



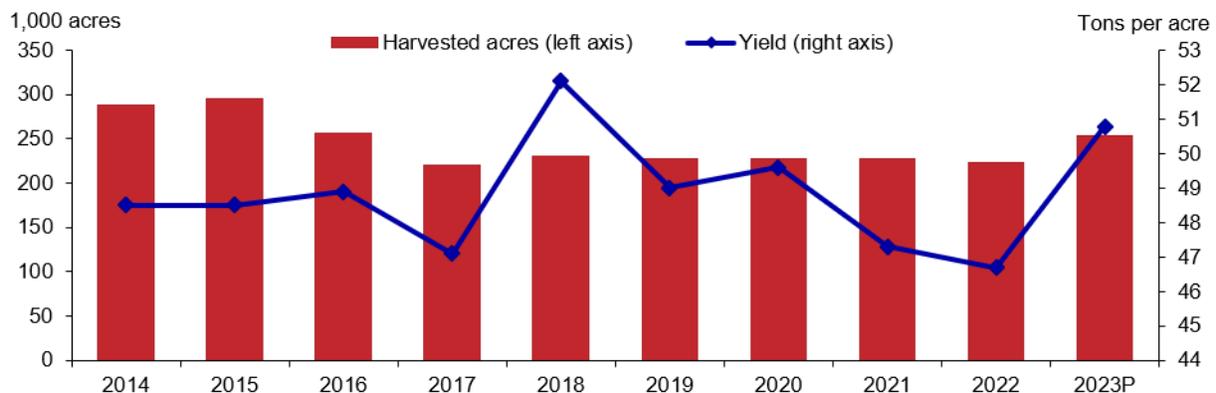
Vegetables and Pulses Outlook: December 2023

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California Processing Tomato Yield Improves in 2023

The United States is the largest processing tomato producer in the world. Each year, California accounts for the majority of processing tomato acres harvested in the United States. Following 2 years that fell short of expectations, California processing tomato yields are forecast to be the second highest yield on record in 2023 (50.8 tons per acre). Despite a delayed start to spring planting, high contract prices and easing drought conditions contributed to a 13 percent increase in harvested acres. In 2023, contracted production is forecast at 12.9 million tons, the largest crop since 2015.

California contracted processing tomato harvested acres and yield, 2014–23



P = Preliminary.

Note. Harvested acres and yield represent contracted production only, which represents 99 percent of total production.

Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, 2023 California Processing Tomato Report (August 2023).

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Industry Overview

Weather Impacts: The California Department of Water Resources reported that snowpack was six to nine times higher in the Sierra Nevada Mountains in April 2023 than in April 2022. Melting snow and ample rain increased subsurface water availability throughout the growing season. The *Crop Progress and Condition* reports released by the National Agricultural Statistics Service (NASS) in early September indicated that over 90 percent of California was drought-free.

Fresh vegetables: In late 2023, domestic supplies of key fresh-market vegetables, such as lettuce, onions, and broccoli, increased due to favorable growing conditions and easing input prices. This put downward pressure on fresh-market vegetable prices.

Processing vegetables: Despite increases in the quantity of processed vegetables produced, the Consumer Price Index (CPI) for processed fruits and vegetables increased by 10 percent from January through September, year-over-year, and was about 4 percent higher (on average) in October and November. The Producer Price Index (PPI) for canned vegetables and juices increased by 15 percent from January through September and was 7 percent higher (year over year) in October and November.

Potatoes: Increases in the quantity of potato products available are expected to put downward pressure on grower and retail potato prices during the 2023/24 marketing year. Since potatoes are the most heavily weighted item in the CPI for fresh vegetables, lower potato prices are expected to be an important moderating influence on retail vegetable prices well into the coming year. The annual CPI for fresh vegetables in 2023 (ERS Food Price Outlook, November 2023) is expected to be approximately 1 percent higher than 2022.

Mushrooms: In 2022/23 (July–June), domestic producers grew 667 million pounds of mushrooms, valued at \$1.04 billion. The 2022/23 crop was 5 percent smaller than the previous season. However, a 10 percent increase in the average price per pound offset lower volume, leading to total sales increasing 2 percent from last year. Growers sold a record high 88.1 million pounds of organic mushrooms in 2022/23. Total organic mushroom volume represented 13.2 percent of total mushroom production.

Pulses: Production and exports of dry peas and lentils increased significantly. Chickpea exports also increased. By contrast, domestic growers produced more dry beans, but exports fell. These fluctuating trade dynamics reflect the challenges and opportunities in the global pulse market.

Table 1: U.S. vegetable and pulse industry at a glance, 2020–2023/1

Item	Unit	2020	2021	2022	2023F	Percent change 2022–23F
Area harvested						
Vegetables, fresh and processing/2/8	1,000 acres	2,141	2,110	2,003	1,942	-3.0
Potatoes/9	1,000 acres	912	924	911	960	5.3
Dry beans, dry peas, lentils, and chickpeas/3	1,000 acres	3,395	3,089	3,029	2,924	-3.5
Mushrooms/4	1,000 acres	3.1	3.0	2.6	2.5	-4.1
Total	1,000 acres	6,451	6,126	5,946	5,829	-2.0
Production						
Vegetables fresh/2/8	Million cwt	288	272	264	292	10.7
Vegetables processing/2/6	Million cwt	354	337	333	359	7.6
Potatoes/9	Million cwt	420	410	399	434	8.9
Dry beans, dry peas, lentils, and chickpeas/3	Million cwt	66	37	50	50	0.4
Mushrooms	Million cwt	816	758	702	667	-5.1
Total	Million cwt	1,943	1,813	1,748	1,802	3.1
Crop value						
Vegetables fresh/2	\$ millions	11,021	9,747	12,569	10,068	-19.9
Vegetables processing/2/6	\$ millions	1,857	1,949	2,435	2,599	6.7
Potatoes/9	\$ millions	3,907	4,174	5,127	4,916	-4.1
Dry beans, dry peas, lentils, and chickpeas/3	\$ millions	1,483	1,307	1,612	1,552	-3.7
Mushrooms/4	\$ millions	1,153	1,064	1,018	1,035	1.7
Total	\$ millions	19,421	18,240	22,762	20,171	-11.4
Imports/7						
Vegetables fresh	\$ millions	9,523	10,004	10,687	12,013	12.4
Vegetables processing/5	\$ millions	3,593	3,869	4,407	4,385	-0.5
Potatoes (including seed)	\$ millions	1,734	2,025	2,546	3,230	26.9
Dry beans, dry peas, lentils, and chickpeas/3	\$ millions	315	355	404	420	4.0
Mushrooms	\$ millions	502	595	665	634	-4.8
Total	\$ millions	15,667	16,847	18,709	20,681	10.5
Exports/7						
Vegetables fresh	\$ millions	2,306	2,396	2,487	2,412	-3.0
Vegetables processing/5	\$ millions	2,038	2,254	2,390	2,357	-1.4
Potatoes (including seed)	\$ millions	1,675	1,869	2,084	2,378	14.1
Dry beans, dry peas, lentils, and chickpeas/3	\$ millions	782	732	666	971	45.8
Mushrooms	\$ millions	42	42	41	30	-25.7
Total	\$ millions	6,844	7,293	7,669	8,149	6.3
Per capita availability						
Vegetables fresh	Pounds	147.3	145.3	143.5	146.4	2.0
Vegetables processing/5	Pounds	118.4	111.8	109.9	112.7	2.6
Potatoes/9	Pounds	115.0	113.0	112.7	117.4	4.1
Dry beans, dry peas, lentils, and chickpeas/3	Pounds	11.2	10.8	10.5	10.8	3.2
Mushrooms	Pounds	3.7	3.7	3.6	3.4	-7.2
Total	Pounds	395.7	384.7	380.2	390.7	2.8

Note: Hundredweight (cwt) = 100 pounds. \$ millions = million U.S. dollars.

1/ Total values rounded.

2/ Utilized production excluding melons.

3/ Includes Austrian winter and wrinkle seed peas where applicable.

4/ Mushroom area equals total fillings (multiple mushroom crops).

5/ Ratio of total value to total production.

6/ Includes canned, frozen, and dried. Excludes potatoes, pulses, and mushrooms.

7/ All international trade data are expressed on a calendar year basis.

8/ Includes both fresh and processed sweet potatoes.

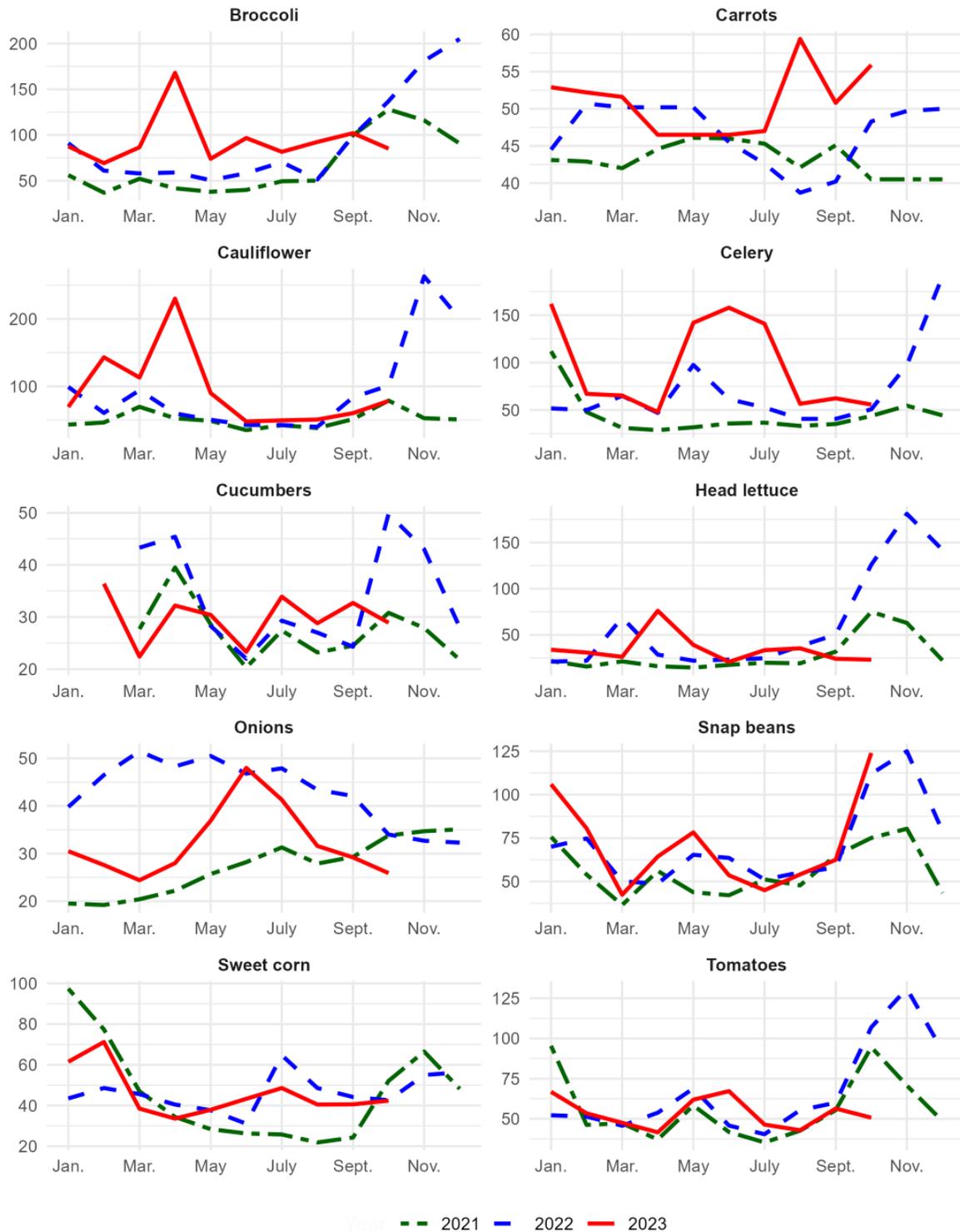
9/ Includes both fresh and processed.

Source: USDA, Economic Research Service calculations using USDA, National Agricultural Statistics Service data and U.S. trade data from U.S. Department of Commerce, Bureau of the Census.

Figure 1

Free-on-board (FOB) prices for selected fresh-market vegetables, 2021–23

Cents per pound



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

Fresh Market Vegetables

Prices Cooling Heading into Late 2023

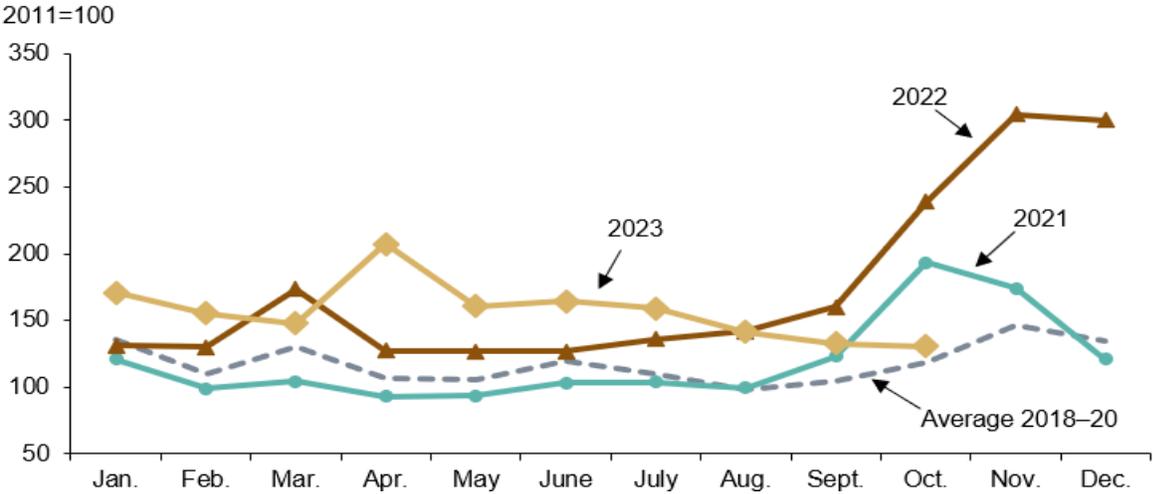
On average, fourth quarter 2023 fresh-market vegetable prices are well below the relatively strong levels observed in 2022 (figure 1). This is a marked contrast from the first half of 2023 when fresh prices remained near the elevated levels experienced during the fall of 2022.

Though hot spells in California and tropical rains in Mexico temporarily reduced supplies in the fall quarter of 2023, ample domestic production and import supplies have returned a measure of stability to the unusually volatile markets of the past 18 months.

This fall, average prices for key fresh-market vegetables dropped as supplies of several crops (such as lettuce, broccoli, and cauliflower) benefitted from a combination of extended warm, dry weather in California, easing drought and input prices, and favorable growing weather. As a result, production shifted smoothly from growing areas used in the summer/early fall to growing areas used in the late fall/winter.

Though the aggregate supply of fresh vegetables was fairly stable in 2023, the October 2023 USDA, NASS commercial vegetable price index based on Free on Board (FOB) shipping-point prices dropped 46 percent from a year earlier (figure 2). Given monthly shipping-point prices from the vegetable price index observed through October, coupled with weekly USDA, AMS data available up to early December, fourth quarter aggregate fresh vegetable prices are expected to average at least one-third below a year earlier led by lower prices for iceberg lettuce, onions, potatoes, and tomatoes. Prices are expected to average above a year earlier for carrots and snap beans.

Figure 2
Monthly vegetable price index trends lower in second half of 2023



Source: USDA, Economic Research Service calculations using USDA, National Agricultural Statistics Service, *Agricultural Prices*.

The following bullet points provide a broad overview of the market situation for select fresh-market vegetable crops. These bullet points analyze USDA, Agricultural Marketing *Market News* shipment and FOB shipping-point data collected from October through November 2023 (table a3; table a4), as well as U.S. Department of Commerce, Bureau of the Census import and export data from January–October 2023 (table a5).

Broccoli:

- Total shipment volume (47 percent of which was shipped from a domestic origin) was down 13 percent from a year ago.
- The FOB shipping-point price for conventional crown-cut broccoli averaged \$0.93 per pound during October and November—down 46 percent from the same period a year earlier.
- The USDA, AMS *Market News* weekly advertised retail price for crown-cut broccoli averaged \$1.66 per pound—down 4 percent from the October–November average of 2022.
- Reduced domestic output was partially offset by increases in imports. Import volumes from January through October were 24 percent higher than a year earlier, with unit values up about 18 percent.
- Export volumes (January–October) were 13 percent lower year-over-year, with organic volume down 39 percent.
- Lower production has put downward pressure on annual per capita availability, which is projected to fall below the 5.24 pounds of broccoli that was available in 2022.

Snap (string) beans:

- Shipment volumes (approximately 33 percent domestic) from October through November 2023 were 21 percent higher than a year ago.
- The FOB shipping-point price for conventionally-grown beans (round green type) averaged \$1.14 per pound during October and November—down 3 percent from the same period a year earlier.
- The USDA, AMS *Market News* advertised retail price for round green snap beans averaged \$1.82 per pound, about the same as a year earlier.
- Import volume was up 3 percent from 2022, with import unit value up 8 percent.
- Export volume was up 20 percent from a year ago, driven by greater shipments to Mexico and the Dominican Republic.
- Annual per capita availability is projected up from the 1.24 pounds of 2022.

Cabbage:

- Total shipment volume (approximately 64 percent domestic) was down 17 percent from a year ago (October–November).
- Shipping-point prices for round green cabbage averaged 29 cents per pound—up 4 percent from a year earlier. The average price for red cabbage was down 22 percent to 38 cents per pound.
- The USDA, AMS *Market News* advertised retail price for green cabbage averaged \$0.68 per pound, 1 percent below a year earlier.
- Import volume (January–October) (including Napa cabbage) was up 17 percent from a year earlier.
- Export volume (January–October) was down 9 percent from the same time in 2022, with organic down 13 percent. Over the last 3 years, organic cabbage accounted for approximately 13 percent of total cabbage export volume.
- Per capita availability is projected to be down slightly from the 6.18 pounds of 2022.

Carrots:

- The FOB shipping-point price for conventional baby peeled carrots averaged 68 cents per pound—up 3 percent from a year earlier. The price for packaged/bunched carrots averaged 23 percent higher to 52 cents per pound.
- The USDA, AMS *Market News* advertised retail price for baby carrots averaged \$1.32 per pound (up 4 percent from a year earlier), with organic selling for \$1.00 per pound.
- The United States remained a net importer of fresh carrots in January–October with volumes up 5 percent from a year earlier.
- With export prices (unit value) up more than a tenth, export volume (January–October) was down 7.5 percent from a year ago.
- Per capita availability is forecast to decline from the 8.38 pounds of 2022.

Cauliflower:

- Total shipment volume (70 percent domestic) was 4 percent above a year earlier.
- The FOB shipping-point price for white cauliflower averaged 67 cents per pound during October and November—down 64 percent from a year earlier.
- The USDA, AMS *Market News* advertised retail price averaged \$1.36 per pound, down 25 percent from the elevated 2022 levels.
- January–October import volume was down 21 percent from a year earlier with supplies from Mexico down one-third from the same period last year.

- Export volume during January–October was 11 percent lower than a year ago, with organic 37 percent lower.
- Per capita availability is projected to decline from the 2.12 pounds of 2022.

