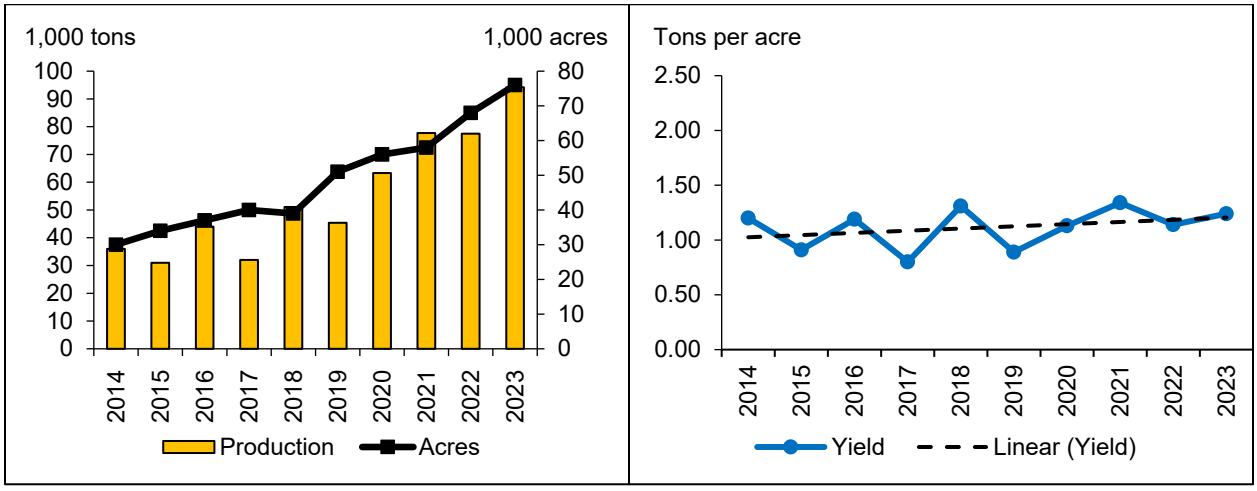
Record-breaking Hazelnut Crop in 2023/24

In the September 2023 *Fruit and Tree Nuts Outlook* report, ERS reported that hazelnut acreage and production had increased rapidly over the last decade–even more rapidly than in the almond or walnut sectors. ERS economists anticipated a large hazelnut crop in 2023 and persistently low hazelnut prices.

For a second year in a row, the NASS *Hazelnut Production Forecast* was not published in August 2024. Consequently, an authoritative, survey-based estimate for the 2024 hazelnut crop is not currently available. However, estimates of acreage, yields, production, and prices for the 2023 crop were published in the NASS *Noncitrus Fruits and Nuts 2023 Summary* (figure 21).

Figure 21

Hazelnut production increased by over 21 percent in 2023



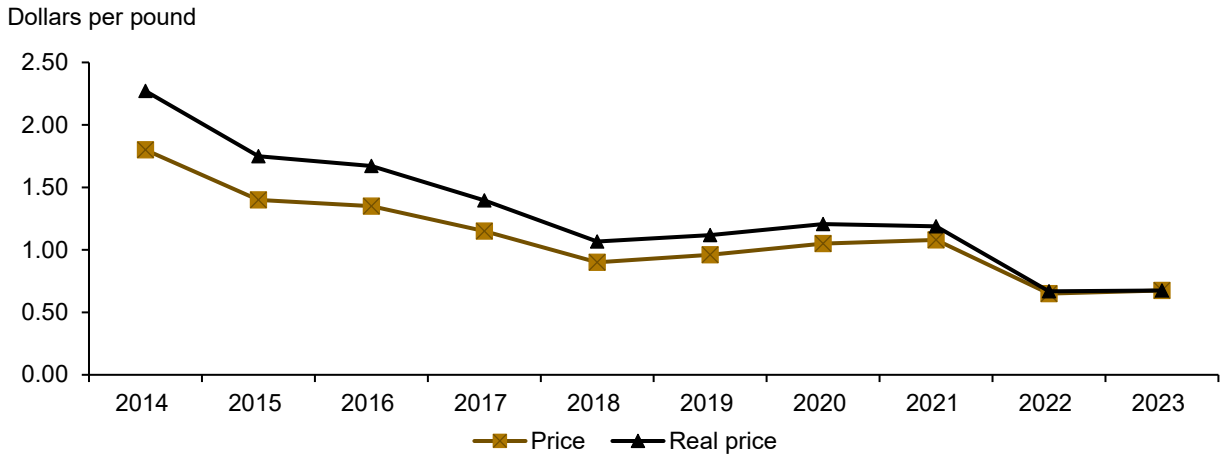
F = Forecast.
Note: Production and yields are in-shell equivalents.
Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service.

In 2023, hazelnut production increased by approximately 21.6 percent, driven by a 12 percent increase in bearing acreage and a 9 percent increase in yields. Despite the rapid growth in

domestic production in 2023, the prices domestic producers received increased by approximately 4 percent, from $1,300 per ton in 2022 to $1,350 per ton in 2023 (figure 22).

