



Economic
Research
Service

Situation and
Outlook

VGS-354

Sept. 30, 2014

Vegetables and Pulses Outlook

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Mushroom Sales Top \$1 Billion 4 Years in a Row

Note: This is the first release of the ERS Vegetables and Pulses newsletter since March 2013. Budget-related cutbacks in the availability of USDA data on vegetables and pulses necessitated cancellation of the July 2013, September 2013, December 2013, March 2014, and July 2014 newsletters. USDA data collection has been restored and ERS will include future reports in the 2015 Outlook calendar.

Contents

[Industry Overview](#)

[Fresh-Market](#)

[Vegetables](#)

[Processing](#)

[Vegetables](#)

[Potatoes](#)

[Mushrooms](#)

[Dry Edible Beans](#)

[Peas & Lentils](#)

[Commodity Highlight:](#)

[Dry Edible Beans](#)

[Contacts & Links](#)

Web Sites

[Veg. & Pulses](#)

[Veg. & Pulses Data](#)

[U.S. Trade Data](#)

[Market News](#)

[NASS Statistics](#)

[Organics](#)

Approved by the
World Agricultural
Outlook Board.

According to USDA's National Agricultural Statistics Service (NASS) August 28 *Vegetables* report, the 2014 contract production of the four major processing vegetables (tomatoes, sweet corn, snap beans, and green peas) is projected to total 18.2 million short tons, up 14 percent from last year.

Despite increased contract production, early-summer shipment levels for many fresh vegetables are lower in 2014, as compared with previous years. Between May and June 2014, volume shipments were down 20 percent relative to the same period in 2013. Between July and August of 2014 the Consumer Price Index for fresh market vegetables fell by nearly 4 percent; the Producer Price Index fell by more than 19 percent.

Reflecting higher yield, U.S. mushroom (*Agaricus* and others) sales volume reached 900 million pounds in 2013/14 marketing year (July-June), up 1 percent from 2012/13. The value of mushroom sales reached a new high of \$1.12 billion in 2013/14.

Potato production for 2013 is 28.1 million hundredweight (cwt) lower than 2012, due to area harvested declines, despite an average 5-cwt per acre yield increase. Area harvested in 2014 is up just 1.4 percent from 2013 estimates. Market prices reflect reduced supply in 2013 and support a 12.3 percent year-to-year increase as well as a record-high value of production at \$4.22 billion.

Area planted to dry edible beans in 2014 increased by 23.4 percent over 2013 figures with sizeable area gains noted for baby lima, cranberry, black, and navy beans. Dry edible bean acres have also increased in 2014 to 921,000 acres. Area planted to lentils has decline by 12 percent in 2014. The November NASS *Crop Production* report will provide pea and lentil production forecasts for 2014.