Sweet corn:

- Shipment volume (82 percent domestic) was down 18 percent from a year ago.
- The FOB shipping-point price for sweet corn (yellow) averaged \$0.48 per pound—down 0.4 percent from a year earlier.
- The USDA, AMS *Market News* advertised retail price averaged \$0.59 per ear, 8 percent higher than a year ago.
- January–October import volume was down 2 percent from a year earlier with shipments from top supplier Mexico up 6 percent from the same period last year.
- Export volume during January–October rose 18 percent from a year ago, with most of the gain in shipments to Canada (up 15 percent).
- Per capita availability is projected to rise from the weather-reduced 4.11 pounds of 2022.

Cucumbers:

- Total shipment volume (14 percent domestic) was 1.5 percent below a year ago.
- The FOB shipping-point price for cucumbers averaged 31 cents per pound—down 36 percent from a year earlier. Small (pickling) cucumbers averaged 27 percent below a year ago.
- The USDA, AMS *Market News* advertised retail price for conventionally field-grown cucumbers averaged \$0.75 each, down 4 percent from a year ago.
- January–October import volume of cucumbers and gherkins rose 3.7 percent from a year earlier.
- Export volume during January–October was 8 percent lower, with organic down 20 percent. Exports only account for only 1 percent of the disposition of fresh cucumber supply.
- Per capita availability is projected to be up from the 8.15 pounds of 2022.

Head lettuce:

- Total shipment volume (91 percent domestic) was 10 percent higher than a year ago.
- The FOB shipping-point price for iceberg lettuce averaged 31 cents per pound—down 79 percent from a year earlier. The price of romaine hearts was also 79 percent lower than a year ago at 59 cents per pound.

- The USDA *Market News* retail price averaged \$1.44 per head (down 15 percent from a year ago), with romaine lettuce down 9 percent to \$1.71 per head.
- January–October head lettuce import volume was down 7 percent from a year ago. Imports of all other lettuce types fell 21 percent and accounted for 71 percent of all lettuce imports.
- Export volume for all lettuce types during January–October was down 1.7 percent from a year ago.
- Per capita availability is projected to rise from the 10.34 pounds of 2022.

Onions (bulb):

- Total shipment volume (89 percent domestic) was almost unchanged (down 0.9 percent) from a year ago with an 8 percent increase in domestic shipments offset by lower imports.
- The FOB shipping-point price for dry yellow onions averaged 21 cents per pound—down 28 percent from a year earlier.
- The USDA *Market News* weekly advertised retail price for yellow storage onions averaged \$0.85 per pound (down 1 percent from 2022), with sweet (non-pungent) onions up 3 percent to \$1.28 per pound.
- January–October import volume for onions and shallots (including sets) was almost unchanged from a year earlier (down 0.1 percent). Shallots accounted for 22 percent of annual 2022 onion and shallot imports.
- Export volume during January–October of onions and shallots (including onion sets) was down 7.4 percent from a year ago. Fresh dry-bulb onions (excluding sets) were down 5 percent, while shallots were 4 percent lower.
- Given improved domestic production in 2023, per capita availability is projected to exceed the 19.18 pounds of 2022.

Sweet (bell) peppers:

- Total shipment volume (31 percent domestic) was 8 percent below a year ago.
- The FOB shipping-point price for conventional green bell peppers averaged 63 cents per pound—down 11 percent from a year earlier.
- The USDA *Market News* weekly advertised retail price for green bell peppers averaged \$1.55 per pound (down 5 percent from a year earlier), with red bell peppers down 14 percent to \$2.57 per pound.
- January–October import volume was down 3 percent from a year earlier.

- Export volume during January–October was up 8 percent, with organic down 13 percent.
- Per capita use is projected to be up from the 11.06 pounds of 2022.

Squash:

- Total shipment volume (5 percent domestic) was down 17 percent from a year ago.
- The FOB shipping-point price for zucchini averaged 34 cents per pound—down 35 percent from a year earlier.
- The USDA *Market News* weekly advertised retail price for zucchini squash averaged \$1.31 per pound, down 5 percent from the same time a year ago.
- January–October squash import volume was up 4 percent from a year earlier, with zucchini accounting for nearly half of the volume. Imports now account for two-thirds of U.S. squash availability.
- Per capita availability is projected to be up from the 5.26 pounds of 2022.

Tomatoes, round:

- Total shipment volume (42 percent domestic) was 7 percent higher than a year ago. Cherry/grape tomato shipments were up 7.5 percent from a year earlier.
- Field-grown mature-green round tomatoes at the FOB shipping-point averaged \$0.50 per pound—down 57 percent from a year ago. Grape tomatoes were down 8 percent to \$2.10 per pound.
- The USDA *Market News* advertised retail price for vine-ripe round tomatoes averaged \$1.53 per pound, down 27 percent from the elevated 2022 level. Grape tomatoes were 2 percent higher.
- January–October import volume (all tomatoes) was up 3.5 percent from a year earlier. Tomatoes identified as greenhouse-grown accounted for 69 percent of fresh tomato imports. Powered primarily by product grown under controlled environments, fresh tomato imports have risen 172 percent since 2000.
- All fresh tomato export volume during January–October was up 1.3 percent from a year ago. Since peaking in 2000, tomato exports have trended lower, with 2022 volume 57 percent below that of 2000.
- Annual per capita availability is projected to rise from the 19.04 pounds of 2022.

Sweet potatoes:

- Domestic shipment volume in October–November 2023 was 26 percent higher than the same period last season with increased shipments from California more than offsetting declines in North Carolina, Mississippi, and Louisiana.

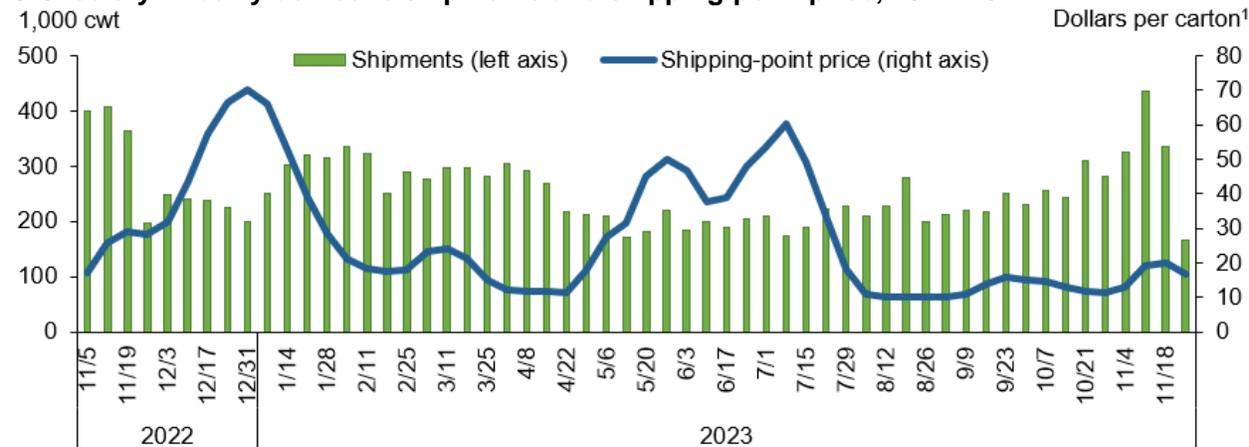
- With lower shipment volumes from key suppliers in the Southeast, the average FOB price for conventional orange sweet potatoes was up about 7 percent.
- January–October 2023 fresh sweet potato export volume was up 9 percent year-over-year at 475 million pounds. Exports to the European Union were 35 percent higher than the same period last year (218.3 million pounds), resulting in the largest fresh export volume during the January to October time frame to the E.U. since 2018. During calendar year 2022, Egypt surpassed the United States in global sweet potato export volume as U.S. exports fell to their lowest level in 6 years.

Celery:

- Total shipment volume (88 percent domestic) was 9 percent lower than a year ago.
- The FOB shipping-point price for celery hearts (October–November) averaged \$0.69 per pound—up 20 percent from last year. Whole celery averaged 19 percent lower, and was half the price observed in the summer (figure 3).
- The USDA, AMS *Market News* advertised retail price averaged \$1.47 per bunch, down 4 percent from the same time in 2022.
- January–October import volume (excluding celeriac) was 2 percent greater than a year earlier; export volume was 8 percent lower.
- Per capita availability is projected to decline from the 4.15 pounds of 2022.

Figure 3

U.S. celery: Weekly domestic shipments and shipping-point price, 2022–23



Note: Cwt = Hundredweight, a unit equal to 100 pounds. Thousand cwt = 100,000 pounds.

1/ One carton is approximately 60 pounds. Average weekly shipping-point prices for conventional whole celery.

Source: USDA, Economic Research Service calculations using data from USDA, Agricultural Marketing Service, *Market News*.

Import Share Continues To Rise

Market share of fresh vegetable imports has steadily trended upward for decades. By 2022, imports accounted for 39 percent of fresh vegetable availability—more than double 20 years

earlier. Import volume for fresh-market vegetables (excluding potatoes) increased 1 percent from a year earlier during the first 10 months (January–October) of 2023 (table a5). Shipments from Mexico, which accounted for about 78 percent of fresh vegetable imports thus far in 2023, rose 2.1 percent despite a 1 percent drop in the third quarter caused in part by drought conditions affecting yield in key growing regions. Imports from Canada, which accounted for 12 percent of fresh-market imports, rose 0.5 percent.

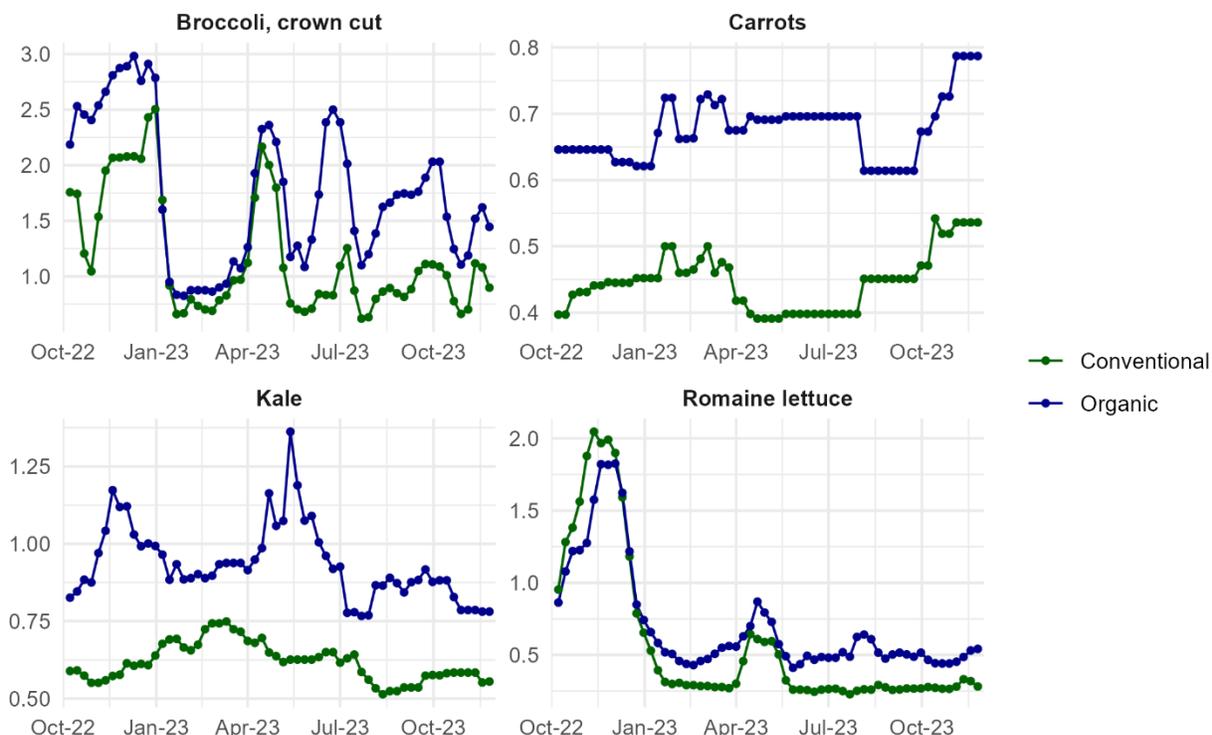
Organic Leafy Green Prices Down from Summertime Highs

Domestic shipping-point prices for several organic leafy vegetables have recovered from summertime highs (figure 4). With a cooler wet spring in California, delayed planting and slowed growth put upward pressure on conventional and organic FOB prices. Unlike last fall, less disease pressure, higher water allocations, and better fall weather led to a smoother regional production transition for several West Coast crops (table a3). While many FOB prices for organic vegetables like crown cut broccoli, kale, and romaine lettuce are down in October–November from last year, organic carrot prices have mirrored the conventional market with prices trending upward in the late fall of 2023.

Figure 4

Weekly average domestic shipping-point prices for selected organic vegetables

Dollars per pound



Note: Per pound weight conversions based on container approximate net weights as reported by USDA, Agricultural Marketing Service.

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

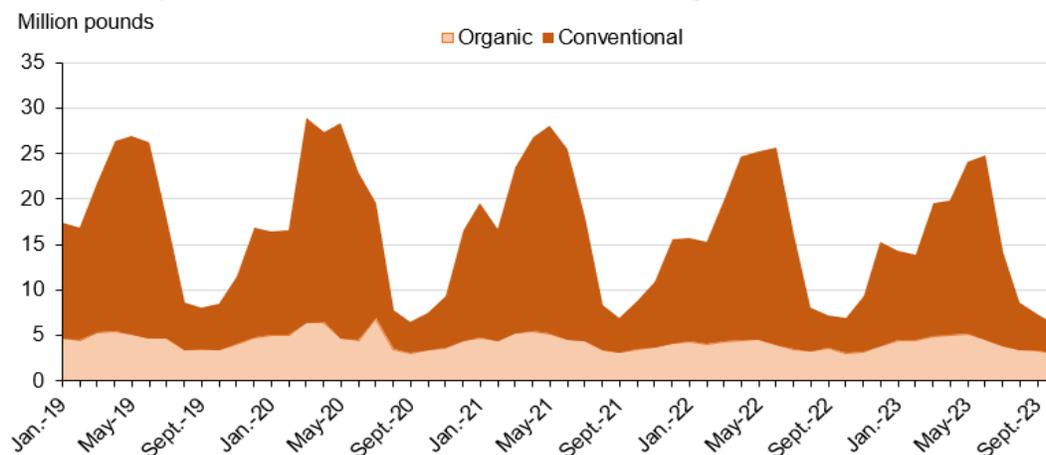
Organic Vegetable Imports Mixed, Exports Down in 2023

The U.S. Department of Commerce, Bureau of the Census reports organic trade for some fresh vegetable and pulses (table a6). Organic trade highlights include:

- From January–October 2023, organic bell pepper (greenhouse and other) import volume was 84.3 million pounds, up 4 percent year-over-year. Approximately 63.6 million pounds was designated as greenhouse production, representing 75 percent of total organic bell pepper import volume. Mexico continued to be the largest supplier of organic bell peppers, accounting for 85 percent (72 million pounds) of supply.
- From January–October 2023, fresh organic garlic imports were 56 percent lower than the same period in 2022, and the lowest volume since 2013. The organic share of fresh garlic imports has fluctuated between 1 and 7 percent of annual volume in recent years.
- From January–October 2023, 138.3 million pounds of organic cucumbers were imported, 69 percent of which was designated as greenhouse production. These imports had a value of \$107.6 million (10 percent of total fresh cucumber import value).
- Export volume for several organic vegetables in 2023 (January–October) fell for many commodities including broccoli, cauliflower, celery, romaine lettuce, spinach, and peppers.
- Exports of organic carrots increased by 7.6 percent, or 3 million pounds, from 2022 to 2023 (January–October). Since 2017, annual organic fresh carrot exports accounted for 31 percent of total carrot export value and 25 percent of volume. Conventional and organic carrot export volumes tend to peak in the spring. Though conventional export volumes drop in the fall, organic export volumes are relatively constant throughout the year.

Figure 5

U.S. monthly export volume for conventional and organic fresh carrots, 2019–23



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

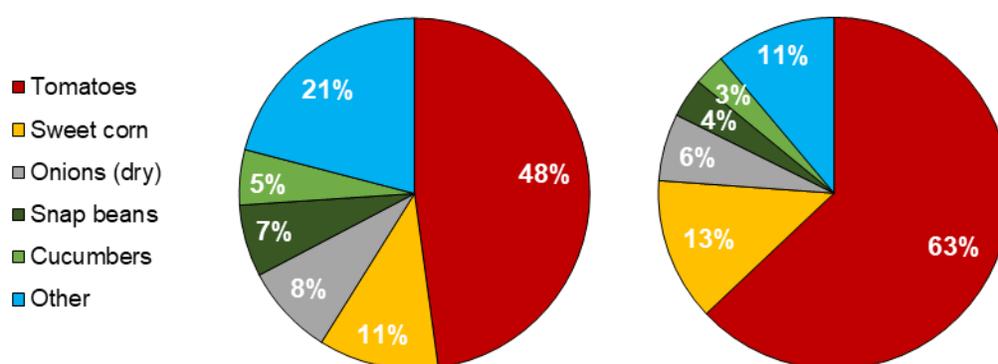
Processing Vegetables

Many U.S. producers grow vegetables intended for canning, freezing, drying, or pickling.

Vegetables grown for processing tend to have thick skins, uniform shapes, and other properties that make harvesting or processing easier. Although a wide variety of vegetables are processed, tomatoes account for 6 out of every 10 pounds produced and almost 50 cents out of every dollar in value. As illustrated in figure 6, tomatoes crush other vegetables grown for the processed market.

Figure 6

Share of processed vegetable production, by value (left) and by weight (right), 2022



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

Ample Water and High Prices Push Processing Tomato Production Upward

Tomatoes are sensitive to frost. Consequently, tomatoes tend to be grown in California and Florida, where climates are warm and the risk of damage from freezing temperatures is low.

Most tomatoes grown for processing are produced in California. Fields can be planted from late January through June and harvested from June through October.

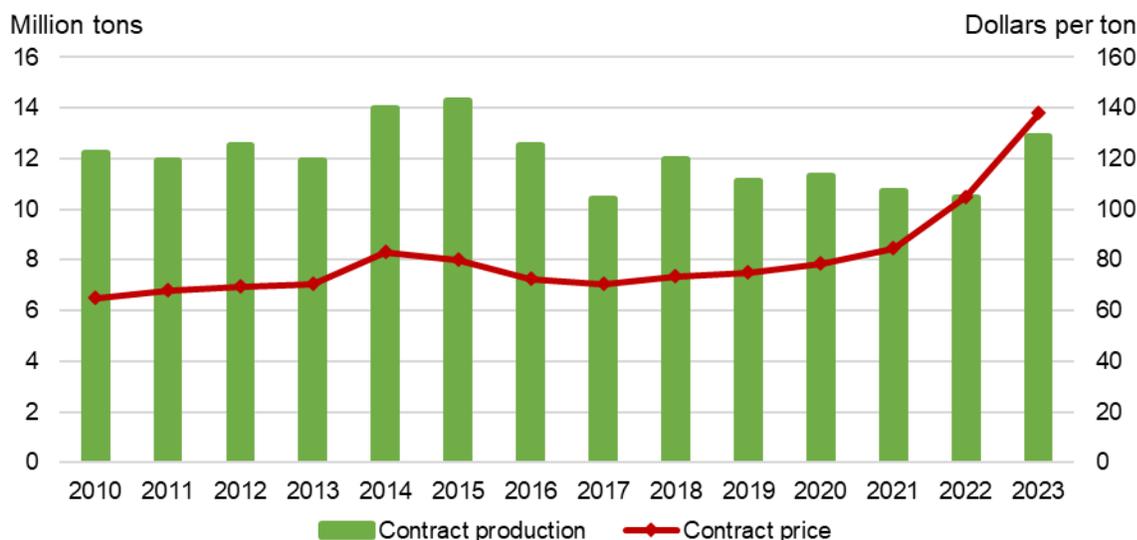
Decades ago, tomato fields were sown with seeds. Since the turn of the century, however, it has become increasingly common for commercial operations to transplant seedlings. Currently, most processing varieties are grown from transplants. Transplants are grown in greenhouses and plugged into fields starting in early March.