Figure 22

Nominal and inflation-adjusted hazelnut prices have fallen over the last decade



Note: The implicit price deflator has been rescaled such that the base year is 2023. Prices are in dollars per pound of in-shell equivalents. USDA, NASS defines the marketing season for hazelnuts as October 1 through November 30.
Source: USDA, Economic Research Service using data from the USDA, National Agricultural Statistics Service and the U.S. Department of Labor, Bureau of Labor Statistics, gross domestic product (implicit price deflator), index 2017=100, annual, not seasonally adjusted.

Decreases in global exports of shelled hazelnuts from MY2022/23 to MY 2023/24 (July–June) bolstered demand for US exports and contributed to recent increases in domestic hazelnut prices. From 2022/23 to 2023/24, exports from Turkey dropped by 6 thousand tons (approximately 3 percent), exports from Azerbaijan dropped 3.9 thousand tons (16 percent), exports from Georgia dropped 3.8 thousand tons (23 percent), and exports from Chile dropped by 2.5 thousand tons (9 percent). U.S. exports of shelled hazelnut products increased by 5.2 thousand tons (48 percent) over this period. Increases in the official purchase price paid by the Turkish Grain Board, which purchases and stores hazelnuts on behalf of the Turkish government, may have also put upward pressure on global hazelnut prices.

Notably, the United States has been the global leader in exports of in-shell hazelnuts for many years. However, exports of in-shell products have fallen by approximately 35 percent since MY 2020/21, from 24 thousand tons in 2020/21 to 15.7 thousand tons in 2023/24. Exports of shelled domestic hazelnut products have quadrupled over this period, from 3.9 thousand tons in MY 2020/21 to 16.2 thousand tons in MY 2023/24. Nonetheless, the United States remains the leader in in-shell hazelnut exports, accounting for over half of the global exports.

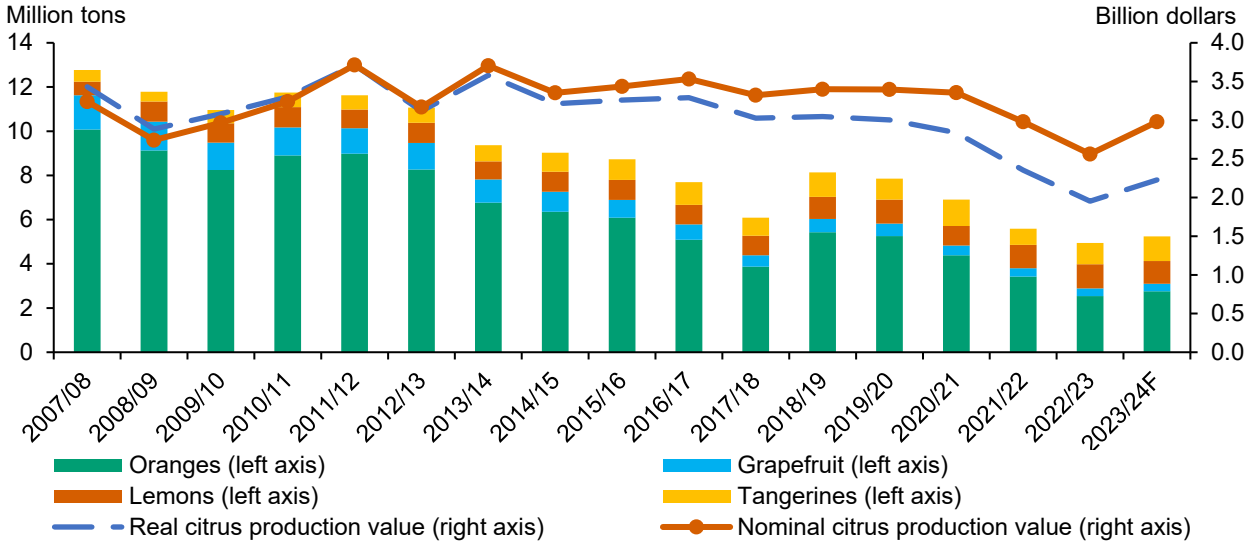
Citrus Fruit Outlook

Total U.S. Citrus Production Remains Low

The final NASS citrus production estimates for the 2023/24 crop year were published August 29, 2024. Total domestic production (all citrus commodities combined) reached 5.2 million tons and had an estimated value of $2.98 billion (figure 23).

Figure 23

Total U.S. citrus crop in 2023/24 reaches 5.2 million tons, valued at $2.98 billion



F = Forecast.
Note: Real citrus production value is inflation adjusted using GDP deflator with 2012 as base year. GDP data source is Federal Reserve Bank of St. Louis.
Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, *Citrus Fruit Summary*.