Industry Overview

Table 1—U.S. vegetable industry at a glance, 2010-13 1/

Item	Unit	2010	2011	2012	2013p
<i>Area harvested</i>	1,000 ac.	6,952	5,656	6,637	6,118
<i>Vegetables:</i>					
Fresh (excl melon)	1,000 ac.	1,486	1,460	1,465	1,429
Processing	1,000 ac.	1,133	1,052	1,135	1,053
Potatoes	1,000 ac.	1,008	1,077	1,132	1,051
Dry beans	1,000 ac.	1,843	1,168	1,690	1,311
Other 2/	1,000 ac.	1,483	899	1,215	1,275
<i>Production</i>	Mil. cwt	1,199	1,186	1,266	1,190
<i>Vegetables:</i>					
Fresh (excl melon)	Mil. cwt	354	348	354	331
Processing	Mil. cwt	354	341	365	344
Potatoes	Mil. cwt	404	430	463	435
Dry beans	Mil. cwt	32	20	32	24
Other 2/	Mil. cwt	55	47	52	55
<i>Crop value</i>	\$ mil.	18,075	18,032	18,282	19,551
<i>Vegetables:</i>					
Fresh (excl melon)	\$ mil.	10,003	9,778	9,068	10,423
Processing	\$ mil.	1,700	1,794	2,019	1,967
Potatoes	\$ mil.	3,722	4,041	3,994	4,223
Dry beans	\$ mil.	887	688	1,354	940
Mushrooms	\$ mil.	924	1,018	1,099	1,104
Other 2/	\$ mil.	840	714	747	895
<i>Unit value 3/</i>	\$/cwt	15.08	15.21	14.44	16.43
<i>Vegetables:</i>					
Fresh (excl melon)	\$/cwt	28.27	28.07	25.60	31.44
Processing	\$/cwt	4.80	5.26	5.54	5.71
Potatoes	\$/cwt	9.20	9.41	8.65	9.71
Dry beans	\$/cwt	27.90	34.60	42.40	38.40
Other 2/	\$/cwt	32.07	36.84	35.51	36.35
<i>Trade</i>					
<i>Imports</i>	\$ mil.	9,169	10,231	10,416	11,185
<i>Vegetables:</i>					
Fresh (excl melon)	\$ mil.	5,070	5,561	5,584	6,357
Processing 4/	\$ mil.	2,292	2,639	2,643	2,639
Potatoes & products	\$ mil.	997	1,124	1,185	1,209
Dry beans	\$ mil.	140	165	154	146
Other 5/	\$ mil.	671	742	850	834
<i>Exports</i>	\$ mil.	5,549	5,991	6,275	6,723
<i>Vegetables:</i>					
Fresh (excl melon)	\$ mil.	1,900	1,961	1,925	2,146
Processing 4/	\$ mil.	1,240	1,399	1,484	1,647
Potatoes & products	\$ mil.	1,246	1,501	1,643	1,675
Dry beans	\$ mil.	305	286	433	404
Other 5/	\$ mil.	858	844	791	851
<i>Per capita use</i>	Pounds	398	384	394	386
<i>Vegetables:</i>					
Fresh (excl melon)	Pounds	144	143	146	139
Processing	Pounds	120	113	114	112
Potatoes & products	Pounds	114	110	115	117
Dry beans	Pounds	7	6	6	6
Other 2/	Pounds	13	13	12	13

1/ Total rounded. 2/ Includes sweet potatoes, dry peas, lentils, and mushrooms (except for crop value).

3/ Ratio of total value to total production. 4/ Includes canned, frozen, and dried. Excludes potatoes, pulses, and mushrooms. 5/ Other includes mushrooms, dry peas, lentils, sweet potatoes, and vegetable seed.

All trade data are on a calendar-year basis. Note: Hundredweight (cwt), a unit of measure equal to 100 pounds.

Sources: USDA Economic Research Service using data from USDA, National Agricultural Statistics Service, *Crop Production, Acreage, Agricultural Prices, Crop Values, Mushrooms, and Potatoes*; and from U.S. trade data from U.S. Department of Commerce, U.S. Census Bureau.

Fresh-Market Vegetables

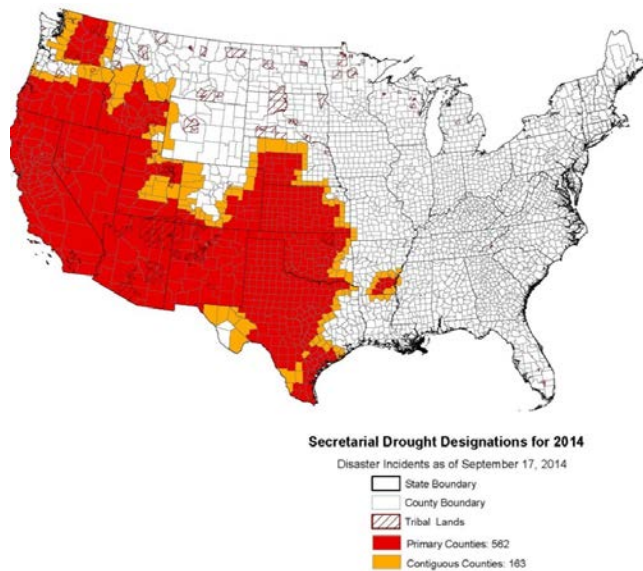
Overall Shipment Volumes Are Lower

Vegetables play a dominant role in California agriculture, and about a quarter of California's agricultural crop value comes from commercial vegetables (\$6.3 billion, excluding potatoes) representing 51 percent of U.S. vegetable farm value. Integral to California's vegetable sectors are the San Joaquin Valley and Central Coast district, where USDA Secretarial Drought Designations for 2014 indicate drought conditions are at exceptional levels.

According to information available on the ERS California Drought Monitor page, the San Joaquin Valley produces one-third of California's vegetables which, in 2012, amounted to a district total of \$2.65 billion in gross farm value (based on County Agricultural Commissioners' Reports, 2012). It is the second largest vegetable-producing district in California, next to the Central Coast Valley, which generated \$3.36 billion in gross farm value in the same year.