In 2023, heavy winter storms led to flooding in many parts of California's Central Valley. Fields remained wet and muddy well into the spring. Although these conditions delayed planting in the spring and harvesting in the fall, the availability of sub surface water and pent-up demand for

tomato products resulted in high yields, high prices, and high revenues for many producers growing tomatoes for processing.

In early 2023, the California Tomato Growers Association (CTGA) and processors agreed to a base contract price for conventionally grown tomatoes of \$138 per ton (figure 7). This is the highest that prices for conventionally grown processing tomatoes have been in decades.

Figure 7
California processing tomato production and field price, 2010–23



Note: One ton is equal to 2,000 pounds.
 Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service and California Processing Tomato Advisory Board.

As reported in the April 2023 USDA, ERS *Vegetable and Pulses Outlook* report, tomato paste inventories were even lower this growing season than in 2021/2022. This has continued to put upward pressure on tomato paste prices. Estimates of market prices advertised online by major tomato processors suggest that bulk (55-gallon drum) tomato paste prices range from 85 cents to \$1.22 per pound, depending on the percent of natural tomato soluble solids. This is a 5 to 6 percent increase from the spring when prices ranged from 80 cents to \$1.16 per pound. This is much higher than the 40 cents per pound that growers were earning in 2020, but not nearly as high as the \$1.80 per pound (inflation adjusted) that growers were earning in the 1980s.

High prices incentivized growers to expand contracted acreage by 10 percent, from 230,000 in 2022 to 255,000 acres in 2023. Though wet weather delayed planting, it also increased yields. USDA, NASS reports that yield for contracted processing tomatoes was 50.8 tons per acre in 2023, a 9 percent increase from last year, but still shy of the record 52.1 tons per acre growers achieved in 2018.

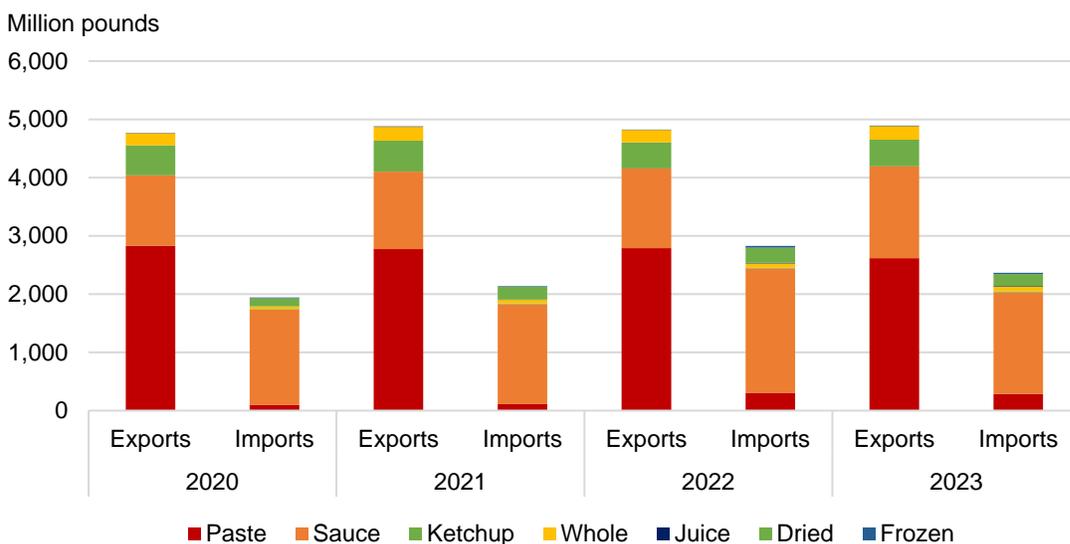
In the April 2023 *Vegetable and Pulses Outlook* report, USDA, ERS reported that California tomato processors intended to contract for 12.4 million tons of tomatoes. Recently collected data suggests that this was an underestimate. The 2023 *California Processing Tomato Report* published by USDA, NASS in August forecast that 12.9 million tons were contracted for production in 2023 (figure 7). This is 23 percent more than last year’s contracted production of 10.5 million tons.

Data reported by the U.S. Department of Commerce, Bureau of the Census indicates that the value of both imports and exports of processed tomato products will be higher in 2023 than in 2022 (table b7 and table b8). Generally, this is because processing tomato prices are up over 30 percent from 2022 (when the base price for contracted tomatoes was \$105 per ton and the field price reported by USDA, NASS was \$104.43).

Census Bureau data suggests that accumulated import volumes of processed tomato products, which reflect aggregated imports from January through October, were approximately 16 percent lower in 2023 than in 2022 (figure 8). This decrease was driven by changes in imports of sauces, which account for more than 70 percent of import product volumes (in fresh weight equivalents) in 2023. As of October 2023, import volumes of sauces were down 18 percent relative to the same time last year.

Figure 8

Processed tomato trade, fresh-weight volume, January to October, 2020–23



Note: Fresh-weight conversion factors are as follows: paste – 5.432; sauce – 3.247; ketchup – 2.457; whole – 1.552; juice – 1.527; dried – 17; and frozen – 1.82.
 Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

By contrast, accumulated processed tomato product export volumes were 1.4 percent higher in 2023 than in 2022 (figure 8). Changes in aggregate export volumes are driven by changes in

exports of paste (which account for over half of the market), and sauces (which account for about one-third). As of October 2023, tomato sauce exports were up 15 percent, and tomato paste exports were down 6 percent, relative to 2022.

Changes in trade volumes from 2022 to 2023 reflect increases in domestic production, strong domestic demand, and high tomato prices. Domestic producers have maintained a steady flow of products to foreign buyers while displacing imported processed tomato products.

Frozen Vegetable Stocks Have Fallen Since 2022

Though most processing vegetables grown in the United States tend to be harvested, processed, and stored in the late summer and fall, the distribution and sale of vegetable products occurs throughout the year. International trade helps ensure that domestic consumers have access to a wide variety of processed vegetables year-round. Along with fresh-market vegetables, frozen (and other types of processed) products play an important role in delivering variety, taste, and nutrients to consumers.

USDA, NASS maintains a list of approximately 600 cold storage facilities that store agricultural products for 30 days or more. NASS surveys these facilities once a month to gauge how the supply of frozen processed vegetables changes over time.

In October 2023, approximately 3.79 billion pounds of vegetables and potatoes were in cold storage, a 0.5 percent decrease from October 2022 (table b9). Of these 3.79 billion pounds, approximately 32 percent were potatoes, 28 percent were sweet corn, 8 percent were green peas, 7 percent were green beans, 5 percent were carrots, and 2 percent were broccoli.

Although frozen broccoli stocks were up 11 percent from the 62 million pounds in storage in 2022, stocks of frozen chopped and cut broccoli fell to a record breaking low of 20.4 million pounds. Stocks of frozen onion rings are down 3 percent from the record high of 19.6 million pounds that was reached in October 2022.

Processed Vegetable Import and Export Values Up

During the first 10 months of 2023 (January–October), the value of U.S. processed vegetable imports increased 7.6 percent from a year earlier to \$6.06 billion (table b7). Canada was the top exporter of processed vegetable products to the United States, accounting for over one-quarter of processed vegetable imports. The value of processed vegetable imports from Canada increased by 18 percent year-over-year, from approximately \$1.65 billion to \$1.95 billion. The value of processed vegetable imports from Mexico increased 9.9 percent (from \$1.03 billion to

\$1.13 billion), while import value from China decreased 20 percent (from \$423 million to \$337 million) with lower volumes of all categories of processed vegetables except for frozen which increased by 1 percent.

- The value of frozen vegetables increased by 14.8 percent from \$2.74 billion to \$3.15 billion, led by potatoes (up 26.4 percent) and broccoli (up 11.9 percent). Volume for the first 10 months of 2023 is up slightly (1.1 percent) over the same period last year—with last year setting a record high of 5.5 billion pounds of frozen vegetables imported. Frozen vegetables account for 54 percent of the volume and 49 percent of the value of processed vegetables over the last three years, largely from frozen potato products.
- The value of prepared or preserved vegetables increased 4.7 percent from \$2.04 billion to \$2.14 billion. These gains were driven by increases in tomato products (value up 35.5 percent), like ketchup (value up 53.4 percent, volume up 41.9 percent), and potato chips (value up 47.8 percent, volume up 27.8 percent), which offset losses in artichokes (value down 20.4 percent, volume down 27 percent) and mushrooms and truffles (value down 14.6 percent, volume down 25.5 percent).
- The value of dried and dehydrated vegetables decreased 7.4 percent from \$768 million to \$711 million. A notable exception is potato products, like flakes, granules, and starch (up 15.3 percent).
- The value of vegetable juices dropped 17.9 percent from \$81 million to \$67 million. While the value of tomato juice increased 25.2 percent, mixed vegetable juices decreased by 45 percent.

Based on data from January through October 2023, the value of all processed vegetable exports increased 5.4 percent to \$3.65 billion compared to the same period last year (table b8). Canada is the top destination for U.S. processed vegetables. Over the first 10 months of 2023, US exporters shipped \$975 million in processed vegetables to Canada, up 3 percent from \$944 million exported over the same period in 2022. While the volume of processed vegetable exports headed to Mexico and Japan, the second- and third-largest markets, are down slightly from last year, values are up 15.4 percent and 13.8 percent, respectively.

- The value of frozen vegetables increased 8.6 percent from \$1.35 billion to \$1.46 billion, driven by increases in potato exports (up 13.1 percent). Other frozen vegetables (which make up a small portion of total frozen vegetable value) were down significantly, such as sweet potatoes (down 85.1 percent) and spinach (down 42.9 percent). Frozen vegetable export volume overall was down 12 percent year-over-year, despite gains in frozen potato products.

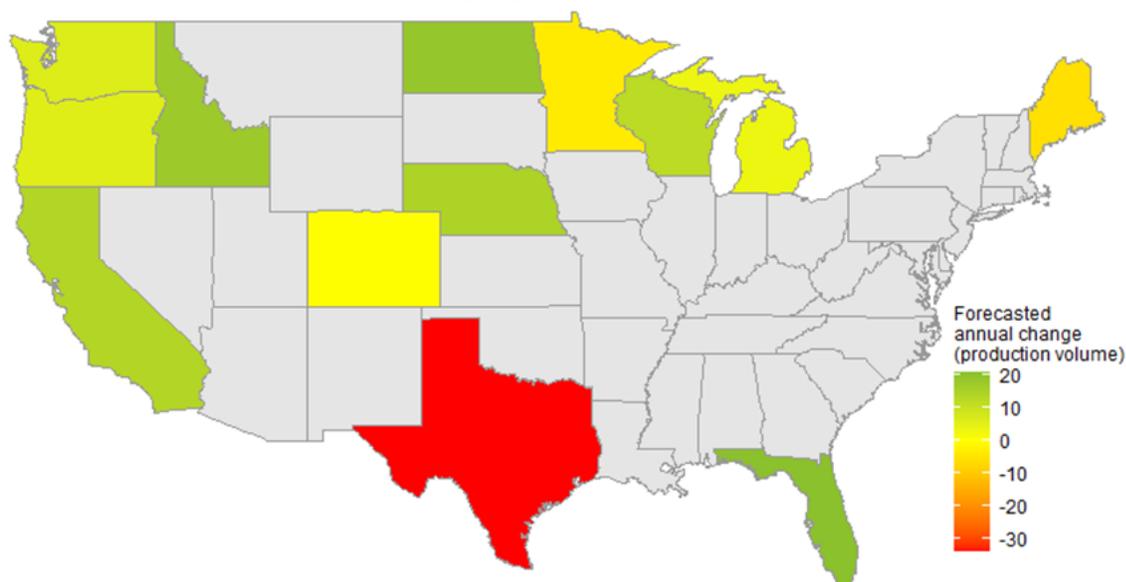
- The value of prepared or preserved vegetables increased 4.8 percent from \$1.81 billion to \$1.89 billion. These gains were driven by increases in tomatoes (value up 11.6 percent, volume up 4 percent) and potato chips (value up 8.2 percent, volume up 9.3 percent). While comprising a small portion of the market, double digit gains were also seen in mushrooms and truffles (value up 23.8 percent, volume up 25.3) and sauerkraut (value up 21.7 percent, volume up 36.2 percent).
- The value of dried and dehydrated vegetables dropped 2.7 percent to \$273 million from \$280 million, despite a 36.2 percent increase in the value of potato product exports. Export value of dried and powdered onion products fell 29.3 percent from the previous year to \$54 million, the lowest since the mid-2000s.
- The value of vegetable juices dropped 24.8 percent to \$24 million. Tomato juice exports increased 44.4 percent while mixed vegetable juice exports dropped 28.2 percent, the lowest since the turn of the century.

Potatoes

Near Record Yield Boosts Potato Crop in 2023

According to USDA's November *Crop Production* report, 2023 U.S. potato production is 434.2 million hundredweight (cwt), up 9 percent from last year. Increased harvested acreage (up 5 percent from last season) and the third largest yield on record (452 cwt per acre) combined to produce the largest crop in the top 13 potato-producing States since 2000. Six of the top 13 potato-producing States (California, Florida, Idaho, Nebraska, North Dakota, and Wisconsin) posted double-digit year-over-year percentage increases in production (figure 9). The crop in Texas, which accounts for about 2 percent of total production, had the steepest year-over-year percent change decline in production (down 34 percent).

Figure 9
U.S. potato production volume change by State, 2022–23



Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, *Crop Production Report* (November 2023).

Potato production in 2023: The 2023 crop snaps the 4 consecutive year-over-year declines observed in the top 13¹ potato-producing States.

- With one-third of the 2023 crop, Idaho remains the top potato producer. Output in the Gem State increased 18 percent, marking the biggest year-over-year increase since 1965. Washington State accounted for 23 percent of U.S. potato production in 2023. At 101.2 million cwt, Washington's 2023 crop was the fourth largest on record as favorable

¹ Top 13 potato-producing States include California, Colorado, Florida, Idaho, Maine, Michigan, Minnesota, Nebraska, North Dakota, Oregon, Texas, Washington, and Wisconsin.

summertime growing conditions led to an increase in yield. Unlike Idaho and Oregon, Washington's planted acreage remained unchanged from a year earlier. Minnesota was the only top potato State to reduce planted acres in 2023.

- With overall 2023 production in the Pacific Northwest up 15 percent from 2022, U.S. french fry processors and the table stock market are expected to have ample supply of Russet potatoes through 2023/24.
- Based on historical patterns and easing 2023/24 potato prices, planted acres in 2024 are forecast to be lower than 2023. Several factors will weigh on 2024 potato planting decisions including prices for other crops, processed potato demand, crop rotation limitations, and input costs.

Fresh potato prices trending lower heading into 2023/24 after setting new season

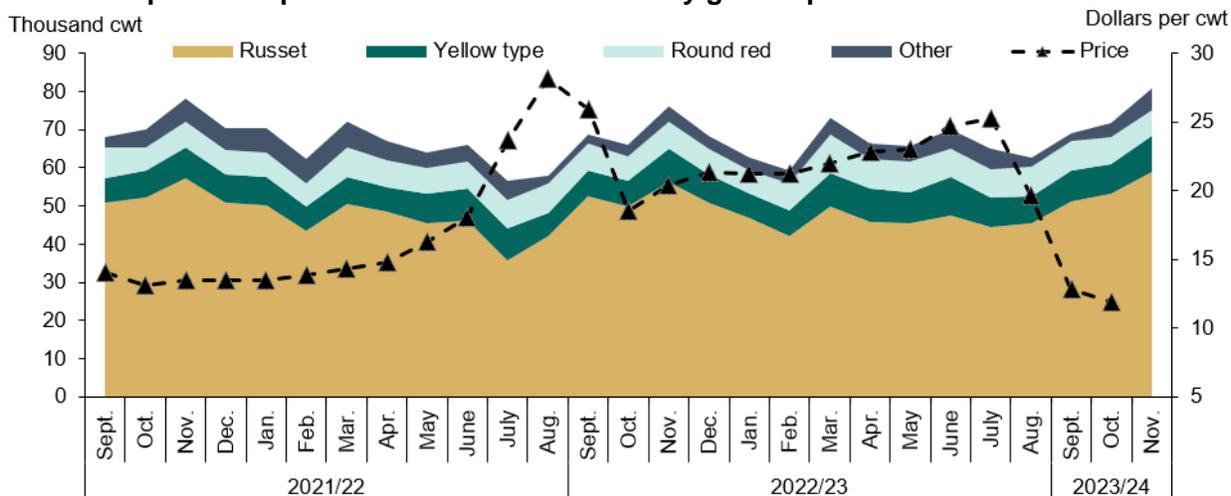
average high in 2022/23: During the September 2022–August 2023 marketing year, the season-average price (includes fresh and processing potatoes) reached a nominal record high of \$12.90 per cwt, a \$2.70 increase (up 26.5 percent) from last season's previous record high. In real (inflation-adjusted) 2012 dollars, the price was above \$10 for the first time since 1989, but below prices observed in the 1970s and 80s.

- In 2022/23, the U.S. season average processing potato price increased 19 percent year-over-year, the largest 1-year increase in over a decade. About two-thirds of potato sales (production less farm use, feed, loss, and shrinkage) are for processing use. Therefore, the season average potato price is sensitive to increases in processed potato prices. Some potato processors purchased table stock potatoes in 2022/23 to make up for lower inventories of processing potatoes, according to industry reports, which put additional pressure on fresh market grower prices (up 30 percent year-over-year to \$20 per cwt).
- During the first 2 months of the 2023/24 marketing year, fresh potato monthly grower prices fell below \$13 per cwt for the first time since June 2021 (figure 10). Domestic potato shipment volumes (September–November 2023) reflected increased supply compared with the same time last year for Russets (up 3 percent), round red (up 3 percent), yellow type (up 12 percent), and all other varieties (up 22 percent).
- Consumer prices for potatoes have also begun to ease, as the average retail price for potatoes fell in September, October, and November after climbing for 5 consecutive months (Bureau of Labor Statistics, CPI data). Leading up to the bulk of fall potato harvest, retail sales in July–September 2023 for all potato products were 9.5 percent higher in value and 1.7 percent lower in volume (fresh-weight equivalent) compared with the same quarter last year, according to a Potatoes USA retail sales report. Five-pound

consumer packs represented 57 percent of fresh potato retail sales volume. Russets remained the top fresh potato variety of choice with 63 percent of retail volume, followed by yellow (14 percent) and red varieties (13 percent).

Figure 10

Increased potato shipments and decreased monthly grower prices at the start of 2023/24¹



Note: Cwt = Hundredweight, a unit equal to 100 pounds. Thousand cwt = 100,000 pounds.