NASS final box estimates suggest that increases in the volume of citrus produced were driven by a 17 percent increase in California tangerine production and a 7 percent increase in California orange production. The increase in orange production is due to larger Valencia and non-Valencia (a category that includes navels and early and mid-season varieties) crops in both California and Florida. Florida's orange crop increased over last season. However, current production levels are below pre-hurricane Ian levels (2021/22), and the 2023/24 orange crop is expected to be the second smallest in 87 years. Lemon production decreased by 6 percent in 2023/24 due to a smaller crop in California, and decreases in the acreage devoted to lemon production in Arizona. Both the demand and supply of fresh citrus products were relatively stable in 2024, although the domestic orange and grapefruit industries have continued to shrink.

During the summer months domestic harvests tend to be smaller, and imports of foreign grown oranges, tangerines, and grapefruit make up larger shares of the fresh citrus fruit consumed domestically. As U.S. consumers examine the fresh citrus fruit on display in their local

supermarkets this September, they are likely to see grapefruit, oranges, and tangerines imported from Chile, South Africa, or Peru, and lemons from Argentina. Well established trade channels with these countries keep supermarket shelves stocked and shoppers with options throughout the year. Imports account for a smaller share of all fresh citrus fruit consumed annually. However, this is no longer the case for orange juice; Brazil and Mexico together supply 75 percent of the orange juice available to U.S. consumers.

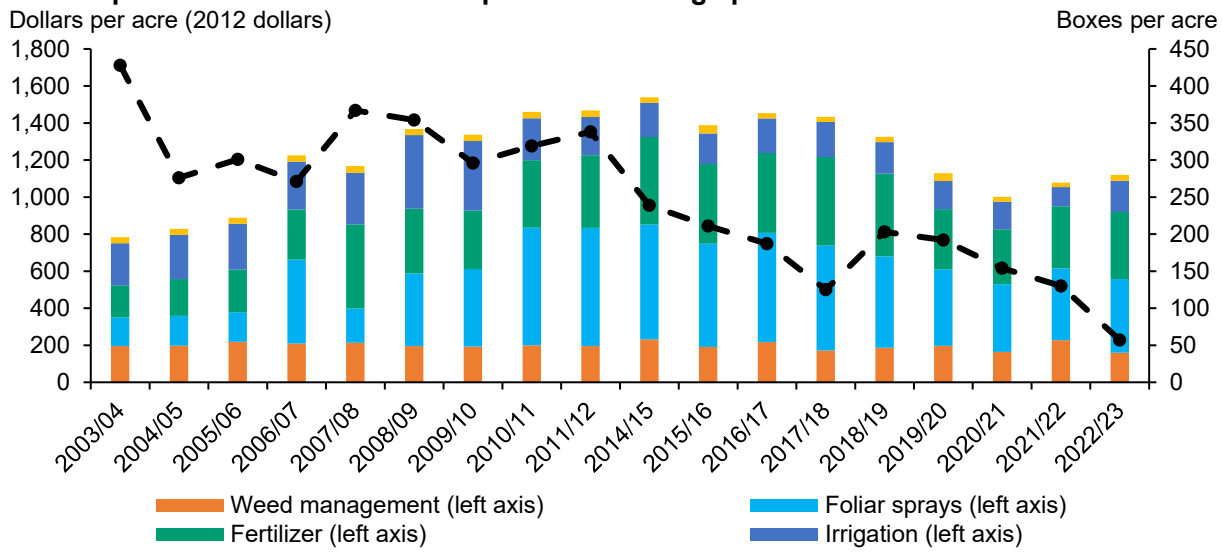
California produced more oranges than Florida in 2023/24: California has been the top supplier of oranges for the U.S. fresh market for decades. However, it surpassed Florida in all orange production (fresh market and processing markets combined) last season. California production of non-Valencia oranges (including navels and early/midseason varieties) increased 6 percent this season to 1.5 million tons. In 2023/24, Valencia orange production in California increased by 8 percent to 372 thousand tons. Although Valencia type oranges are the preferred varieties for the juice industry, about two-thirds (68 percent) of the Valencia oranges grown in California are destined for the fresh market. Orange yields in California are estimated at 351 boxes per acre this season, several times higher than yields in Florida. California orange growers have been able to maintain relatively high yields because their commercial orchards have remained free from Huanglongbing (citrus greening disease) to date.

Huanglongbing (HLB) has had a devasting effect on Florida's citrus industries. HLB is a destructive bacterial disease that is transmitted by an insect vector (the Asian citrus psyllid). The bacteria impede the infected tree from absorbing nutrients, and thus reduce tree size, health, lifespan, and fruit quality. The disease was first discovered in Florida's commercial groves in 2005 and has since become endemic to the State. With no known cure, citrus growers implement various management practices to boost the health of infected trees and improve their fruit quality. These practices may include increased applications of pesticides and fertilizers, the use of protective screens, and more recently application of antibiotics. Despite growers' best efforts to minimize losses due to HLB, yields are far below those recorded prior to 2005 and per acre costs are up.