Ninety-two percent of harvested vegetable acreage in the Central Coast district is for the fresh market, according to USDA's 2012 Census of Agriculture, while those in the San Joaquin Valley are more equally divided between the fresh and processing markets (48 percent and 52 percent, respectively). Vegetables grown in these districts are virtually all irrigated and are at risk of tightening water restrictions.

Figure 1
2014 Secretarial Drought Designations as of September 17, 2014



Source: USDA, Farm Services Agency, Production, Emergencies and Compliance Division, September, 17, 2014.

Table 2--Selected U.S. fresh-market vegetable shipments 1/

Item	Annual 2013	May 2014	June		Change previous: 2/	
			2013	2014	Month	Year
-----1,000 cwt-----				Percent		
Asparagus	4,227	397	340	196	-51	-42
Snap beans	3,323	247	219	179	-28	-18
Broccoli	10,662	815	695	727	-11	5
Cabbage	10,601	932	480	487	-48	1
Chinese cabbage	1,046	65	92	70	8	-24
Carrots	11,392	1,051	817	780	-26	-5
Cauliflower	4,386	314	283	295	-6	4
Celery	17,030	1,426	1,208	1,146	-20	-5
Sweet corn	13,841	2,661	3,662	2,965	11	-19
Cucumbers	19,245	1,863	1,549	1,206	-35	-22
Greens	2,581	266	140	124	-53	-11
Head lettuce	29,682	2,446	2,361	2,218	-9	-6
Romaine	19,245	1,609	1,356	1,353	-16	0
Leaf lettuce	3,981	333	266	316	-5	19
Herbs, misc.	2,147	182	126	177	-3	40
Onions, dry bulb	57,491	5,282	3,900	4,098	-22	5
Onions, green	3,411	285	253	264	-7	4
Peppers, bell	19,982	1,782	1,713	1,110	-38	-35
Peppers, chile	9,689	604	539	636	5	18
Squash	9,000	806	365	394	-51	8
Tomato, field, round	24,968	2,723	2,475	2,287	-16	-8
Tomato, field, Roma	12,001	1,368	1,066	1,221	-11	15
Tomato, ghouse 3/	11,717	716	701	231	-68	-67
Tomato, small 4/	4,301	384	315	310	-19	-2
Selected total	239,835	28,557	24,921	22,790	-20	-9

1/ 1,000 cwt = 100,000 lbs. Data for 2014 are preliminary and include domestic and partial imports.

2/ Change from July 2013. 3/ All tomatoes produced under cover. 4/ Grape and cherry tomatoes.

Source: USDA, Agricultural Marketing Service, *Fruit and Vegetable Market News*.

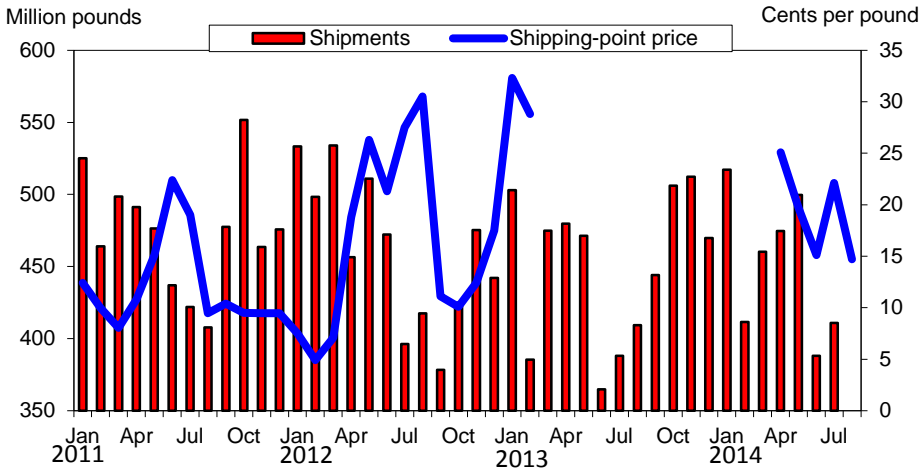
Early-summer 2014 shipment volumes for many fresh vegetables were lower compared with the previous year. Overall, volume was down 20 percent between May and June 2014 and 9 percent from June 2013. Even with the realization of a hotter and drier summer than normal in 2014, reported June shipment volumes for leaf lettuce and Roma tomatoes were 19 and 15 percent above the same period in 2013, respectively. In contrast, reported shipment volumes of cucumbers and sweet corn were each down approximately 20 percent.