1/ Shipment totals exclude imports, chipping, and seed potatoes.

Source: USDA, Economic Research Service calculations using shipping volume data from USDA, Agricultural Marketing Service, Fruit and Vegetable Market News and monthly average fresh potato grower prices from USDA, National Agricultural Statistics Service.

Potato trade value up, as export volume flat in 2022/23: During the 2022/23 marketing year, U.S. exports of all potatoes and potato products (including starch but excluding dextrin) set a nominal record high of \$2.26 billion dollars—an 18 percent increase from the previous season.

- Overall export volume (product-weight basis) fell during 2022/23 MY, driven by an 8.4 percent decline in frozen french fries (table c11).
- Despite the smaller crop produced in 2022, U.S. exports of fresh potatoes rose 6 percent in 2022/2023 from the previous season to a total of 1.2 billion pounds. Organic fresh potato export volume set a new record at nearly 23.8 million pounds, accounting for 2 percent of total fresh potato export volume.

On the import side, both the value and volume of U.S. imports of potatoes and potato products rose in 2022/23 compared with the previous marketing year.

- U.S. imports of fresh potatoes (excluding seed) rose 17 percent in 2022/23 from the previous year to a record 1.3 billion pounds (almost exclusively from Canada), which helped ease domestic raw-product supply for table stock and processing potatoes.
- U.S. frozen french fry import volume also reached a new high in 2022/23 of 2.6 billion pounds (up 7 percent). Canada accounted for 86 percent of french fry volume followed by the European Union at 12 percent.

Mushrooms

Higher Grower Prices Offset Volume Decline in 2022/23

During the 2022/23 crop year (July–June), the value of all mushrooms (Agaricus and others), rose 2 percent from approximately \$1.018 to \$1.035 billion, as higher prices offset a decline in total volume of sales (table 2). A 5 percent increase in the volume of brown Agaricus (brown button, Crimini, and Portabello) mushroom sales (up 5 percent), did not offset a 9 percent decline in white Agaricus (white button) and a 7 percent decline in specialty mushroom production compared with the previous marketing year.

Table 2. Mushroom sales volume, price, and sales value

Item	---- Volume of sales ----		----- Price -----		----- Value of sales -----	
	2021/22	2022/23	2021/22	2022/23	2021/22	2022/23
	---- 1,000 pounds ----		----- Dollars per pound -----		----- 1,000 dollars -----	
Agaricus	679,888	645,679	1.37	1.46	930,930	945,127
White ¹	477,320	433,193	1.24	1.28	593,204	555,290
Brown ²	202,568	212,486	1.67	1.83	337,726	389,837
All Specialty	22,504	20,968	3.88	4.31	87,351	90,352
Shiitake	7,749	5,411	3.51	3.73	27,162	20,201
Oyster	5,007	7,432	3.04	2.99	15,209	22,187
Other	9,748	8,125	4.61	5.90	44,980	47,964
Total	702,391	666,647	1.45	1.55	1,018,281	1,035,479

Note: The marketing year for mushrooms begins in July and ends in June of the following year.

1/ USDA, Economic Research Service derives white mushroom statistics using the total Agaricus and Brown statistics.

2/ Includes Portabello and Crimini.

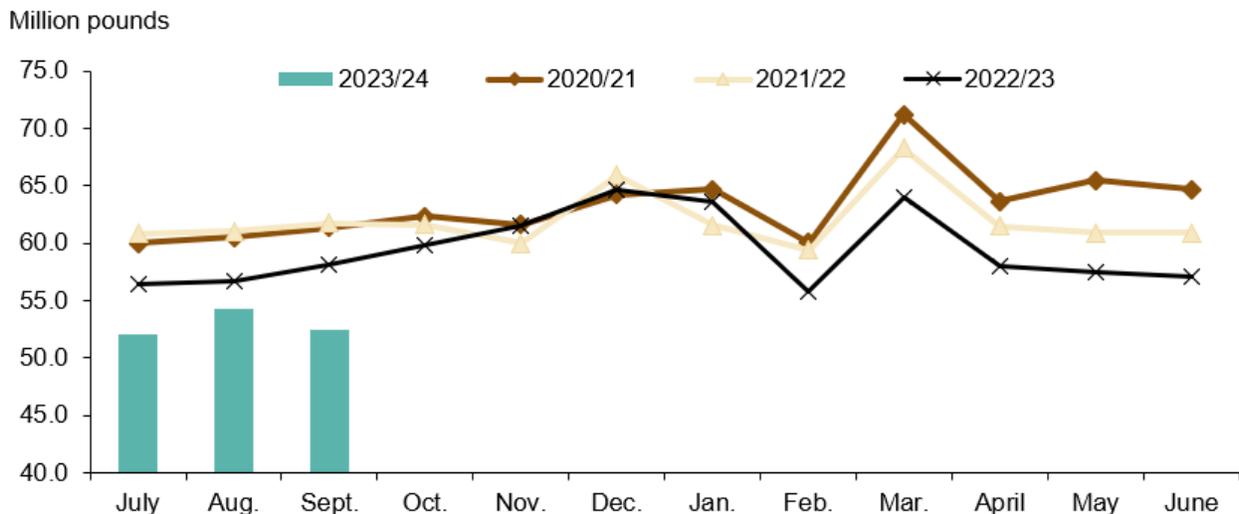
Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service, *Mushrooms*.

- Fresh Agaricus mushroom sales volume from domestic growers fell by double-digits in 2022/23 (down 11 percent) from last season, the lowest volume since the mid-1990s. The 2022/23 fresh Agaricus production continued a downward year-over-year production trend that started in 2016/17. The two largest mushroom producing States, Pennsylvania and California, both reduced growing area in production in 2022/23 compared with the previous season.
- In 2022/23, mushroom growers recorded 99.9 million pounds in processed Agaricus sales volume—the largest volume in a decade. Growers in Pennsylvania accounted for 85 percent of processed volume and received an average of 75.5 cents per pound, a 15 percent increase from 2021/22. Despite the increase, processed mushroom imports (fresh-weight basis) still accounted for 77 percent of domestic consumption.
- Growers reported that 2022/23 specialty mushroom sales valued \$90.4 million, a 3 percent increase from 2021/22. While total specialty mushroom volume decreased by 7

percent, oyster mushroom volume increased by 48 percent from the previous season—representing more than a third of all specialty mushroom production.

- Growers sold a record high 88.1 million pounds of organic mushrooms in 2022/23. Total organic mushroom volume represented 13.2 percent of total mushroom production.
- The preliminary 2022/23 per capita availability for all mushroom products (including truffles) is 3.4 pounds per person, a 7 percent decline from 2021/22. A decrease in domestic production coupled with lower volumes of both fresh mushrooms and imported processed mushroom products (fresh-weight equivalent) resulted in the lowest per capita mushroom consumption since the early 1980s.
- According to the USDA, NASS *Mushroom Report* (August 2023), growers intend to increase *Agaricus* bed and tray production area (total fillings) by 20 percent to 132 million square feet in 2023/24. However, early 2023/24 (July–September 2023) domestic monthly shipment volume lagged volumes observed in recent seasons (figure 11).

Figure 11
U.S. fresh mushroom domestic shipment volumes, 2020/21–2023/24



Note: The marketing year for mushrooms begins in July and ends in June of the following year.
 Source: USDA, Economic Research Service based on data from the National Mushroom Council's *Monthly Shipping and Marketing Report* (November 2023).

- During the first 4 months of 2023/24 (July–October 2023), fresh mushroom import volume was down 2 percent as higher volumes from China were not enough to offset declines from top suppliers Canada (down 3 percent) and Mexico (down 23 percent). Import's share of fresh mushroom consumption has tripled over the last decade, accounting for one-quarter of total supply in 2022/23.

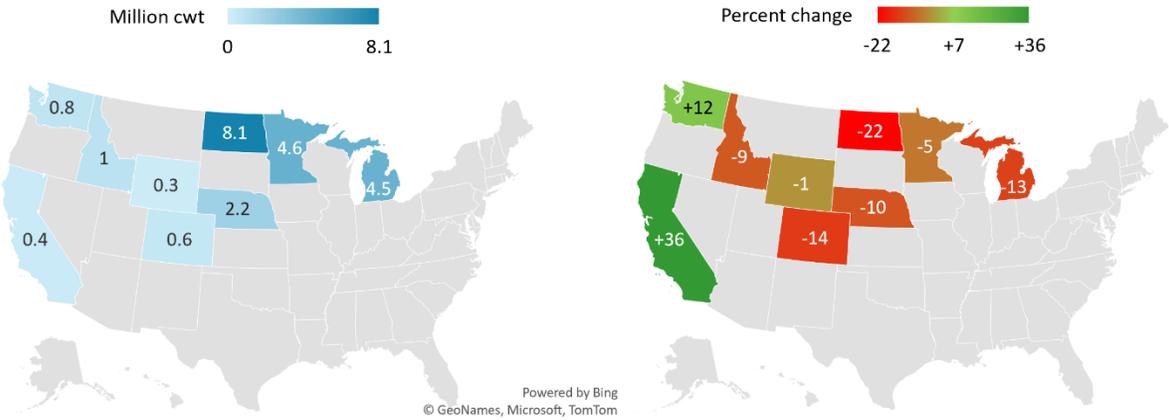
Dry Edible Beans

Dry Bean Production and Planted Area Down

The USDA, NASS *Crop Production* report indicates that planted area for dry edible beans (excluding chickpeas) declined 5 percent from 2022 to 1.18 million acres in 2023. This change, along with a 7 percent drop in yields, decreased production by 13 percent from 2022 to 2023.

- Although there were no class acreage forecasts in the October 2023 USDA, NASS *Crop Production* report, the August Crop Production report forecasted acreage by class. Most planted beans in 2023 are estimated pintos (522,200 acres), black beans (298,200 acres), and navy beans (144,200 acres), which accounted for 78 percent of U.S. planted area in 2023.
- Planted acreage declined for light-red kidney beans (down 33 percent), dark-red kidney beans (25 percent), navy beans (11 percent), and pinto beans (8 percent). However, these reductions were partially offset by increases in the planted acreage of black beans (up 9 percent), small red beans (up 44 percent), and Great Northern beans (up 73 percent) from the previous year.
- Though national dry bean production decreased from 2022 to 2023, there was considerable variation from State to State. For instance, production decreased by 22 percent in North Dakota, but increased by 36 percent in California. The top three dry bean producing States, North Dakota, Michigan, and Minnesota represent 77 percent of domestic production. In these States, production decreased by 22, 13, and 5 percent, respectively (figure 12).

Figure 12
Dry bean production in 2023 and percentage changes by State from the previous year/1



Note: Cwt = hundredweight, a unit of measure equal to 100 pounds.
 1/ Excludes other States.
 Source: USDA, Economic Research Service, using data from USDA, National Agricultural Statistics Service, *QuickStats*.

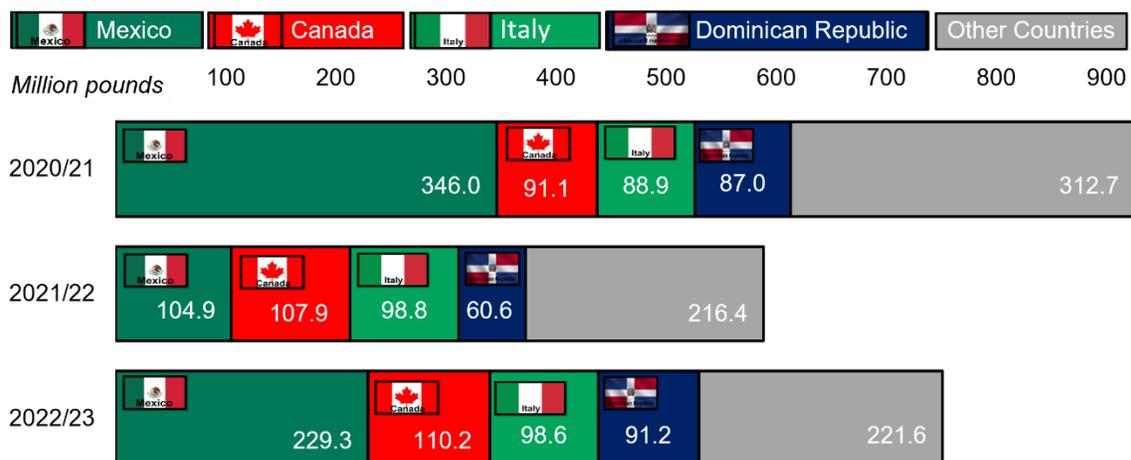
Dry Bean Imports and Exports Up; United States Still Net Exporter

The 2022/23 dry bean marketing year spans September 2022 through August 2023. Dry bean export volumes increased by 28 percent from 2021/2022 to 2022/2023, from 589 million to 751 million pounds. Imports increased 1 percent from 325 million to 328 million pounds during that period.

- In 2021/2022 exports exceeded imports by approximately 264 million pounds. In 2022/2023, net exports increased by approximately 60 percent to 423 million pounds.
- The United States exported to over 75 countries in 2022/23 with 70 percent of total U.S. exports destined for the leading countries (all exceeding 50 million pounds)—Mexico (31 percent), Canada (15 percent), Italy (13 percent), and the Dominican Republic (12 percent) (figure 13).

Figure 13

U.S. dry bean crop-year export volume to top export destinations exceeding 50 million pounds

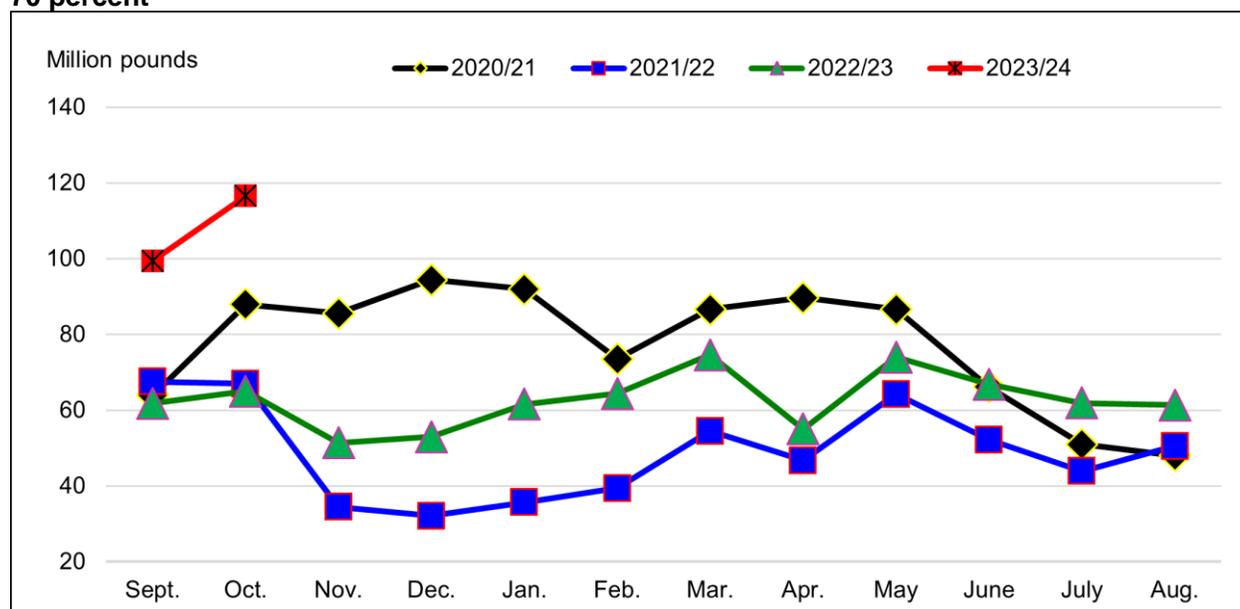


Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

- The increase in exports from the 2021/22 crop year are mostly all-kidney beans (up 39 percent), pinto beans (up 123 percent), and black beans (up 45 percent).
- The increase in export volume from the previous year outweighed large percentage declines in blackeye beans (down 79 percent), cranberry beans (down 51 percent), and other unclassified beans, which declined by 50 percent (table d13).
- The 2023/24 dry bean marketing year is under way, with only 2 months of data available through October 2023. Exports are currently about 70 percent above the first 2 months of the previous marketing year (figure 14). Export statistics by dry bean class and by export destination countries are in table d13 of the appendix.

Figure 14

U.S. monthly dry bean export volume by marketing year: 2023/24 is above previous year by 70 percent



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

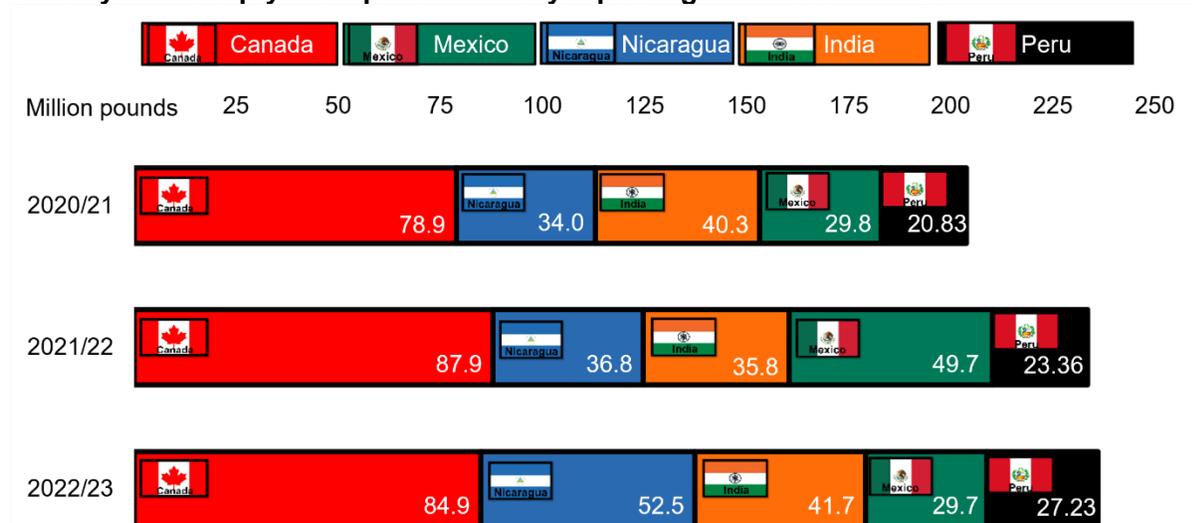
Dry Bean Imports

The United States imported 328 million pounds of dry beans from over 60 countries in 2022/23, with over 70 percent of total U.S. imports originating from the top 5 countries.

- The top 5 countries were Canada (26 percent), Nicaragua (16 percent), India (13 percent), Mexico (9 percent), and Peru (8 percent) (table d14).
- Canada remained the top source of U.S. dry bean imports in the 2022/23 crop year despite a 3 percent decline from the 2021/22 crop year.
- Nicaragua replaced Mexico for the second top foreign source of dry beans in 2022/23. Mexico dropped to fourth from the previous crop year, declining 40 percent from the 2021/22 crop year.
- Increased volume from Nicaragua (up 43 percent from 37 million to 53 million pounds) and imports from both India and Peru outweighed significant reductions in volume from other countries (figure 15).

Figure 15

U.S. dry bean crop-year import volume by top 5 origination countries/1



1/ Only includes U.S. import volume for the top 5 origination countries.