In 2023/24, Florida's season average yield per acre was 78 boxes, only a fraction of what it was 20 years ago (428 boxes per acre) prior to the onset of greening in 2003/04. Researchers from the University of Florida's Institute of Food and Agricultural Sciences have published per acre cost estimates for Florida citrus production in Florida dating back 20 years. Inflation adjusted production costs per acre of oranges in Florida's southwest growing region (famous for its juice oranges) increased at an average rate of 7 percent per year between 2004/05 and 2014/15 (figure 24). After the 2014/15 season, costs trended downward for a few years due to growers

spending less per acre on weed management, irrigation, and foliar sprays (including insecticides). However, following the 2021/22 season costs began increasing again, and have remained above the 2003/04 pre-greening levels.

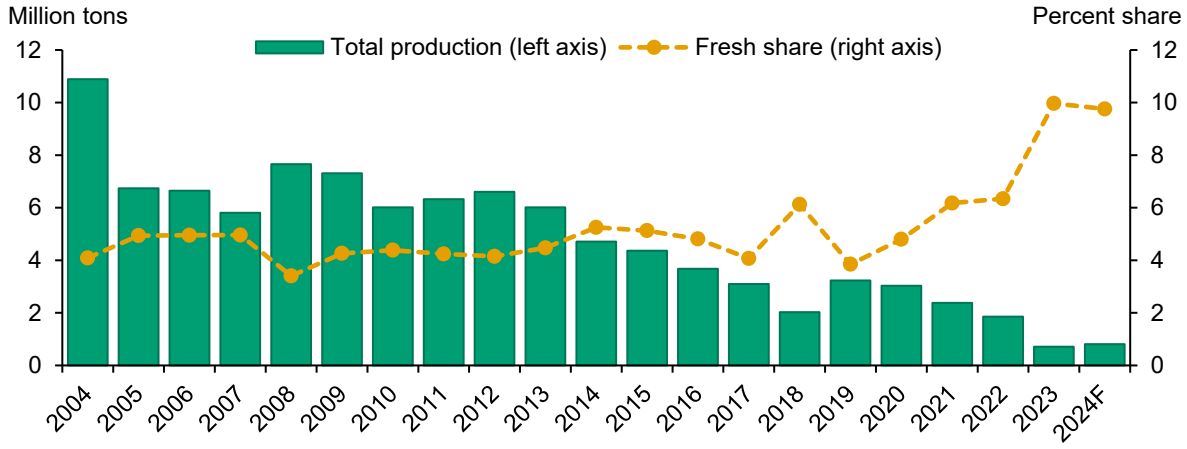
Figure 24
Annual production costs of Florida processed orange production



Note: Dollar values were inflation adjusted using GDP deflator with 2012 as base year. GDP data source Federal Reserve Bank of St. Louis.
Source: USDA, Economic Research Service calculations using data from University of Florida Institute of Food and Agricultural Sciences, Cost of Production for Processed Oranges Grown in Southwest Florida, and USDA, National Agricultural Statistics Service, Florida orange annual yield estimates.

Historically, only a small fraction of Florida-grown oranges (about 4 to 5 percent) was for sale in the fresh market, with the remainder going to processing (figure 25). However, in recent years the share of oranges going to fresh market sales has increased. In 2022/23 and 2023/24 about 10 percent of Florida's oranges went to the fresh market. While the reasons for this increase are unclear, one possibility is that Hurricane Ian disproportionately affected Florida growers who produce for the processing market and that the impacts of Hurricane Ian have persisted into 2023/24. Another possibility is that growers have been incentivized to sell Valencia oranges into fresh market channels due to a historically large gap in prices for the two markets. The average national on-tree equivalent grower price for Valencia oranges sold in the fresh market in 2023/24 was $22.86 per box, 295 percent above the processing market price of $7.74. For comparison, the average ratio of fresh to processing prices for a box of Valencia oranges was 187 percent for the previous 5 years (2018/19 to 2022/23), thus the gap between fresh and processing prices is higher than usual this season. Florida grown Valencia oranges accounted for about 10 percent of U.S. total Valencia fresh market sales last year and will count for approximately 14 percent this year.

Figure 25
Total Florida orange production and fresh market share



F = Forecast.
Source: USDA, Economic Research Service using data from USDA Economic Research Service Fruit and Tree Nuts yearbook tables.