Onion Planted Area Continues To Decline

U.S. planted onion acreage declined almost 2 percent between 2012 and 2013 and again between 2013 and 2014. The decrease was largest in non-storage summer onions where acres fell from 20,500 acres in 2013 to 19,300 acres in 2014. Acres of spring non-storage onions continue to outpace summer plantings, although strong yields have resulted in higher summer-production volumes. While 2014 acres planted were down in both spring and summer, improved summer yields kept overall production of non-storage onions relatively flat.

Figure 2

U.S. dry onions, all uses: Shipments and shipping-point price, 2011-14 1/



1/ Includes both imports and domestic product. 2014 data is preliminary. Price reflect free-on-board (f.o.b.) shipping-point basis.
Sources: USDA, Agricultural Marketing Service, *Market News* (shipments) and USDA, National Agricultural Statistics Service, *Agricultural Prices* (prices).

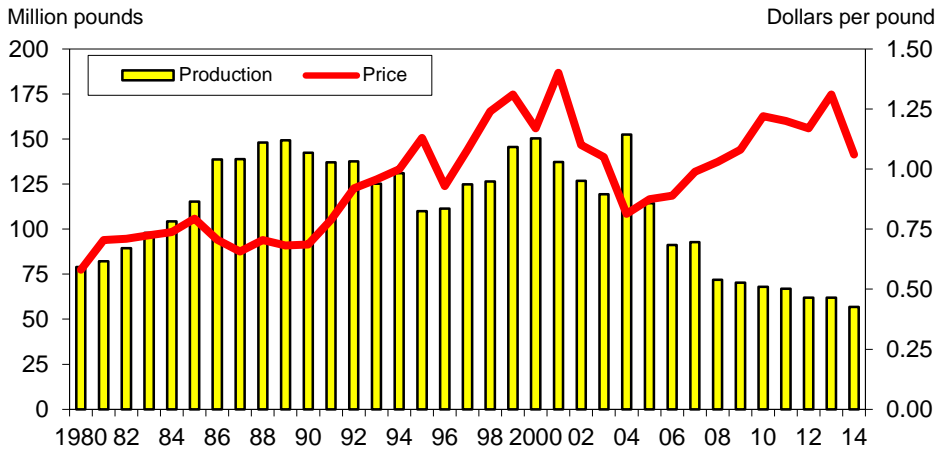
Acres planted to storage onions in States other than California also decreased, continuing an overall downward trend despite the modest rebound in non-California plantings for 2012. On average, between 2004 and 2008, approximately 81,000 acres had been planted annually to storage onions outside of California. Acreage planted in 2014 was down to less than 69,000 acres. Overall production of summer storage onions was 5.7 billion pounds in 2013 compared to 5.1 billion in 2013 but production rose 10 percent. Yields for summer storage onions were notably higher in both California (up 38 percent) and Washington (up 12 percent).

U.S. Asparagus Production Lowest Since 1960

U.S. asparagus production for the fresh market was flat at 62 million pounds in 2012 and 2013. The most recent USDA, National Agricultural Statistics Service forecast indicates that 2014 production will continue a long-running decline and move below 60 million pounds for the first time since 1960. June 2014 shipments were 42 percent lower than they were in June of the previous year. Per-capita use, however, has moved in the opposite direction with over 1.4 pounds per person in both 2012 and 2013, up from the 5-year average of 1.14 pounds per person from 2004 to 2008.

Increasing domestic use continues to be met by imports, primarily from Mexico and Peru. While imports from both countries have increased substantially since 2000, import volume from Mexico surpassed Peru beginning in 2011. Even in 2013, when import volume from Mexico fell to 207 million pounds (a decrease of 13 percent), the volume of imports from Peru totaled only 191 million pounds (an increase of 10 percent in Peruvian asparagus volume compared with 2012).

Figure 3
U.S. fresh-market asparagus: Production and farm price 1/



1/ Price at the point of first sale. 2014 data is preliminary.