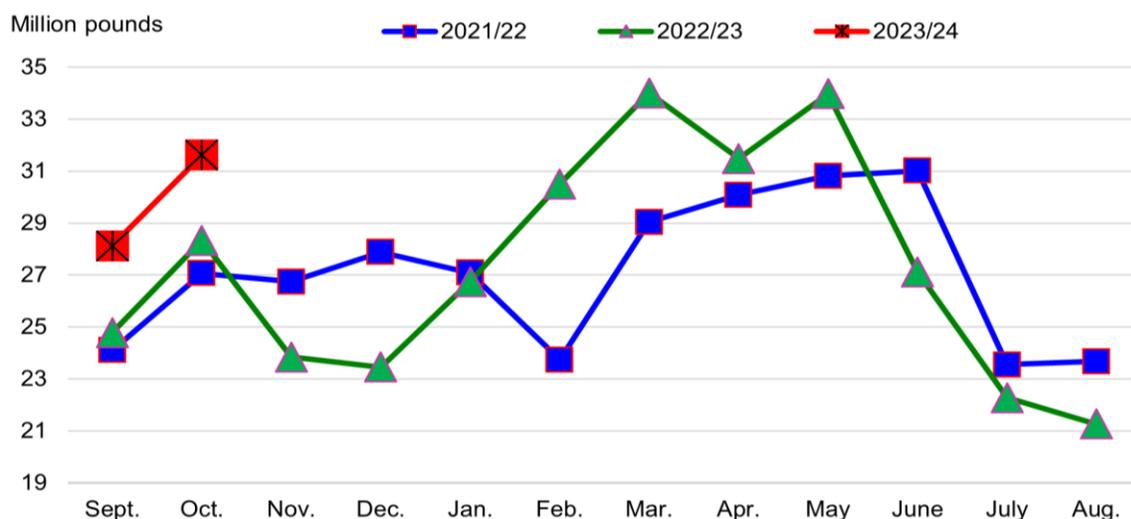
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census.

The top five bean classes imported in the 2022/23 marketing year were the other bean class category (which includes pigeon pea beans, bambara beans, broad beans, horse beans, and other general bean classes), all types of kidney beans (up 19 percent), mung beans (up 17 percent), black beans (up 26 percent), and pinto beans (down 13 percent).

Imports in September and October 2023 are about 13 percent above the first 2 months of the previous marketing year with all-kidney beans increasing by 53 percent and pintos increasing by 62 percent (table d14).

Figure 16

U.S. monthly dry bean crop-year import volume by marketing: 2023/24 above previous year by 13 percent



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

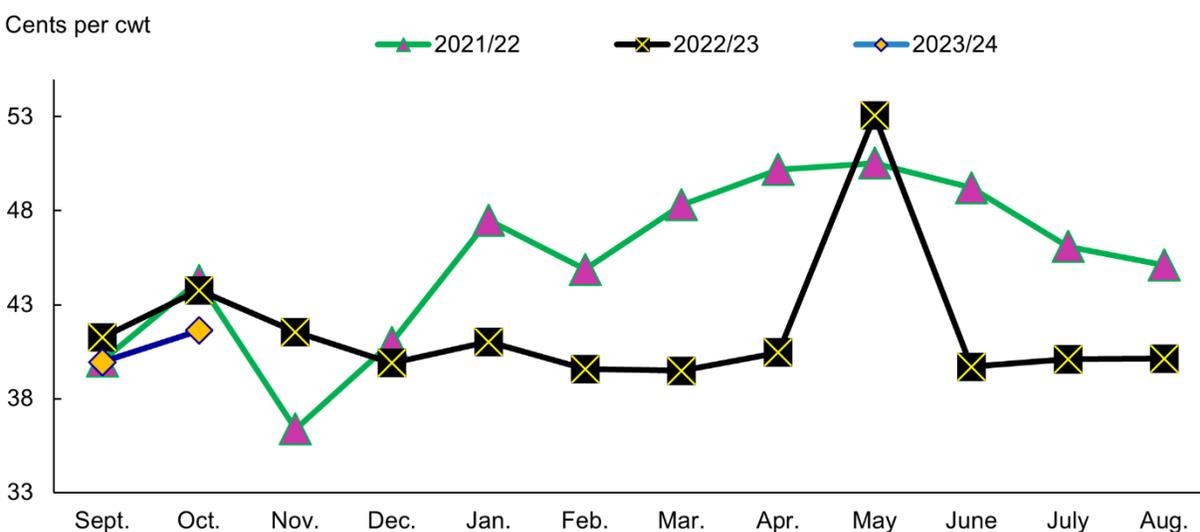
Dry Bean Price Changes Modest Going Forward

The all-dry bean price, excluding chickpeas, for the 2023/24 marketing year through October 2023 averaged 2 percent below the previous crop year (table d12). Production, yield, and world demand influence markets for each dry bean class and characterize the dry bean price outlook. Dry bean prices are also typically positively correlated with projected corn and soybean prices.

USDA, ERS forecasts modest price changes in comparison to the large gains achieved in 2021/22, with marginal declines for pinto and black beans and slightly higher prices for navy and kidney beans in the 2023/24 marketing year. Assuming continued strong export demand, declining yield and production in key dry bean States will likely reduce stocks and strengthen dry bean price prospects in 2023/24.

Figure 17

U.S. dry edible beans: Average monthly grower prices in 2023/24 trending down



Note: Cwt = hundredweight, a unit of measure equal to 100 pounds.

Source: USDA, Economic Research Service calculations using National Agricultural Statistics Service, *Agricultural Prices*.

Dry Edible Peas and Lentils

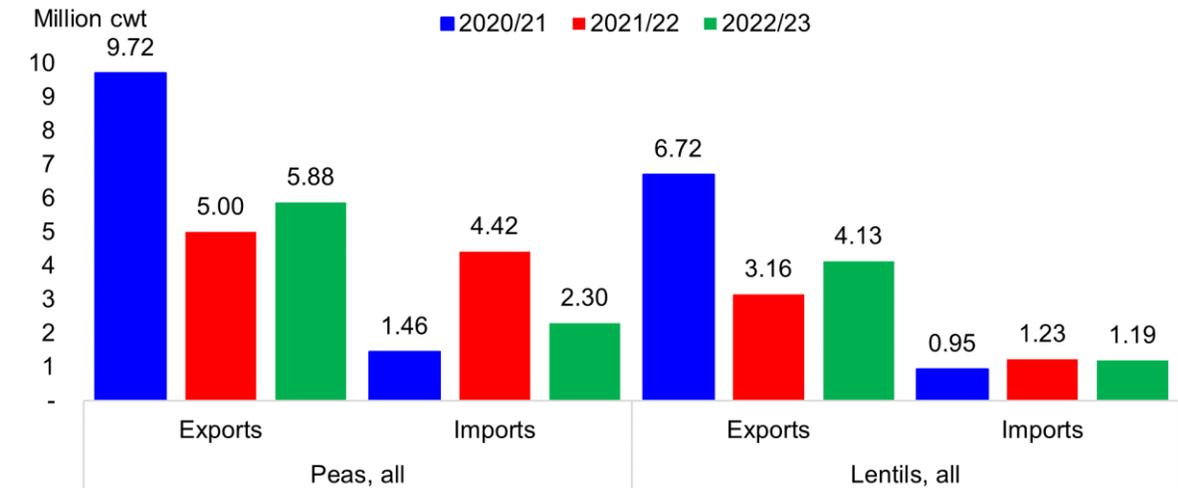
Production and Planted Area

The USDA, NASS *Crop Production* report indicates that planted acreage for dry peas increased by 3 percent in 2023, harvested area increased by 4 percent, production increased by 14 percent, and yield increased 9 percent, year over year (table e15). Lentil production is up 4 percent due to a 23 percent increase in yield, despite a 17 percent reduction in planted acreage and a 16 percent reduction in harvested acreage (table e16).

Dry Pea and Lentil Trade: United States Expanding Net Export Status

The United States is a net exporter of dry peas and lentils. In the 2022/23 marketing year (July–June) most lentil exports went to Canada (41 percent). Other top lentil export destinations vary from year to year, but Mexico (11 percent), Spain (9 percent), Sudan (8 percent), and Columbia (5 percent) round out the top five in 2022/23. The top five dry pea export destinations accounted for 63 percent of volume in the 2022/23 marketing year. Ethiopia (33 percent) was the top destination followed by Canada (9 percent), Yemen (9 percent), China (9 percent), and the Philippines (3 percent). Contrasting trends in dry pea and lentil trade volume over the past 3 complete marketing years are illustrated in figure 18. Marketing year trade volume by class and country from 2020–23 and the 2023/24 marketing year through October 2023 are provided in table e17 and table e18.

Figure 18
U.S. dry edible pea and lentil exports up and imports down in 2022/23



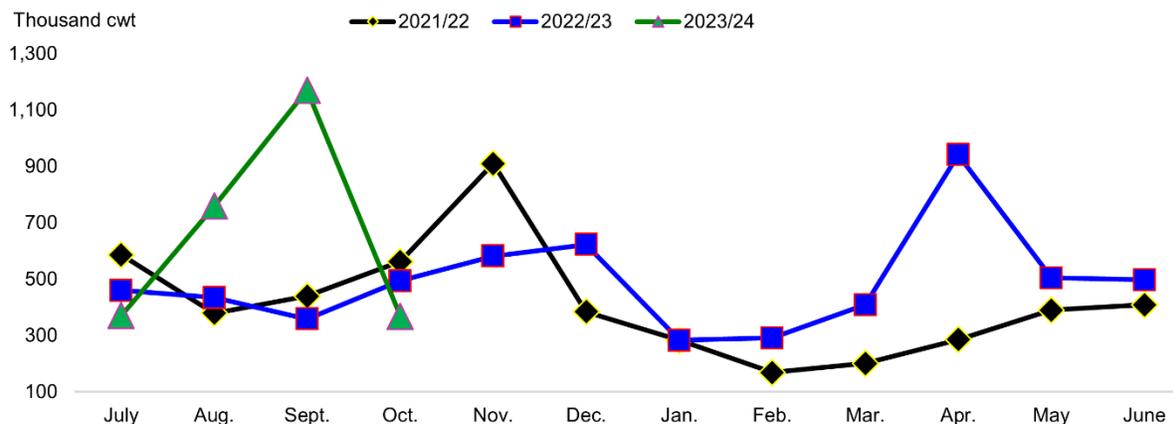
Note: cwt = hundredweight, a unit of measure equal to 100 pounds.
 Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service.

The following bullet points describe trends in dry pea and lentil trade for the first 4 months of the current (2023/24) marketing year using the most recent data reported by the U.S. Department of Commerce, Bureau of the Census:

- Dry pea export volume increased 53 percent year over year, driven by increases in pea exports to China (up 1,469 percent), Philippines (up 218 percent), and Canada (up 145 percent). Approximately 91 percent of the dry peas exported in 2023/24 were split peas or green peas, for which export volumes increased by 52 and 217 percent (respectively) year over year.
- Dry pea import volume decreased 46 percent compared with the previous marketing year, driven by decreases in all pea types including yellow peas (down 79 percent), split peas (down 28 percent), and green peas (down 37 percent).

Figure 19

U.S. dry pea export volume in 2023/24 is 53 percent above the previous marketing year for July–October 2023



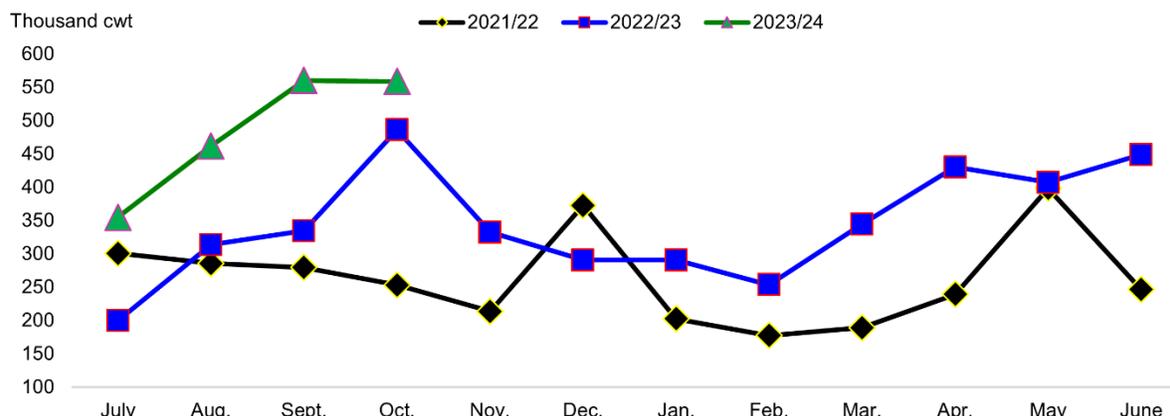
Note: Cwt = hundredweight which equals 100 pounds.

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

- Lentil export volume increased 45 percent from the previous marketing year, driven by a 77 percent increase in exports to Canada. This increase more than offset reductions in volume to Sudan (down 55 percent) and Mexico (down 6 percent). Increased lentil exports to Spain (up 50 percent) and Columbia (up 118 percent) have also significantly contributed to lentil export volume in the 2023/2024 marketing year.
- Lentil import volume decreased 9 percent from the previous marketing year, with declining generic and red lentils outweighing an increase in green lentils. Much of the decrease stems from reductions in imports from Canada (down 15 percent), which offset increases in volumes from India, Turkey, Mexico, and United Kingdom.

Figure 20

U.S. lentil export volume in 2023/24 is 45 percent above the previous marketing years for July–October 2023



Note: Cwt = hundredweight which equals 100 pounds.

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

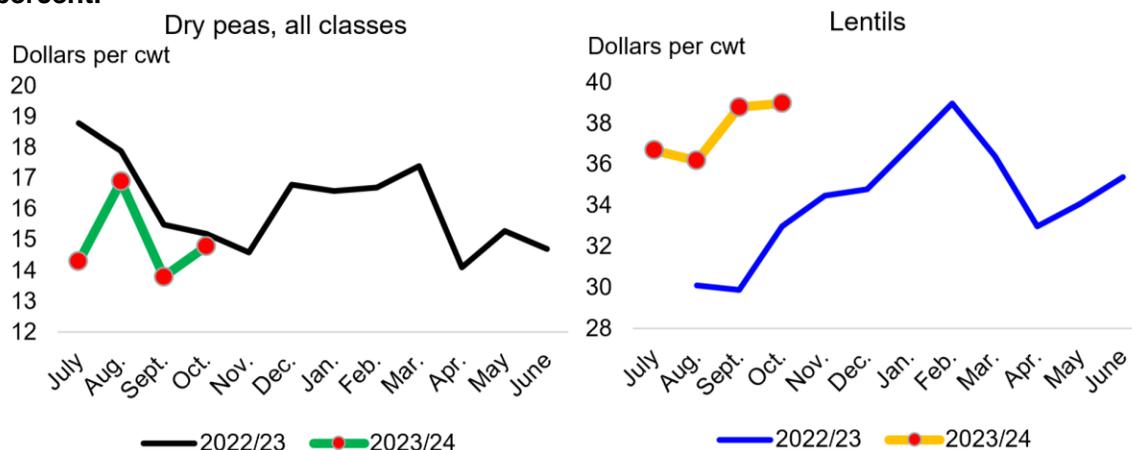
Dry Edible Pea Prices Down and Lentil Price Up

Average dry pea prices through October for the July 2023–June 2024 marketing year are 11 percent below the previous crop year (table e15). Production, yield, and world demand influence markets for each dry bean class and characterize the dry bean price outlook.

- Dry pea grower prices in 2023/24 are anticipated to decline from their 2022/23 levels in 2023/24. The expected decline is driven by a combination of increased area and higher yields elevating production as the dry pea market continues to recover from low yields in 2021 and declining stocks.
- Lentil prices are expected to increase later in the 2023/24 growing season as the global supply of lentils falls and exports by domestic producers rise.

Figure 21

Average monthly grower prices in 2023/24: Dry peas down 11 percent and lentils up 23 percent.



Note: Cwt = hundredweight, a unit of measure equal to 100 pounds. No lentil price available in July 2022.

Source: USDA, Economic Research Service calculations using National Agricultural Statistics Service, *Agricultural Prices* and *QuickStats*.

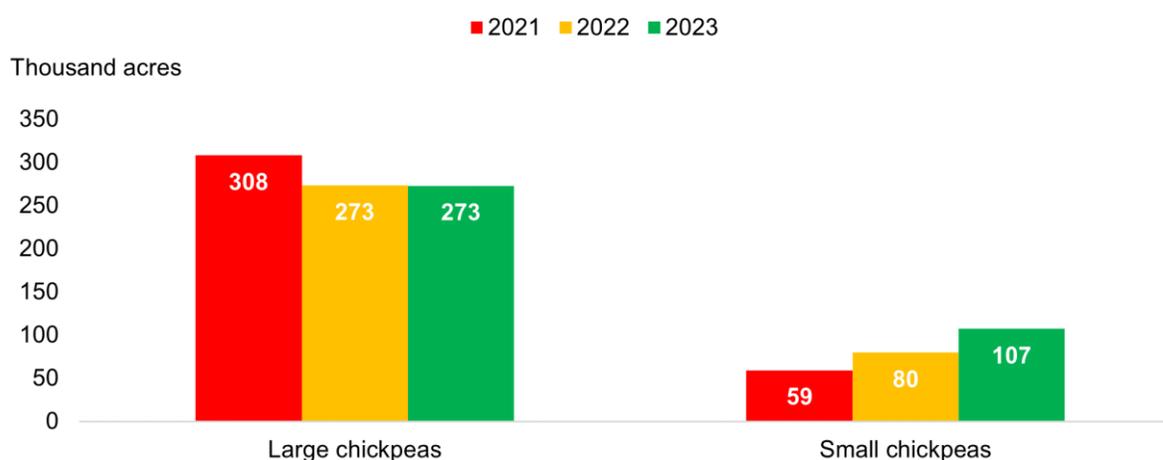
Chickpeas

Prospective Chickpea Area

The USDA, NASS September *Crop Production* report indicates that 380,000 acres of chickpeas were planted in 2023, an 8 percent increase over the previous year. Chickpea harvest, yield, and production are also expected to increase, by 9 percent, 36 percent, and 24 percent respectively (table f21).

Figure 22

U.S. large and small chickpea planted acres, 2021–23 1/



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

The following bullet points describe trends in chickpea supply, price, crop value, and trade:

- Estimates of chickpea inventories for June 1 and December 1 are reported by USDA, NASS. The June 2023 chickpea all class stock level, which reflects inventories at the end of the July 2022–June 2023 chickpea marketing year, was 150 million pounds—24 percent below the previous year. Stock levels are steadily trending down after the sharp spike (over 340 percent) in stocks in June 2019. June 2023 marks the third straight year of consecutive declining chickpea stocks.
- A comprehensive listing of USDA, NASS reported estimates of area, yield, production, price, and crop value for 2016–23 for chickpea-all classes, large, and small chickpeas in appendix table f21.