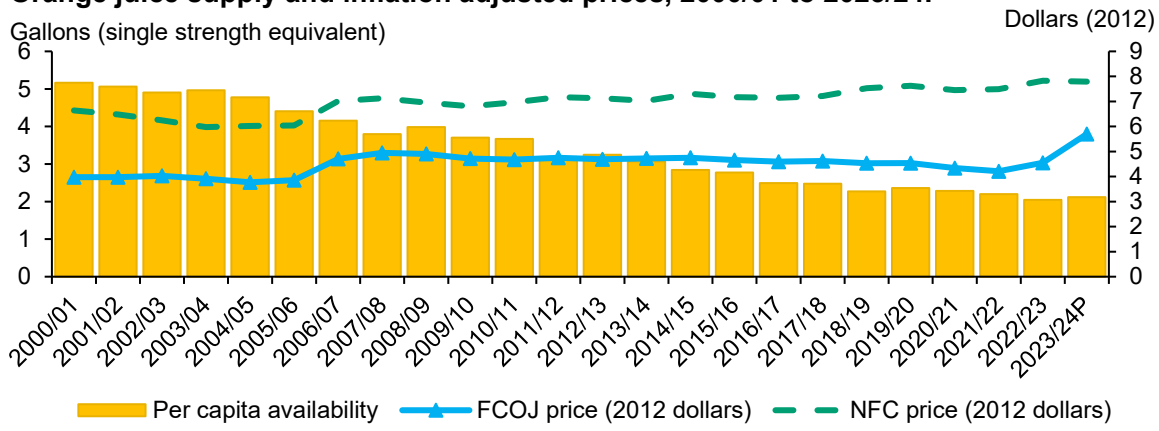
The preliminary 2023/24 per capita availability of oranges for the fresh market is 7.21 pounds, an 8 percent decrease from 2022/23 despite an increase in the size of the combined (fresh and processing) orange crop. A smaller share of the U.S. orange crop (52 percent) went to the fresh market in 2023/24 resulting in a 9 percent year-over-year decline in domestic production of fresh oranges. While imports reached a record-breaking 538 million pounds this year, they were not enough to offset the decline in domestic production. Mexico, Chile, and South Africa are expected to remain the top suppliers of U.S. fresh orange imports in 2023/24. Fresh orange exports are forecast 2 percent higher in 2023/24 and are expected to reach 772 million pounds (November 2023–October 2024). Canada, South Korea, and Mexico are expected to be the top export markets for U.S. grown oranges in 2023/24.

Orange juice imports lower in 2023/24: Imports account for growing shares of all the orange and grapefruit juice available for domestic consumption. An estimated 78 percent of the orange juice consumed in the United States in 2023/24 was imported, compared to 15 percent 20 years ago (2003/04). Orange juice imports are expected to reach 552.8 million gallons in 2023/24, a 13 million gallon (2 percent) decrease from last year but still near record levels. Brazil and Mexico are the two main suppliers of orange juice imports to the United States, accounting for 67 and 28 percent, respectively, marketing year-to-date in 2023/24 (October–July); Costa Rica accounted for approximately 4 percent of orange juice imports. Orange juice exports are expected to reach 35 million gallons in MY 2023/24, a slight increase from the low volumes shipped following Hurricane Ian, but still the second lowest level in at least 50 years. Canada and Mexico were the top two export markets for U.S. produced orange juice this season.

Florida remains the top U.S. State for orange juice in 2023/24: Orange juice is the most popular whole juice beverage in the United States, with preliminary per capita availability at 2.12 gallons per person in 2023/24 (figure 26). However, consumption has dropped considerably since its peak 26 years ago (1998) when per capita availability was 5.82 gallons per person. Grapefruit juice was never as popular as orange juice but has followed a similar trajectory with current consumption only a tenth of what it was in 1998. Despite this long-term decline in orange juice consumption, real prices (adjusted for inflation) remained relatively stable. The average retail price of not-from-concentrate (NFC) varieties increased at an average rate of 1 percent per year between 2004 and 2024, while frozen concentrated orange juice (FCOJ) increased at an average rate of about 2 percent per year. It is worth noting however, that most of this increase in prices occurred over the 2004/05 and 2007/08 seasons, after a historic drop in Florida's citrus production in 2004/05 because of a series of hurricanes. The average real retail price for FCOJ stayed mostly constant between the 2008/09 and 2020/21 seasons, only surging after Hurricane Ian in 2022/23. Real orange juice prices remained relatively flat over the last 20 years despite declining per capita availability, which indicates declining consumer demand.

Figure 26

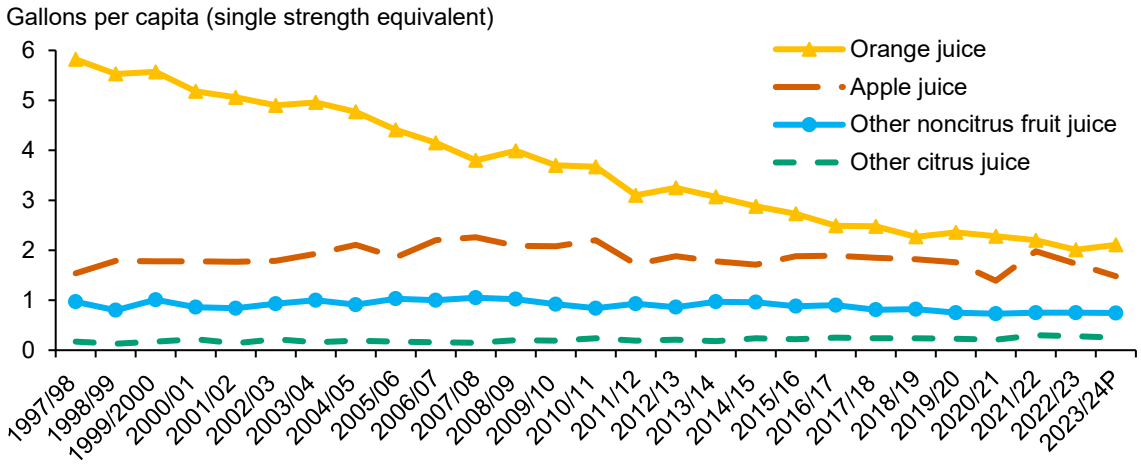
Orange juice supply and inflation adjusted prices, 2000/01 to 2023/24P