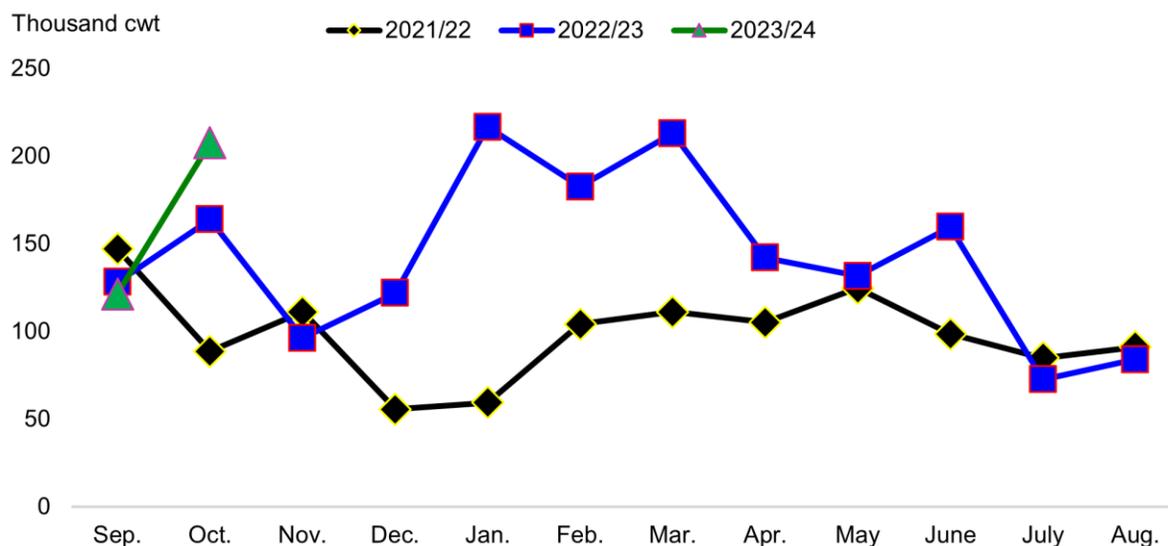
Chickpea Imports and Exports in 2022/23

- The United States is typically a net chickpea exporter (table f19). In 2022/23 the top three countries, which comprised 70 percent of the total chickpea export market share, were Canada (34 percent), Spain (27 percent), and Pakistan (9 percent).

- From September 2022 to August 2023, domestic producers exported 1,713 thousand cwt of chickpeas. This is a 45 percent increase from the 2021/2022 marketing year (table f22).
- Chickpea exports were 13 percent higher in September and October 2023 than in the same months last year (table f19).
- From September 2022 through August 2023, foreign producers shipped 1,827 thousand cwt of chickpea imports to the United States. This 56 percent increase in import volume was driven by a 129 percent increase in garbanzo chickpeas, which offset a 57 decrease in Kabuli chickpeas (table f20).
- Trade volume by class from 2019–23 for the respective chickpea marketing years are provided in appendix table f19 and table f20.

Figure 23

U.S. chickpea export volume by marketing year months September–August



Note: Cwt = hundredweight which equals 100 pounds.

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

Chickpea Prices

Increases in the global supply of chickpeas is expected to put downward pressure on chickpea prices in 2023/24. However, prices for all three pulse crops remain above their long-run trend due to greater exports and increased domestic use.

Special Article

From Freezer to Pantry: Market Dynamics and Retail Price Trends of Processed Snap Beans

Wilma V. Davis, Kate Vaiknoras, and Gary Lucier

Snap Bean Overview: An American Dietary Staple

The processed snap bean is a staple vegetable product that has graced dinner plates across the United States for generations, acting as a familiar accompaniment to main dishes. Snap bean is a catchall term that includes green beans, string beans, yellow wax beans, Italian (Romano) green beans, and french green beans. It does not include processed products made from dry edible beans such as pinto, navy, and kidney beans. Snap beans are harvested and eaten at the immature pod stage—they are most tender and succulent before the seeds cause the pod walls to expand. By contrast, their closely related cousins, dry beans, are harvested after the seeds are fully developed and the pods are dry.

In general, processed vegetables play a pivotal role within the broader vegetable market. From 2020 to 2022, U.S. per capita availability² of processed vegetables averaged 113 pounds (fresh-weight basis)—45 percent of total vegetable availability. Canned, frozen, and dehydrated vegetables preserve nutrients, providing consumers with lasting nutrition and storage benefits available year-round in a cost-effective manner. This article analyzes economic trends in processed products containing snap beans, which generally are sold canned or frozen.

This article analyzes data collected or aggregated by USDA, National Agricultural Statistics Service (NASS), USDA, Economic Research Service (ERS), the U.S. Department of Commerce, Bureau of the Census, and private sources to describe market supply, demand, and trends in prices for processing snap beans. Household retail purchase data from Circana (formerly Information Resources, Inc. or IRI), is the source of the data used to analyze retail trends from 2013 through 2021. A comparison of data collected before, during, and after, the

² Per capita availability is calculated as production plus imports, minus exports, factoring in inventory and storage adjustments, and then measuring this total on a per person basis. This estimate does not include factors like food loss or waste, which are analyzed through other USDA, ERS availability metrics.

Coronavirus (COVID-19) pandemic offers insights into how consumer preferences and market dynamics have changed over time.

Processing Snap Bean Production Exceeds Fresh Market Output

In the United States, snap beans are largely produced for three distinct markets—fresh, canning, and freezing. These markets operate independently, with separate supply, demand, and price characteristics. From 2020 to 2022, 83 percent of the 1.45 billion pounds of snap beans produced in the United States were processed, while the remaining 17 percent were sold fresh. The share of domestic output sold in the fresh market continues to decrease as imports garner an ever-larger market share. The most recently collected data reported by USDA, NASS, notes that an average of 65 percent of domestic processing production was canned from 2013 to 2015, with freezing accounting for most of the remainder. A small amount of snap beans is used for dehydrated products.

Prices for snap beans destined for processing are much lower than prices for snap beans sold fresh. From 2020 to 2022, the season-average farm price for fresh snap beans averaged 73.6 cents per pound. The average price of snap beans destined for processing was 8.6 cents per pound, just over a tenth of the fresh snap bean price. Virtually all snap beans for processing are machine harvested, which helps limit costs. They are processed within hours of harvest to help maintain quality and nutrient content. Because of their low prices, snap beans for processing accounted for only 36 percent of the \$282 million in farm cash receipts for snap beans from 2020 to 2022, even though they accounted for 83 percent of production.

Like many agricultural commodities, snap bean production is concentrated on large farms. According to the 2017 Census, 19 percent of farms producing snap beans for processing accounted for 84 percent of national harvested area. Each large farm harvested at least 100 acres of snap beans destined for processing. About two-thirds of the farms producing snap beans for processing grow less than 25 acres each and account for less than 1 percent of the total harvested area. In the United States, virtually all snap beans grown for processing are harvested under contracts between growers and processors.

U.S. Processing Snap Bean Production Is Trending Lower

The Food and Agriculture Organization of the United Nations reported that the United States was the top producer of snap (string) beans from 2019–21 (the latest years available), accounting for 52 percent of global output. Rounding out the top five global producers are Mexico (9 percent), Morocco (9 percent), Philippines (8 percent), and Turkey (6 percent).

USDA, NASS reports processing snap bean production estimates on a farm-weight basis³. U.S. production of snap beans for processing has declined 22 percent from an average of 1.5 billion pounds in 2000–2002 to 1.2 billion pounds in 2020–2022. Production peaked in 1989 at 1.7 billion pounds and began trending lower in the early 2000s. This is consistent with a decline in acreage; the U.S. Census of Agriculture reported that harvested acreage for processed snap beans declined 29 percent from 2002 to 2017.

Wisconsin (50 percent of 2020–22 output), New York (14 percent), and Michigan (11 percent) are the top producers of snap beans for canning and freezing. Oregon (9 percent) and Illinois (8 percent) round out the top five States. From 2013 to 2015 (the final 3 years official processing yield data were available), processing snap bean yield averaged 4.5 tons per acre, up 20 percent from 2000 to 2002. Fitting a linear trend line suggests that snap bean yields increased by about 94 pounds per harvested acre per year from 1985 to 2015.

Import Influx: The Surge in Processing Snap Bean Imports

Over the past 20 years (2000–2002 to 2020–2022), the average annual import volume of processed snap beans surged 196 percent, from 115 million to 225 million pounds. Imports now account for 14 percent of domestic availability (excludes canned stocks), compared with 5 percent 20 years ago. In 2022, the leading sources of snap bean imports to the United States were Mexico, Guatemala, and Canada. Canned snap beans make up 31 percent of processed snap bean import volume, with a total valuation of \$40.2 million in 2022. Frozen snap beans make up 69 percent of import volume and are valued at \$89.4 million. The leading foreign sources by volume in 2022 were Canada (21 percent), Mexico (17 percent), and France (14 percent) for canned green beans. Leading frozen green bean sources were Canada (37 percent), Belgium (15 percent), and Egypt (11 percent).

Gentle Waves: The Steady Course of Snap Bean Exports

Though imports have increased dramatically since the turn of the century, exports have remained fairly steady. From 2020 to 2022, snap bean export volume averaged 36 million

³ The farm-weight basis for reporting processing snap bean production estimates refers to the weight of the crop as delivered from the farm to the processing plant door. This measurement is critical for accurately quantifying the initial volume of the crop destined for processing. It is important to note that post-processing weights may differ from the initial farm-weight measurement, potentially being higher or lower, depending on the specific processing methods and additional materials used. Thus, using the farm-weight basis ensures an accurate representation of the raw product available for processing as it arrives at the processing facility.

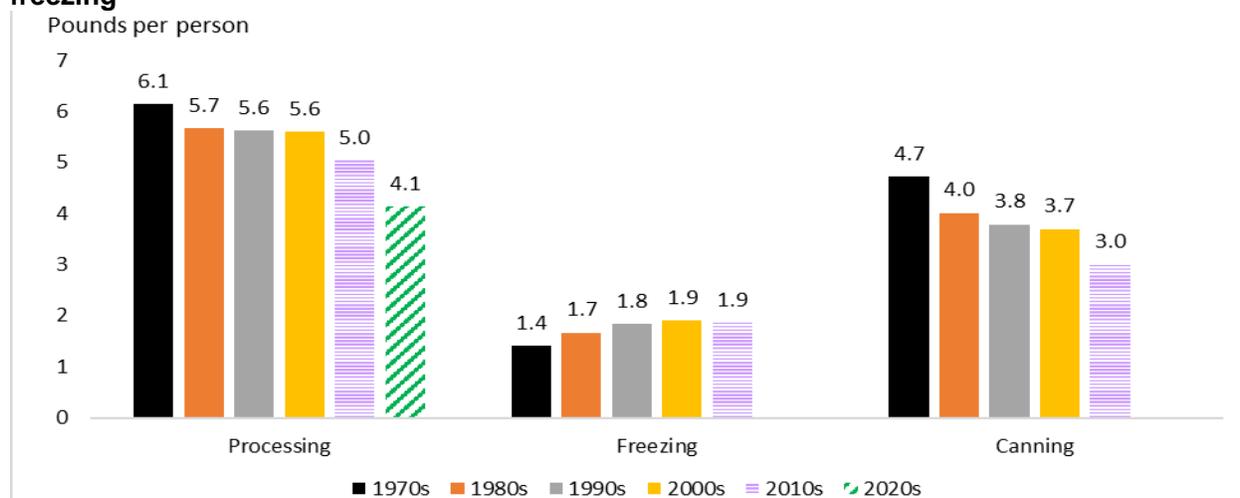
pounds—down 6 percent from the average annual exports from 2000 to 2002. Exports now account for 2 percent of domestic availability—about the same as 20 years earlier.

Canned snap bean exports were valued at \$4.8 million in 2022. In agricultural market analysis, the weight of processed commodities like canned snap beans is often adjusted to their fresh weight equivalent. This standard practice, known as measuring on a “fresh weight basis,” allows for a direct and consistent comparison across all forms—fresh, canned, or frozen. After applying this measurement method, canned snap beans accounted for 30 percent of 2022 processed snap bean export volume. The leading canned snap bean export markets by volume in 2022 were Canada (35 percent), Dominican Republic (18 percent), and Costa Rica (6 percent). Frozen snap bean exports were valued at \$11.5 million in 2022. On a fresh equivalent basis, frozen products accounted for 70 percent of 2022 processed snap bean export volume. The leading frozen snap bean export markets by volume in 2022 were Canada (76 percent), Mexico (12 percent), and Japan (3 percent).

Processing Snap Bean Domestic Availability Trending Lower

Since the early 1930s, the net per capita availability of processing snap beans has trended upward, peaking in 1973 at 6.6 pounds per person. After a slight decline to 5.7 pounds in the mid-1980s, availability remained relatively stable, about 5.6 to 5.7 pounds through the 1990s and 2000s. The 2010s saw a decline to 5.1 pounds per person, despite a temporary spike to 6.0 pounds in 2019.

Figure 24
Average snap bean per capita availability trending downward for canning and upward for freezing



Note: Freezing and canned estimates discontinued after 2019 (2010s decade). Average figures for freezing and canning are rounded to 1 decimal place. Therefore, their sum as an estimate for total processing may have a small discrepancy due to rounding. Source: USDA, Economic Research Service based on data from Vegetables and Pulses Yearbook Tables, USDA, National Agricultural Statistics Service.

Most recently, from 2020 to 2022, net per capita availability fell to 4.1 pounds per person, with an estimated 1.4 billion pounds of processed snap beans available, a 13 percent decrease compared to 2000–2002.

Most of the downward pressure on snap bean availability stems from decreases in the availability of canning snap bean products (figure 24). According to USDA, ERS, per capita availability of snap beans for canning declined 25 percent, on average, from 2000–2002 to 2017–2019; availability of frozen snap bean products decreased 1 percent. In general, canned vegetable use has trended downward for decades as consumer preferences changed.

Retail Sales Trends for Snap Beans

Circana collects and sells household retail purchase data containing information about individual retail purchases and prices. The data set does not include information on food that is purchased at restaurants, institutions such as schools and hospitals, or via home delivery services.

Previous USDA, ERS research based on total diet surveys indicates that the retail channel accounts for most consumer sources of snap beans. Research indicated food at home (largely retail sourced) accounted for more than 80 percent of canned and frozen green beans consumed in the United States (Lucier et al., 2007).

Information on frozen and canned snap bean retail purchases was obtained from the Circana household-based data set and product dictionaries for 2013 to 2021. The household data included responses from over 120,000 surveyed households that report on their retail food purchases, including each item they purchased, the quantity, and how much they paid. The dataset also provides household weights which allow for calculations of nationally representative retail purchases and prices (Muth et al., 2016). The product dictionary dataset includes universal product codes (UPC) and descriptions of products. Products are organized by department (e.g., frozen department), aisle (e.g., frozen fruits and vegetables) and category (e.g., frozen plain vegetables).

Methodology: Circana Data Extraction and Analysis

The first step in the analysis was to identify frozen and canned snap beans from the list of products in the Circana product dictionaries. After filtering products from appropriate departments, aisles, and categories, narrower product organization delineations were used to identify processed snap bean products. Final lists of UPC descriptions were examined thoroughly to ensure that no similarly named products were included. Lists of similar excluded

products (e.g., other categories of frozen vegetables) were also examined to ensure that relevant products were not left out.

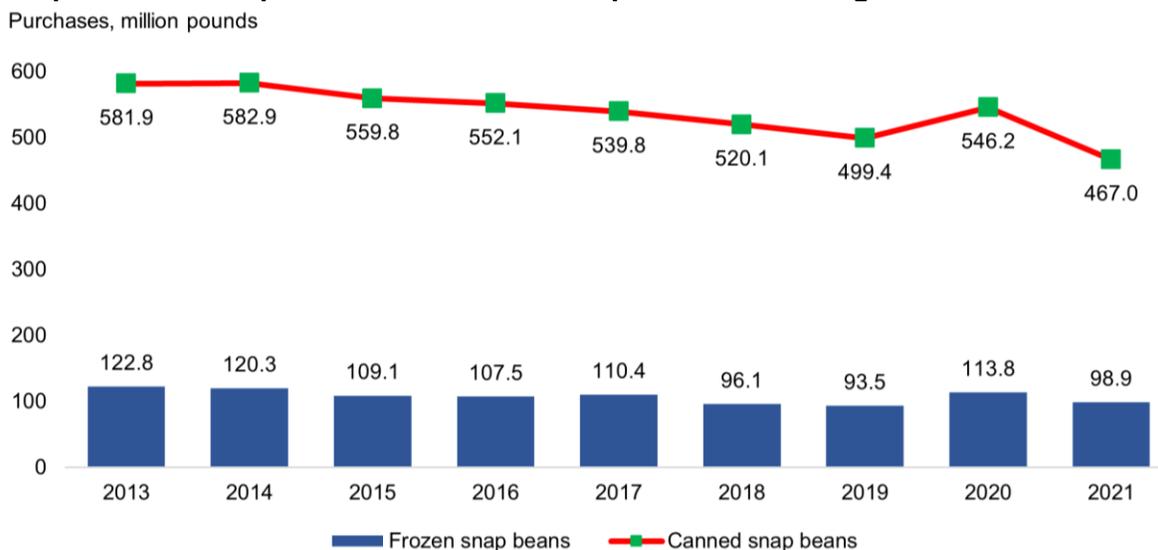
Some products that included or may have included snap beans were excluded from the analysis due to difficulties isolating and measuring quantities of snap beans solely. For instance, mixed vegetable blends, and frozen prepared foods that include many ingredients, were excluded from the analysis. For frozen products, if a prepared food included only the product of interest (e.g., frozen steamed green beans), it was included, but products where the item was simply one of many ingredients (e.g., frozen green bean casseroles) were not included. Thus, the purchased quantities reported in this study are underestimates of total purchases. This issue is more relevant for frozen products that come in a wide variety of blends and preparations compared to canned vegetables which are more often sold individually.

Summary of Circana Retail Data Findings: Purchases and Prices

From 2013 to 2021, the retail volume of canned snap beans ranged from 467 million to 582 million pounds per year, with the lowest purchases in 2021 (figure 25).

Figure 25

Retail purchases: Snap bean frozen and canned purchases trending downward



Source: U.S. Department of Agriculture, Economic Research Service based on data from Circana.

Frozen snap bean retail purchases ranged from approximately 94 million to 123 million pounds annually. Frozen snap bean purchases declined 24 percent from 2013 to 2019; canned purchases declined 14 percent. These declines may be partly attributable to a reduction in the share of food-at-home purchases over this period (USDA, ERS, 2023).

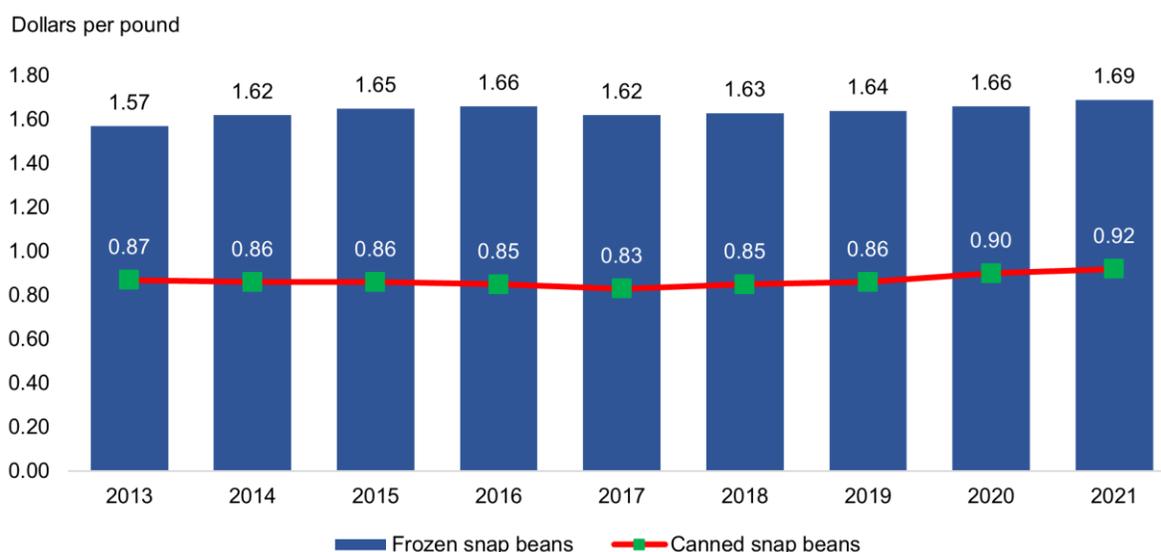
At the onset of the COVID-19 pandemic in 2020, canned snap bean purchases increased by 9 percent (year over year) and frozen green bean purchases increased by 22 percent. This may

stem from increases in food-at-home purchases during the pandemic. Other products such as meat also saw large year-over-year increases in 2020 compared to 2019, with returns to previous year purchases by the end of 2020 (Vaiknoras et al., 2022).

As impacts from the pandemic waned, snap bean purchases declined. From 2020 to 2021 purchases of canned and frozen snap bean products dropped by 15 and 13 percent, respectively. In total, purchases of frozen snap beans declined 19 percent, and purchases of canned snap beans dropped 20 percent, from 2013 to 2019. Snap bean retail prices were higher for frozen products during this period (ranging from \$1.57 to \$1.69 per pound) than for canned products, which ranged from \$0.83 to \$0.92 per pound (figure 26). Prices trended upward from 2013 to 2021: 6 percent for canned green beans and 8 percent for frozen.

Figure 26

Retail prices: Snap bean frozen and canned prices trending upward



Source: U.S. Department of Agriculture, Economic Research Service based on data from Circana.

Final Thoughts: Summarizing Snap Bean Trends

The analysis of the snap bean market reveals a nuanced picture of declining demand, especially in the canned sector, while frozen snap beans maintain a more stable foothold. The data from USDA, ERS and Circana retail analytics provide a clear view of trends: a general downward trend in consumption, a shift in consumer preferences toward frozen options from the per capita availability trends, and a market that is adapting to these changes.

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Appendix A: Fresh Vegetables

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Table A3: Domestic organic and conventional vegetables FOB prices per pound, 2022–23

Selected commodities	2022 October–November ¹		2023 October–November ²		2022–2023 Change ³	
	Conventional	Organic	Conventional	Organic	Conventional	Organic
	----- Dollars per pound ⁴ -----				----- Percent -----	
Broccoli, crown cut	1.72	2.59	0.93	1.46	-46	-44
Broccoli, unspecified	1.28	2.09	0.72	1.12	-43	-47
Cabbage, red	0.49	0.62	0.38	0.43	-22	-31
Cabbage, round green	0.28	0.63	0.29	0.44	4	-30
Carrots, baby peeled	0.66	0.92	0.68	0.96	3	4
Carrots, unspecified	0.43	0.65	0.52	0.75	23	15
Cauliflower, white	1.85	1.99	0.67	0.95	-64	-52
Celery, hearts	0.90	1.01	0.69	0.72	-23	-29
Celery, unspecified	0.31	0.46	0.25	0.36	-19	-22
Kale greens, lacinato (Tuscan)	0.80	1.07	0.81	0.82	0	-23
Kale greens, unspecified	0.57	1.01	0.57	0.81	1	-19
Lettuce, green leaf	1.76	1.49	0.27	0.44	-85	-71
Lettuce, iceberg	1.49	0.64	0.31	0.42	-79	-35
Lettuce, romaine, hearts	2.76	2.99	0.59	0.82	-78	-73
Lettuce, romaine, unspecified	1.67	1.41	0.29	0.48	-83	-66
Peppers, bell, green	0.71	NA	0.63	NA	-11	NA
Spinach, flat	0.94	1.46	0.72	1.11	-24	-24
Sweet potatoes, Japanese	0.96	1.18	1.04	NA	8	NA
Sweet potatoes, orange	0.39	1.09	0.42	NA	7	NA
Sweet potatoes, red	0.58	1.09	0.66	NA	13	NA
Sweet potatoes, white	0.68	1.09	0.70	NA	3	NA
Tomatoes, grape	2.28	3.37	2.10	2.99	-8	-11

1/ Includes average weekly FOB prices for weeks ending Oct. 8, 2022 through Nov. 26, 2022.

2/ Includes average weekly FOB prices for weeks ending Oct. 7, 2023 through Nov. 25, 2023.

3/ Change in average shipping-point prices from 2022 to 2023.

4/ Per pound conversions based on container approximate net weights in USDA, Agricultural Marketing Service Fresh Fruit and Vegetable Shipments, 2022.

Source: USDA, Economic Research Service calculations using USDA, Agricultural Marketing Service, *Market News* data.

Fresh Vegetables (continued)

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Table A4: Selected U.S. fresh market shipment volumes, October–November 2022–23

Selected commodities	2022 October–November ¹		2023 October–November ²		Change ³		
	----- Thousand hundredweight ⁴ -----				----- Percent -----		
	Domestic	Total	Domestic	Total	Domestic	Total	Total YTD
Artichokes	92	92	79	79	-14.1	-14.1	2.5
Beans, snap	136	442	174	535	27.9	21.0	0.6
Broccoli	746	1,907	777	1,668	4.2	-12.5	-8.6
Brussels sprouts	210	284	219	271	4.3	-4.6	-2.9
Cabbage, Chinese	55	111	82	251	49.1	126.1	55.3
Cabbage, multiple varieties	1,104	1,785	938	1,474	-15.0	-17.4	-12.4
Cauliflower	639	948	686	983	7.4	3.7	-7.1
Celery (hearts/unspecified)	2,604	2,948	2,355	2,684	-9.6	-9.0	-8.9
Cucumbers	372	3,812	543	3,756	46.0	-1.5	9.0
Greens, multiple varieties	485	540	342	376	-29.5	-30.4	-30.5
Lettuce, iceberg	2,551	3,155	3,162	3,471	24.0	10.0	-4.8
Lettuce, romaine	2,740	2,740	2,996	3,150	9.3	15.0	-1.0
Lettuce, unspecified	270	1,409	323	840	19.6	-40.4	-16.3
Onions, dry (multiple varieties)	6,436	7,875	6,959	7,801	8.1	-0.9	0.2
Peppers, bell	1,016	3,132	900	2,881	-11.4	-8.0	6.9
Peppers, chile (multiple varieties)	14	1,997	25	2,072	78.6	3.8	-0.6
Spinach	144	215	137	211	-4.9	-1.9	-19.8
Squash (multiple varieties)	108	1,932	88	1,603	-18.5	-17.0	-6.3
Sweet corn	615	671	450	550	-26.8	-18.0	6.9
Sweet potatoes (multiple varieties)	1,056	1,064	1,332	1,342	26.1	26.1	-20.8
Tomatoes (cherry/grape)	134	969	120	1,042	-10.4	7.5	39.8
Tomatoes (multiple varieties)	1,499	4,166	1,875	4,476	25.1	7.4	5.8
Tomatoes (plum/roma)	295	3,014	383	3,056	29.8	1.4	-4.2
Selected total	23,321	45,208	24,945	44,572	7.0	-1.4	-1.0

1/ Includes weekly shipment totals FOB prices for weeks ending October 8, 2022 through November 26, 2022.

2/ Includes weekly shipment totals FOB prices for weeks ending October 7, 2023 through November 25, 2023.

3/ Percent change from October–November 2022–23. Total YTD change for weeks 1–47 2022–23.

4/ Thousand hundredweight = 100,000 pounds.

Source: USDA, Economic Research Service using data from USDA, Agricultural Marketing Service, Fruit and Vegetable Market News, Movement Reports.

Fresh Vegetables (continued)

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Table A5: Selected fresh-market vegetable trade volume, 2020–23/1

Commodities	2020	2021	2022	January–October		Change 2022–23
	Annual	Annual	Annual	2022	2023	
Imports, fresh:				----- Million pounds -----		-- Percent --
Tomatoes, all	4,053	4,276	4,370	3,656	3,785	3.5
Cucumbers, all	2,193	2,315	2,419	2,010	2,085	3.7
Peppers, bell	1,667	1,843	1,794	1,501	1,451	-3.3
Onions and shallots	1,234	1,463	1,455	1,210	1,208	-0.1
Squash, all	1,209	1,220	1,157	898	929	3.5
Peppers, chile	970	1,098	999	845	854	1.1
Lettuce, all	820	930	1,113	850	704	-17.1
Broccoli, all	542	553	611	459	537	16.9
Carrots, all	466	525	600	493	520	5.4
Asparagus, all	586	665	580	492	440	-10.5
Sweet corn	160	194	203	169	166	-2.2
Mushrooms, all	179	195	202	167	159	-4.9
Cauliflower, all	218	237	222	198	156	-21.0
Sweet potatoes	20	92	144	141	81	-42.1
Vegetables, other	2,922	3,042	3,159	2,611	2,774	6.2
Subtotal, excluding potatoes	17,238	18,647	19,029	15,700	15,851	1.0
Potatoes, fresh and seed	1,105	1,031	1,337	1,081	1,176	8.8
	18,344	19,678	20,366	16,781	17,027	1.5
Exports, fresh:						
Lettuce, all	706	740	702	597	587	-1.7
Onions and shallots	742	694	634	541	501	-7.4
Sweet potatoes	576	590	507	436	475	9.0
Cauliflower, all	238	274	297	258	232	-10.2
Carrots, all	208	209	190	165	153	-7.5
Tomatoes, all	145	166	178	147	149	1.3
Sweet corn	134	147	128	119	140	18.3
Celery	233	222	189	152	140	-8.2
Peppers, bell	99	104	99	79	85	7.6
Spinach	103	106	104	87	80	-8.5
Asparagus, all	36	58	59	55	49	-11.7
Broccoli, all	132	155	36	30	27	-10.2
Cucumbers, all	32	50	31	26	24	-8.1
Mushrooms, all	18	16	13	11	8	-25.5
Vegetables, other	641	656	639	531	500	-5.9
Subtotal, excluding potatoes	4,044	4,187	3,804	3,234	3,148	-2.6
Potatoes, fresh and seed	1,108	1,316	1,214	1,012	1,071	5.9
Total	5,152	5,503	5,018	4,246	4,220	-0.6

1/ Excludes melons, olives, and dry pulses.

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

Fresh Vegetables (continued)

[Return to fresh vegetable section](#)

Table A6: Selected organic vegetable and pulses commodity trade volume, 2020–23

Trade	Commodity	2020 Annual	2021 Annual	2022 Annual	January–October 2022	January–October 2023	Change 2022–23 ¹
		----- Million pounds -----					-
Imports²	Bell pepper	10.6	16.0	22.3	17.0	20.7	22.1
	Bell pepper, greenhouse	65.3	74.9	75.3	64.4	63.6	-1.3
	Dried lentils, green	2.1	4.6	4.9	4.6	5.0	10.3
	Dried yellow peas	53.2	44.7	49.2	32.1	19.6	-39.1
	Garlic	5.6	4.1	4.6	4.5	2.0	-56.0
	Cucumbers	NA	NA	NA	NA	43.2	NA
	Cucumbers, greenhouse	NA	NA	NA	NA	95.1	NA
	Potatoes, fresh	NA	NA	NA	NA	48.6	NA
	Tomatoes, cherry, greenhouse	NA	NA	NA	NA	6.1	NA
	Tomatoes, grape, greenhouse	NA	NA	NA	NA	43.7	NA
	Tomatoes, greenhouse	NA	NA	NA	NA	288.8	NA
	Tomatoes, other	NA	NA	NA	NA	35.2	NA
	Exports	Asparagus	1.7	1.6	1.5	1.4	1.5
Beets		2.0	1.9	1.4	1.2	1.1	-7.5
Broccoli		12.3	12.9	4.4	4.1	3.1	-25.0
Cabbage		12.2	12.2	15.6	13.5	11.7	-13.4
Carrots		57.1	52.0	46.2	39.2	42.2	7.6
Cauliflower and headed broccoli		24.8	28.7	24.1	22.1	14.5	-34.6
Celery		22.8	24.4	19.6	16.8	10.8	-35.5
Cucumbers		2.5	3.4	3.0	2.4	2.0	-19.8
Head lettuce		15.9	8.0	3.8	3.3	6.3	88.8
Peas (<i>Pisum sativum</i>)		3.9	9.3	2.4	2.4	1.1	-55.0
Peppers (<i>Capsicum</i> or <i>Pimenta</i>)		2.5	2.9	4.5	3.5	3.1	-13.0
Potatoes		10.9	15.8	22.3	19.7	19.0	-3.6
Romaine lettuce		38.0	49.3	51.2	46.2	32.2	-30.3
Salad mix		13.9	16.4	19.9	17.4	20.7	19.1
Spinach		29.1	30.6	36.5	32.6	28.6	-12.1
Tomatoes, cherry		4.2	3.5	1.6	1.5	1.5	2.2
Tomatoes, other		4.0	5.5	4.2	3.3	3.2	-1.9
Tomatoes, Roma	1.7	2.0	8.9	2.8	1.4	-49.6	

1/ Percent change from January–October 2022 to 2023.

2/ Organic import trade codes available for cucumbers, potatoes, and tomatoes starting in July 2022.

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

Processed Vegetables (continued)

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Table B7: Selected processed vegetable import value, 2020–23

Item	2020 Annual	2021 Annual	2022 Annual	January–October 2022	2023	Change 2022–23
	----- Million dollars -----					--- Percent ---
Imports						
Vegetables, prepared or preserved	1,888	2,111	2,451	2,043	2,139	4.7
Tomatoes	310	338	439	368	498	35.5
Artichokes	124	134	183	142	113	-20.4
Potato chips	115	150	176	146	215	47.8
Mushrooms and truffles	117	146	163	141	121	-14.6
Cucumber	98	94	99	86	88	1.9
Sweet corn	17	30	37	28	31	9.2
Others	1,107	1,219	1,352	1,132	1,073	-5.2
Vegetable juice	62	77	94	81	67	-17.9
Tomatoes	1	2	5	4	5	25.2
Others	61	75	89	77	62	-20.3
Frozen vegetables	2,582	2,860	3,337	2,742	3,147	14.8
Potatoes	1,064	1,304	1,629	1,328	1,679	26.4
Broccoli	382	385	412	344	384	11.9
Cauliflower	92	81	94	73	75	1.9
Sweet corn	43	50	52	43	49	14.7
Spinach	50	42	47	38	36	-6.3
Mushrooms and truffles	22	22	25	21	18	-13.4
Tomatoes	6	6	12	10	6	-38.2
Others	923	971	1,066	886	901	1.6
Dried and dehydrated¹	689	778	899	768	711	-7.4
Potato flakes/granules/dried/starch	283	303	344	287	331	15.3
Mushrooms and truffles	27	33	35	29	26	-10.6
Tomatoes	16	24	32	26	23	-10.7
Spinach	12	12	14	12	13	12.0
Broccoli	5	7	7	6	4	-30.8
Others	347	400	466	408	313	-23.2
Selected processed imports	5,222	5,826	6,781	5,635	6,065	7.6

Note: This table includes vegetables, potatoes, and mushrooms, but excludes processed olives.

^{1/} Dried and dehydrated excludes vegetables processed and sold as spices such as paprika and other peppers.

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

Processed Vegetables (continued)

[Return to processed vegetable section](#)

Table B8: Selected processed vegetable export value, 2020–23

Item	2020	2021	2022	January–October		Change
	Annual	Annual	Annual	2022	2023	2022–23
----- Million dollars -----						--- Percent ---
Exports						
Vegetables, prepared or preserved	1,789	2,009	2,162	1,808	1,895	4.8
Tomatoes	616	655	691	568	634	11.6
Potatoes (chips and other)	275	295	318	265	287	8.2
Sweet corn	86	83	94	80	71	-11.2
Cucumber	46	63	77	65	70	6.6
Sauerkraut	6	8	7	6	7	21.7
Onions	5	4	5	4	3	-37.2
Mushrooms and truffles	3	2	3	2	3	23.8
Others	753	898	968	817	821	0.5
Vegetable juice	44	49	38	32	24	-24.8
Tomatoes	2	3	2	2	2	44.4
Others	42	45	36	31	22	-28.2
Frozen vegetables	1,317	1,469	1,644	1,346	1,461	8.6
Potatoes	1,021	1,175	1,340	1,085	1,227	13.1
Sweet corn	95	101	97	85	73	-13.7
Sweet potato	2	2	16	16	2	-85.1
Spinach	3	2	4	4	2	-42.9
Others	197	190	186	157	157	-0.3
Dried and dehydrated/1	326	326	335	280	273	-2.7
Potato flakes/granules/dried/starch	135	123	122	97	132	36.2
Onions	82	82	88	77	54	-29.3
Mushrooms and truffles	4	4	5	4	3	-15.1
Others	105	117	120	102	83	-19.2
Total processed exports	3,476	3,853	4,178	3,466	3,653	5.4

Note: This table includes vegetables, potatoes, and mushrooms, but excludes processed olives.

1/ Dried and dehydrated excludes vegetables processed and sold as spices such as paprika and other peppers.

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

Processed Vegetables (continued)

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Table B9: Frozen vegetables: U.S. cold storage holding for selected months, 2022–23/1

Commodities	2022		2023		2023 Change from previous year/2	
	July	October	July	October	July 2022	Oct. 2023
	----- Thousand pounds -----				----- Percent -----	
Asparagus	10,803	8,821	6,226	5,270	-42.4	-40.3
Beans, lima	11,704	28,050	10,988	24,880	-6.1	-11.3
Beans, snap/green	124,905	263,262	142,507	272,588	14.1	3.5
Broccoli, all	67,181	62,137	69,142	69,124	2.9	11.2
Brussels sprouts	12,902	14,632	10,768	9,869	-16.5	-32.6
Carrots	154,894	181,576	148,129	205,061	-4.4	12.9
Cauliflower	22,399	22,233	26,317	23,855	17.5	7.3
Greens, Southern	14,233	16,440	14,792	17,584	3.9	7.0
Okra	28,371	38,050	26,070	36,553	-8.1	-3.9
Onions, all	51,681	55,661	67,282	51,793	30.2	-6.9
Peas, blackeye	1,498	1,275	2,100	1,482	40.2	16.2
Peas, green	334,539	260,744	343,126	284,474	2.6	9.1
Potatoes, french fried	976,071	1,029,084	974,329	988,702	-0.2	-3.9
Potatoes, other	237,906	229,164	235,263	225,340	-1.1	-1.7
Spinach	50,376	35,688	45,497	35,856	-9.7	0.5
Squash	38,772	56,761	40,875	53,587	5.4	-5.6
Sweet corn, cob	164,793	367,932	152,465	369,657	-7.5	0.5
Sweet corn, cut	260,025	688,598	334,194	695,685	28.5	1.0
Vegetables, mixed	48,908	52,232	55,734	55,142	14.0	5.6
Vegetables, other	306,956	390,779	299,544	359,457	-2.4	-8.0
Total	2,918,917	3,803,119	3,005,348	3,785,959	3.0	-0.5

1/ Reported stocks in cold storage at the end of the selected month.

2/ Percentage change in July and October from the previous year during the same months.

Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service, *Cold Storage*.