P = Preliminary. FCOJ = Frozen concentrated orange juice. NFC = Not from concentrate orange juice.
Note: Prices adjusted with BLS 2012 GDP implicit price deflator.
Source: USDA, Economic Research Service using data from USDA, Economic Research Service, Fruit and Tree Nuts yearbook tables, and U.S. Department of Labor, Bureau of Labor Statistics.

By contrast, the per capita availability of lemon and lime juices have increased at annual average rates of 4 percent and 10 percent, respectively, over the same period (1998–2024). More orange juice is consumed than either lemon or lime juice, in part because orange juice is a standalone beverage rather than an additive or ingredient. However, both lemon and lime juices exceeded per capita availability of grapefruit juice in 2022/23. Moreover, per capita availability of non-citrus fruit juices has also increased over time and continues to account for larger shares of U.S. consumers' juice intake. In 2021/22, per capita availability of apple juice was 1.98 gallons, approaching orange juice availability for the same year (figure 27).

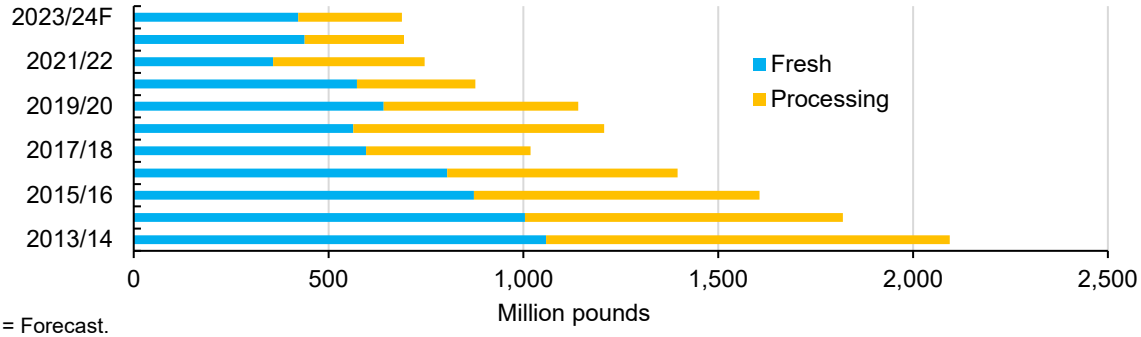
Figure 27
Per capita availability of citrus and other fruit juices, 1997/98 to 2023/24P



P = Preliminary.
Source: USDA, Economic Research Service using data from USDA, Economic Research Service, Fruit and Tree Nuts yearbook tables.

U.S. grapefruit industry continues to shrink in 2023/24: The season for fresh grapefruit begins in September and ends August of the following year. Domestic production of grapefruit is split between California, Florida, and Texas. California led the nation in grapefruit production again in 2023/24 with 172 thousand tons, a volume which accounts for 50 percent of domestic production. Texas was the only State to experience an increase in grapefruit production in 2023/24; grapefruit production in Texas increased 7 percent to 96 thousand tons. Approximately 60 percent of all domestic grapefruit production went to the fresh market this season (figure 28). While California supplied the largest volume of grapefruit in absolute terms to the processing market, Texas supplied the largest relative share of its own production to processing (46 percent).

Figure 28
Share of grapefruit going to processing and fresh markets, 2013/14–2023/24F



F = Forecast.
Source: USDA, Economic Research Service using data from USDA, Economic Research Service, Fruit and Tree Nuts yearbook tables.

Two decades ago, grapefruit was the second most popular fresh citrus fruit after oranges, as measured by domestic per capita availability. However, as of the current season, per capita availability of fresh grapefruit in the United States is 1.34 pounds—70 percent below 2003/04 season levels. Notably, the per capita availability of fresh grapefruit increased (2 percent) over last season due to imports, which are expected to reach a record high of 84.5 million pounds in 2023/24, up 68 percent from 2022/23. The import share of fresh grapefruit availability has increased considerably in recent years and is expected to reach a record high of 18 percent this season. Mexico is expected to be the largest supplier of grapefruit imports in 2023/24 (September–August). Between September 2023 and July 2024, Mexico accounted for 27 percent of all fresh grapefruit import volume, followed by South Africa with 22 percent and Vietnam accounting for 22 percent. Fresh grapefruit exports are up this season by 13 percent and are expected to reach 54 million pounds. Canada is expected to be the top market for U.S. grapefruit exports season followed by Japan and South Korea.

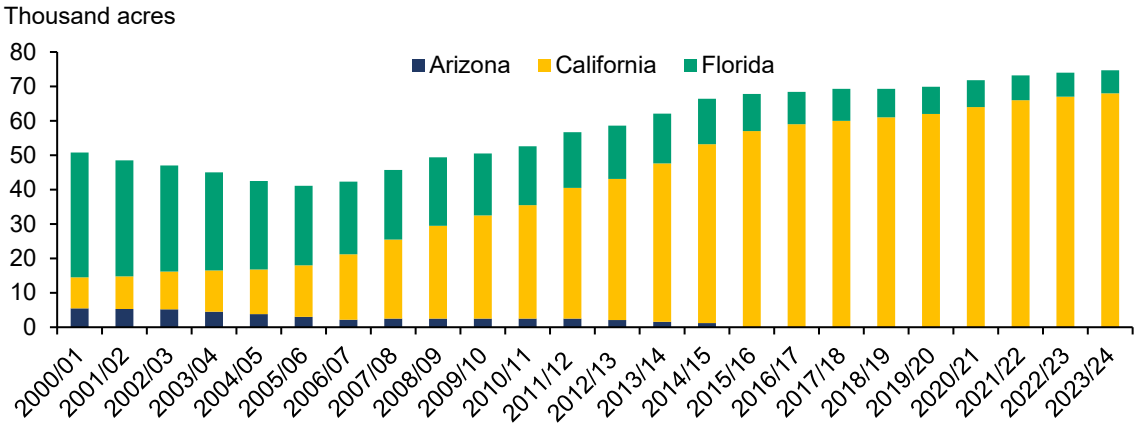
Grapefruit juice imports and exports down in 2023/24: The season for grapefruit juice begins in October and ends September of the following year. Grapefruit juice imports are expected to reach 6 million gallons in 2023/24, down 33 percent from 2022/23. The share of domestic grapefruit juice availability is expected to reach 36 percent this season. This share will be a considerable increase over 20 years ago when it was less than 1 percent in 2003/04. Total Grapefruit juice exports in 2023/24 are expected to reach the lowest level in at least 50 years at 3.9 million gallons. Canada, South Korea, the United Kingdom, and Japan are expected to be the top export markets for U.S. grapefruit juice in 2023/24.

Tangerine production up in 2023/24: Production of tangerines, mandarins, and tangelos (collectively referred to as tangerines) was 1.12 million tons in 2023/24 (November to October), up 16 percent from 963,000 tons in 2022/23. Approximately 70 percent of domestically

produced tangerines are for the fresh market; 30 percent are destined for processing. Tangerine value of production was 34 percent higher in 2023/24 than in 2022/23, surpassing the billion-dollar mark ($1.035 billion).

Tangerine production in the United States is concentrated in California (96 percent) and Florida (4 percent). California tangerine production was 1.1 million tons in 2023/24, up 17 percent from 940,000 tons in 2022/23. Bearing acreage in the State has increased each year since the turn of the century and has increased sixfold from an average of 10,375 acres (2000/01 to 2003/04) to 66,250 acres (2020/21 to 2023/24) (figure 29). Two counties in California accounted for 70 percent of the State's mandarin and mandarin hybrid bearing acreage in 2024, Tulare County (39 percent) and Kern County (31 percent).

Figure 29
Tangerine bearing acreage reaches record high in California



Note: Includes tangelos. Starting in 2015/16, Arizona was no longer included in the annual survey for tangerines.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service.

Florida tangerine production was 21,000 tons in 2023/24, down 9 percent from 23,000 tons in 2022/23. Bearing acreage in the State is less than one-third of what it was in the early 2000s, from an average of 22,925 acres (2000/01 to 2003/04) to 7,175 acres (2020/21 to 2023/24). In 2023/24, 76 percent of Florida's production entered the fresh market, higher than the previous 3-year average of 67 percent (2020/21 to 2022/23). Value of production was 19 percent higher in Florida in 2023/24 than the previous season, with fresh tangerine grower prices up 28 percent year-over-year.