Processed Vegetables (continued)

[Return to processed vegetable section](#)

Table B10: Selected processed vegetables: U.S. consumer and producer price indices, 2022–23/1

Price Indices - Items	2022		2023		Change 2022–23	
	Jan.–Sept.	Oct.–Nov.	Jan.–Sept.	Oct.–Nov.	Jan.–Sept.	Oct.–Nov.
	----- Index -----				----- Percent -----	
Consumer Price Indices (CPI, 12/1997 = 100)						
Processed fruits and vegetables	183.3	194.0	200.9	201	9.6	3.7
Canned vegetables	209.9	222.9	227.3	229	8.3	2.5
Frozen vegetables/2	225.6	243.9	264.8	264	17.4	8.4
Dry beans, peas, lentils	215.3	220.1	220.9	221	2.6	0.2
Olives, pickles, relishes	167.7	181.2	185.2	189	10.4	4.1
Producer Price Indices for selected processed vegetables (PPI, 1982 = 100)						
Canned vegetables and juices	213.5	237.7	246.5	255	15.5	7.4
Tomato catsup and sauces/3	186.0	204.5	214.0	226	15.0	10.6
Other canned vegetables/3	238.6	270.5	278.1	281	16.5	4.0
Pickles and products	291.5	310.4	310.7	307	6.6	-1.1
Canned dry beans	187.9	199.9	217.8	223	15.9	11.4
Frozen vegetables (excluding potatoes)	181.2	193.1	193.5	194	6.8	0.4
Frozen vegetables (including potatoes)	243.2	277.1	297.9	316	22.5	13.9
Frozen potato products/4	230.1	275.6	312.3	344	35.7	24.7
Dried/dehydrated fruit and vegetables	268.5	287.9	306.9	315	14.3	9.4

1/ Not seasonally adjusted.

2/ Index base is 1982–84 = 100.

3/ Index base is 12/1987 = 100.

4/ Index base is 12/1990 = 100.

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

Appendix C: Potatoes

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Table C11: U.S. potato trade volume, September–August, 2019/20–2022/23

Commodity	September–August				Change
	2019/20	2020/21	2021/22	2022/23	2021/22–22/23
	----- Million pounds -----				--- Percent ---
Exports					
Fresh	1,021.6	1,207.6	1,096.8	1,163.1	6.0
Frozen, all	2,052.3	2,294.1	2,179.4	2,019.2	-7.4
French fries	1,806.7	1,986.5	1,921.9	1,760.2	-8.4
Other frozen	245.5	307.6	257.5	259.0	0.6
Chips	99.3	112.1	106.7	116.8	9.4
Dried and dehydrated	207.2	189.7	165.4	235.0	42.1
Other preparation/preserved	96.2	100.1	95.0	100.5	5.8
Seed	66.1	75.8	92.4	79.5	-14.0
Starch	19.5	14.1	14.3	15.9	10.8
Total	3,562.2	3,993.5	3,750.2	3,730.0	-0.5
Imports					
Fresh	904.2	897.5	1,112.3	1,305.6	17.4
Frozen, all	2,294.9	2,596.3	2,927.1	3,179.1	8.6
French fries	1,894.1	2,177.5	2,443.4	2,617.1	7.1
Other frozen	400.9	418.8	483.8	562.0	16.2
Chips	57.0	69.8	70.8	89.9	27.0
Dried and dehydrated	133.7	155.6	141.5	170.3	20.4
Other preparation/preserved	65.0	74.9	73.5	61.7	-16.1
Seed	154.9	160.7	130.8	155.5	18.9
Starch	290.3	323.3	337.2	334.4	-0.8
Total	3,900.1	4,278.2	4,793.2	5,296.5	10.5

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

Appendix D: Dry Beans

[Return to dry beans section](#)

Table D12. U.S. dry edible beans: Area, yield, production, price, and crop value, 2019–23/1

Year	Acreage		Yield	Production	Season-average	Crop
	Planted	Harvested	per acre		price	value
	----- 1,000 acres -----		<i>Cwt per acre</i>	<i>1,000 cwt</i>	<i>Dollars per cwt</i>	<i>Million dollars</i>
2019	1,291	1,174	17.68	20,756	31.80	676.97
2020	1,727	1,665	19.62	32,665	31.20	1,046.59
2021	1,394	1,327	17.02	22,587	41.30	928.95
2022	1,250	1,223	21.13	25,847	40.50	1,076.74
2023p	1,184	1,143	19.62	22,425	N/A	N/A

Note: Cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

1/ This table excludes chickpeas.

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

Dry Beans (continued)

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Table D13. U.S. dry edible bean crop-year export volume, 2020/21–2023/24

Commodity	----- September–August -----		--- September–October---		Change/1 2022/23–2023/24	
	2020/21	2021/22	2022/23	2022/23		2023/24
----- Million pounds -----					----- Percent -----	
By class/2						
Kidney, all	302.6	183.0	255.3	40.9	62.5	52.7
Kidney, dark red	151.9	103.4	97.5	20.2	19.1	-5.4
Kidney, light red	27.6	13.1	27.2	2.2	5.1	137.5
Kidney, other	123.2	66.6	130.5	18.5	38.2	106.3
Black	194.7	109.1	157.7	22.0	35.6	62.0
Navy	118.7	129.0	132.5	41.2	55.1	33.8
Pinto	183.6	46.0	102.7	6.3	43.8	599.7
Small red	54.3	25.5	32.9	7.4	5.6	-24.4
Beans, other/3	17.6	34.3	17.0	5.6	6.4	14.3
Lima, all	13.0	13.9	13.6	1.3	0.5	-64.0
Lima, baby	1.2	1.9	1.4	0.1	0.3	141.3
Lima, large	11.8	12.0	12.2	1.2	0.2	-83.5
Mung	5.7	5.2	12.7	0.4	0.3	-19.9
Cranberry	6.9	24.3	12.0	0.2	2.3	1,219.1
Great Northern	16.8	11.2	8.9	1.2	2.8	133.3
Pink	4.6	3.6	3.1	0.0	0.9	2,671.3
White	5.0	1.6	2.1	0.3	0.2	-25.7
Blackeye	2.3	1.8	0.4	0.1	0.0	-58.4
Total exports	925.7	588.5	751.0	126.8	216.1	70.4
All by destination country						
Mexico	346.0	104.9	229.3	25.2	95.5	278.9
Canada	91.1	107.9	110.2	47.6	49.5	4.0
Italy	88.9	98.8	98.6	15.9	22.5	41.3
Dominican Republic	87.0	60.6	91.2	3.0	9.5	217.0
Costa Rica	36.8	23.2	38.6	5.0	6.5	30.1
United Kingdom	62.1	44.9	37.6	9.5	9.3	-2.1
Guatemala	8.5	11.3	10.8	2.9	2.2	-24.7
Other countries	205.5	137.0	134.6	17.7	21.0	18.9
Total exports	925.7	588.5	751.0	126.8	216.1	70.4

1/ Percent change from September–October 2022/23 to September–October 2023/24.

2/ Excludes garbanzo beans.

3/ Beans, other includes pigeon pea, bambara, broad and horse bean, and other general bean classes.

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

Dry Beans (continued)

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Table D14. U.S. dry edible bean crop-year import volume, 2020/21–2023/24

Commodity	September–August			September–October		Change/1 2022/23–2023/24
	2020/21	2021/22	2022/23	2022/23	2023/24	
----- Million pounds -----						----- Percent -----
By class/2						
Beans, other/3	79.9	82.7	73.4	12.0	12.4	3.5
Kidney, all	47.2	53.4	63.5	8.0	12.3	52.8
Kidney, dark red	5.0	8.2	10.8	0.8	1.6	109.9
Kidney, light red	19.3	21.4	35.4	4.4	8.4	91.1
Kidney, other	22.9	23.7	17.3	2.8	2.2	-22.4
Mung	79.3	68.7	57.3	13.4	11.8	-11.5
Black	32.8	30.6	38.5	6.5	6.6	1.5
Pinto	22.6	37.6	32.8	4.7	7.6	61.7
Small red	16.1	18.8	21.8	3.7	3.2	-15.7
Blackeye	13.2	12.8	15.4	2.3	2.9	24.3
Lima, all	8.9	9.7	12.7	0.6	0.9	53.1
Lima, baby	1.2	1.3	3.5	0.1	0.1	114.2
Lima, large	7.6	8.4	9.1	0.5	0.8	45.4
Navy	3.1	4.0	7.6	0.9	1.3	40.4
White	2.2	2.2	2.2	0.2	0.3	36.7
Great Northern	3.0	3.3	1.8	0.4	0.3	-23.6
Cranberry	1.2	1.0	0.9	0.3	0.2	-43.6
Total imports	309.3	324.8	327.8	53.1	59.7	12.5
All by destination country						
Canada	78.9	87.9	84.9	12.2	16.9	39.1
Nicaragua	34.0	36.8	52.5	6.5	10.4	59.6
India	40.3	35.8	41.7	9.0	11.9	31.3
Mexico	29.8	49.7	29.7	7.1	3.1	-55.9
Peru	20.8	23.4	27.2	3.7	2.3	-37.0
China (Mainland)	28.9	15.8	16.4	3.1	1.6	-50.3
Thailand	13.3	21.7	15.3	3.7	2.1	-42.9
Other countries	63.3	53.8	60.0	7.8	11.4	46.8
Total imports	309.3	324.8	327.8	53.1	59.7	12.5

1/ Percent change from September–October 2022/23 to 2023/24.

2/ Excludes garbanzo beans.

3/ Beans, other includes pigeon pea, bambara, broad and horse bean, and other general bean classes.

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

Appendix E: Dry Peas and Lentils

[Return to dry peas and lentils section](#)

Table E15. U.S. dry edible peas: Area, yield, production, price, and crop value, 2019–23

Year	Planted area	Harvested area	Production	Crop value	Yield per acre	Season average price
	----- 1,000 acres -----		1,000 cwt	Million dollars	Cwt per acre	Dollars per cwt
2019	1,102	1,046	22,210	210.45	21.2	9.64
2020	998	970	21,629	212.54	22.3	9.84
2021	972	846	8,636	152.10	10.2	16.20
2022	919	862	15,092	233.26	17.5	16.00
2023p	945	900	17,178	N/A	19.1	N/A

Note: Cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

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

Table E16. U.S. lentils: Area, yield, production, price, and crop value, 2019–23

Year	Planted area	Harvested area	Production	Crop value	Yield per acre	Season average price
	----- 1,000 acres -----		1,000 cwt	Million dollars	Cwt per acre	Dollars per cwt
2019	486	425	5,311	83.57	12.5	15.70
2020	523	510	7,398	135.04	14.5	18.20
2021	708	567	3,417	123.47	6.0	35.60
2022	660	602	5,489	180.12	9.1	34.40
2023p	545	508	5,710	N/A	11.2	N/A

Note: cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

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

Dry Peas and Lentils (continued)

[Return to dry peas and lentils section](#)

Table E17. U.S. dry edible peas and lentils: Export volume by class 1/

Commodity	----- July-June -----			---- July-October ----		Change/2
	2020/21	2021/22	2022/23	2022/23	2023/24	
	----- Thousand cwt -----					----- Percent -----
Exports by class						
Peas, all	9,717	5,002	5,880	1,748	2,669	52.7
Peas, split	2,337	1,942	3,507	934	1,417	51.7
Peas, green	3,123	1,379	1,356	319	1,012	217.3
Peas, other	1,183	925	697	308	176	-43.1
Peas, yellow	3,058	739	308	183	64	-65.0
Peas, Austrian winter	15	17	12	4	N/A	N/A
Lentils, all	6,716	3,158	4,133	1,334	1,936	45.2
Lentils, other	6,716	3,158	4,133	1,334	1,936	45.2
Total exports	16,433	8,161	10,013	3,082	4,605	49.4
All by destination country						
Peas, all	9,717	5,002	5,880	1,748	2,669	52.7
Ethiopia	680	1,304	1,923	563	164	-71.0
Canada	1,846	579	538	232	569	144.9
Yemen (Sana)	757	527	529	174	303	73.9
China (Mainland)	2,627	197	516	67	1,052	1,469.3
Philippines	501	326	205	29	91	218.3
Other countries	3,307	2,069	2,169	682	489	-28.3
Lentils, all	6,716	3,158	4,133	1,334	1,936	45.2
Canada	2,365	1,100	1,685	547	971	77.4
Mexico	571	319	451	167	157	-5.9
Spain	513	344	392	137	206	50.3
Sudan	725	198	315	93	42	-54.9
Colombia	318	302	198	43	94	118.4
Other countries	2,223	896	1,091	347	466	34.4
Total exports	16,433	8,161	10,013	3,082	4,605	49.4

Note: Cwt = hundredweight which equals 100 pounds. N/A = not available.

1/ This table excludes planting seed trade.

2/ Dry pea and lentil percent change from July-October 2022/23 to July-October 2023/24.

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

Dry Peas and Lentils (continued)

[Return to dry peas and lentils section](#)

Table E18. U.S. dry edible peas and lentils: Import volume by class 1/

Commodity	----- July-June -----			---- July-October ----		Change/2 2022/23-2023/24
	2020/21	2021/22	2022/23	2022/23	2023/24	
	----- Thousand cwt -----					---- Percent ----
Imports by class						
Peas, all	1,460.0	4,423.3	2,301.5	570.4	308.1	-46
Peas, yellow	704.1	3,134.3	926.3	140.1	30.0	-79
Peas, split	259.9	548.1	760.0	229.1	165.4	-28
Peas, other	427.8	615.9	362.7	113.3	58.7	-48
Peas, green	66.6	123.8	249.9	86.3	54.0	-37
Peas, Austrian winter	1.6	1.2	2.6	1.4	-	-100
Lentils, all	945.7	1,232.6	1,194.0	363.1	330.5	-9
Lentils, other	532.9	728.2	507.4	214.2	70.6	-67
Lentils, red	251.4	285.6	387.0	100.6	86.0	-15
Lentils, green	161.4	218.8	299.6	48.3	173.9	260
Total imports	2,405.7	5,655.9	3,495.5	933.4	638.6	-32
All by origin country						
Peas, all	1,460.0	4,423.3	2,301.5	570.4	308.1	-46
Canada	789.8	2,991.4	1,517.0	371.3	230.4	-38
Russia	420.4	366.9	568.2	123.3	-	-100
New Zealand	128.1	84.8	34.7	11.2	14.2	27
Turkey	0.2	392.6	0.6	0.1	0.0	-97
Ukraine	0.6	447.6	0.1	0.1	-	-100
Other countries	120.9	140.1	181.0	64.4	63.5	-1
Lentils, all	945.7	1,232.6	1,194.0	363.1	330.5	-9
Canada	783.3	1,068.8	1,024.8	303.9	259.9	-15
India	56.0	73.2	99.5	40.7	46.1	13
Turkey	63.8	52.8	37.7	8.7	13.3	54
Mexico	14.7	11.4	12.3	2.9	3.7	27
United Kingdom	6.6	8.3	1.4	0.4	2.1	406
Other countries	21.2	18.1	18.4	6.4	5.3	-17
Total imports	2,405.7	5,655.9	3,495.5	933.4	638.6	-32

Note: Cwt = hundredweight which equals 100 pounds.

1/ This table excludes planting seed trade.

2/ Dry pea and lentil percent change from July-October 2022/23 to July-October 2023/24.

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

Appendix F: Chickpeas

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Table F19. U.S. chickpea: Export volume by class 1/

Commodity	----- September–August -----			---- September–October ----		Change/2
	2020/21	2021/22	2022/23	2022/23	2023/24	
	----- Thousand cwt -----					----- Percent -----
Exports by class						
Chickpea, all	2,812	1,182	1,713	292	329	12.6
Chickpeas, garbanzo	2,812	1,182	1,713	292	329	12.6
Total exports	2,812	1,182	1,713	292	329	12.6
All by destination country						
Chickpea, all	2,812	1,182	1,713	292	329	12.6
Canada	580	352	589	118	163	38.5
Spain	290	209	455	48	56	15.8
Pakistan	925	121	149	23	16	-31.0
Turkey	64	78	93	3	3	-16.4
United Arab Emirates	151	37	83	30	23	-23.1
Peru	49	20	48	7	2	-69.3
Italy	188	79	25	14	17	26.2
Algeria	80	63	17	5	5	-10.8
South Korea	48	27	8	1	3	81.2
Sri Lanka	125	36	0	NA	12	NA
Other countries	312	160	245	44	31	-29.5
Total exports	2,812	1,182	1,713	292	329	12.6

Note: Cwt = hundredweight which equals 100 pounds. N/A = not available.

1/ This table excludes planting seed trade.

2/ Percent change from July–October 2022/23 to 2023/24.

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

Chickpeas (continued)

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Table F20. U.S. chickpea: Import volume by class 1/

Commodity	September–August			September–October		Change/2 2022/23–2023/24
	2020/21	2021/22	2022/23	2022/23	2023/24	
----- Thousand cwt -----						
----- Percent -----						
By class						
Chickpea, all	1,020	1,171	1,827	205	230	12
Chickpeas, garbanzo	633	711	1,627	129	214	66
Chickpeas, kabuli	387	460	200	76	16	-79
Total imports	1,020	1,171	1,827	205	230	12
All by origination country						
Canada	539	632	804	109	87	-20
Australia	69	82	442	45	86	90
Mexico	200	261	395	18	24	33
India	83	72	98	21	19	-11
Argentina	21	36	68	9	8	-12
Turkey	99	70	10	1	2	86
Trinidad and Tobago	0	3	2	0	2	N/A
Other countries	8	14	8	2	3	64
Total imports	1,020	1,171	1,827	205	230	12

Note: Cwt = hundredweight which equals 100 pounds. N/A = not available.

1/ This table excludes planting seed trade.

2/ Chickpea percent change from July–October 2022/23 to 2023/24.

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

Chickpeas (continued)

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Table F21. U.S. chickpeas: Area, yield, production, price, and crop value, 2019–23

Year	Planted area	Harvested area	Production	Crop value	Yield per acre	Season average price
	----- 1,000 acres -----		1,000 cwt	Million dollars	Cwt per acre	Dollars per cwt
2019	453	405	6,256	116.29	15.5	16.50
2020	254	251	4,087	88.57	16.3	22.20
2021	368	349	2,846	102.23	8.2	36.20
2022	353	342	3,658	122.28	10.7	35.00
2023p	380	373	4,958	N/A	13.3	N/A

Note: cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

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

Table F22. U.S. large chickpeas: Area, yield, production, price, and crop value, 2019–23

Year	Planted area	Harvested area	Production	Crop value	Yield per acre	Season average price
	----- 1,000 acres -----		1,000 cwt	Million dollars	Cwt per acre	Dollars per cwt
2019	348	313	4,865	93.54	15.5	17.80
2020	212	210	3,396	74.91	16.2	23.30
2021	308	296	2,442	89.19	8.3	36.50
2022	273	263	2,586	88.83	9.8	35.60
2023p	273	270	3,517	N/A	13.1	N/A

Note: cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

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

Table F23. U.S. small chickpeas: Area, yield, production, price, and crop value, 2019–23

Year	Planted area	Harvested area	Production	Crop value	Yield per acre	Season average price
	----- 1,000 acres -----		1,000 cwt	Million dollars	Cwt per acre	Dollars per cwt
2019	105	91	1,391	22.75	15.2	15.00
2020	42	41	691	13.66	16.9	20.20
2021	59	54	404	13.04	7.6	33.30
2022	80	79	1,072	33.44	13.6	32.70
2023p	107	104	1,441	N/A	13.9	N/A

Note: cwt = hundredweight, a unit of measure equal to 100 pounds. p = preliminary. N/A = not available.

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

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