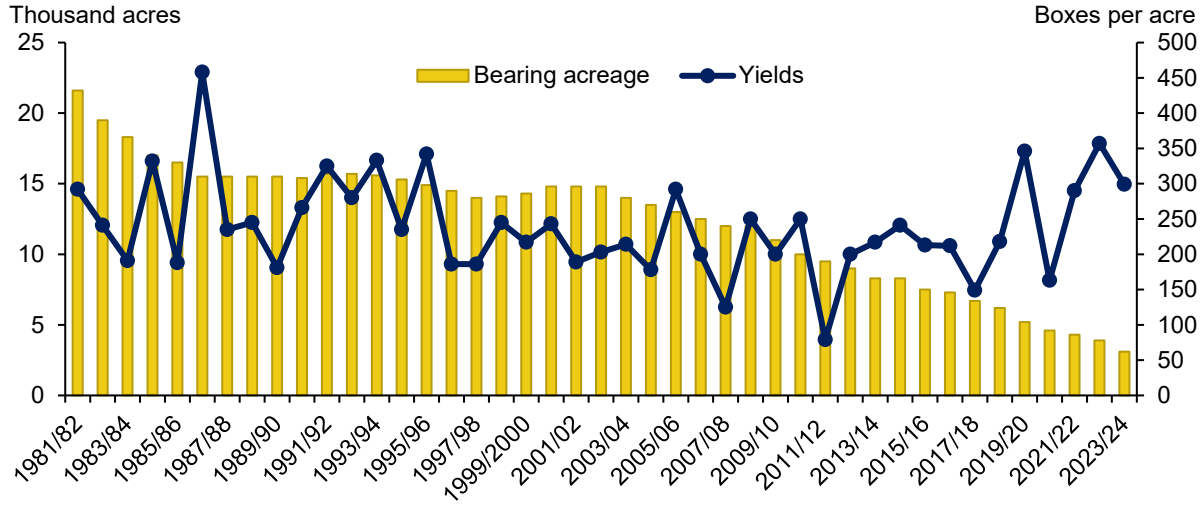
Fresh tangerine import volume (including mandarins and other *Citrus reticulata* hybrids) was up 13 percent so far this season (November to July) compared to last year, with higher volumes from major exporters Chile, Peru, and Morocco. Fresh tangerine imports typically peak in September and represent about 44 percent of domestic availability (2020/21 to 2022/23), almost double the share of the early 2000s. Fresh tangerine export volume was up 15 percent so far this season (November to July) compared to last year, with much higher volumes sent to Mexico

this season to date. Citrus production in Mexico has suffered in recent years due to high temperatures and erratic precipitation. Fresh tangerine U.S. export volume typically peaks in February or March.

Lemon production lower in 2023/24: Lemon production was 1.02 million tons in 2023/24, down 6 percent from 1.09 million tons in 2022/23 but above the 3-year average. Lemon production in the United States is concentrated in California (about 95 percent) and Arizona (about 5 percent). Like tangerines, about 70 percent of domestic lemon production is for the fresh market, with the remaining 30 percent for the processing market. Lemon value of production was 22 percent higher in 2023/24 than the previous season.

California lemon production was 984,000 tons in 2023/24, down 5 percent from 1.03 million tons in 2022/23. Bearing acreage in the State has increased slowly since the early 2010s and was estimated to be 53,000 acres in 2024, the highest since the early 1980s. Arizona lemon production was 38,000 tons in 2023/24, down 32 percent from 56,000 tons in 2022/23. In contrast to California, Arizona's lemon bearing acreage has declined drastically since the turn of the century, decreasing from an average of 14,600 acres (2000/01 to 2003/04) to 3,975 acres (2020/21 to 2023/24) (figure 30). Yields were lower than the 2022/23 season but above the previous 3-year average (20020/21 to 2022/23). In 2023/24, 82 percent of Arizona's production entered the fresh market, higher than the previous 3-year average of 73 percent (2020/21 to 2022/23).

Figure 30
Arizona lemon acreage and yields, 1981/82 to 2023/24



Note: A box is equivalent to 80 pounds.
Source: USDA, Economic Research Service based on data from USDA, National Agricultural Statistics Service.

In 2023/24 (August to July), fresh lemon imports increased 17 percent year-over-year, driven by increases in imports from Argentina and Chile. Three countries have provided 96 percent of fresh lemon import volume on average in recent years (2019/20 to 2023/24): Argentina (36 percent), Mexico (31 percent), and Chile (29 percent). In recent years, fresh lemon imports have accounted for almost a quarter of domestic availability. Fresh lemon export volume increased less than 1 percent in 2023/24 than in 2022/23. About three-quarters of fresh export volume is shipped in the first half of the calendar year (January to June). In 2023/24, increases in fresh exports to South Korea and Mexico offset declines to top destinations Canada and Japan.

Outlook for 2024/25 U.S. Citrus Season

USDA, NASS will release initial 2024/25 forecasts for all-citrus production in the United States in October 2024. However, an early forecast published in the California Department of Food and Agriculture's *2024-25 California Navel Orange Objective Measurement Report* suggests that navel orange production in California will reach 78 million 40-lb cartons, a 2 percent increase from production in 2023/24. The forecasted increase is mostly due a 24 percent increase in fruit set per tree. However, fruit diameter is forecast down by 5 percent to 2.063 inches.

The results of the first orange and grapefruit maturity tests for Florida's 2024/25 season were published by USDA, NASS on September 12. Sampled fruit included early oranges (e.g., navels), mid-season non-Valencia oranges, and red and white seedless grapefruit. The survey suggests that early varieties had lower unfinished juice and lower solids per box than in 2023/24, while mid-season non-Valencia had higher unfinished juice and lower solids in 2024/25. According to the survey, unfinished juice and solids in 2024/25 for both red and white seedless grapefruit are below 2023/24 levels.

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