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

Farm and Retail Price Decreases as Imports Rise for Many Vegetables

Despite the decreases in domestic production, both producer price and consumer prices are down as import volumes fill the gaps. The Consumer Price Index (CPI) for fresh-market vegetables fell slightly over 4 percent between July and August 2014 while the Producer Price Index (PPI) fell by more than 19 percent. The CPI for potatoes, tomatoes, lettuce, and other vegetables continued to decline in August over July reports. The August 2014 retail price index for potatoes and other vegetables were more than 5 percent below the previous year and the index for tomatoes was down 2.4 percent for the same time period.

According to USDA Market News, an online publication from USDA's Agricultural Marketing Service, average advertised retail prices at major national retail supermarket outlets for selected vegetables during August 2014 compared to July 2014 were as follows:

- green beans prices dropped 14 percent to \$1.39/lb and remained steady into early September;
- broccoli prices fell 8 percent between July and August 2014 to \$1.94/bunch, but remained approximately 10 percent higher than August 2013;
- sweet corn prices declined 4 percent to 37 cents/ear;
- iceberg lettuce prices dropped 4 percent to \$1.06 /head and held steady into early September;
- Romaine lettuce prices were steady at \$1.17/each through August but show some signs of a decrease in early September;
- yellow onion prices fell 16 percent to \$1.94/3 lb bag; sweet yellow onion prices were up 7 percent to \$1.12/pound;
- green and red bell pepper prices decreased approximately 10 percent to \$1.29/lb for green peppers and \$2.26/pound for red peppers;
- round, field-grown tomato prices decreased 7 percent to \$0.98/lb;
- Roma (plum-type) tomato prices increased 17 percent to \$0.97/lb;
- Heirloom, organic tomato prices fell 2 percent to \$3.82/lb.

Table 3--Fresh vegetables: consumer and producer price indexes 1/

Item	2013	2014			Change previous: 2/	
	Aug	Jun	Jul	Aug	Month	Year
	----- Index -----				---- Percent ----	
Consumer Price Indexes (1982/84=100)						
Food at home	234.0	239.1	239.8	240.7	0.4	2.9
Food away from home	243.8	248.4	249.2	249.8	0.2	2.5
Fresh vegetables	324.7	318.3	315.6	310.7	-1.6	-4.3
Potatoes	362.4	338.9	344.7	344.0	-0.2	-5.1
Tomatoes, all	314.7	313.9	312.5	307.1	-1.7	-2.4
Lettuce, all	299.6	304.2	298.0	296.5	-0.5	-1.0
Other vegetables	327.2	321.6	316.8	309.7	-2.2	-5.3
Producer Price Indexes (Dec. 1991=100)						
Fresh vegetables (excl. potatoes) 3/	229.1	214.6	197.3	184.7	-6.4	-19.4
Beets	138.8	176.7	177.6	178.3	0.4	28.5
Cabbage 3/	234.7	272.9	255.2	194.3	-23.9	-17.2
Carrots	209.5	193.4	183.7	181.7	-1.1	-13.3
Cauliflower	93.4	100.7	81.2	49.8	-38.7	-46.7
Greens	241.1	205.9	227.4	246.4	8.4	2.2
Lettuce 3/	396.7	370.1	392.5	339.2	-13.6	-14.5
Onions, dry bulb 3/	146.1	144.8	165.6	185.2	11.8	26.8
Peppers, green	283.5	539.9	411.3	240.4	-41.6	-15.2
Spinach	499.3	280.0	240.5	380.8	58.3	-23.7
Squash	308.1	155.6	145.1	197.0	35.8	-36.1
Tomatoes 3/	239.2	210.6	158.2	158.8	0.4	-33.6

1/ not seasonally adjusted. Data for 2014 are preliminary. 2/ Change in August 2014 from previous month/year. 3/ Index base is 1982=100.

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

Trade Volumes Increase

According to the U.S. Census Bureau, during the first 7 months of 2014, the volume of all fresh-market vegetable imports rose 6 percent over the same period a year earlier, to reach 8.1 billion pounds. There has been steady growth in fresh-vegetable imports with increases of over 5 percent in each of the last 3 years. On the export side, 2013 U.S. fresh-vegetable export volume through July increased 2 percent to reach almost 2.5 billion pounds, continuing a trend of modest expansion.

From January through July 2014, imports of almost all major vegetable categories increased compared to the previous year. Imports from Mexico are up 7 percent between January and July of 2014, as compared to the same period in 2013, and contribute to much of the aggregate increase in fresh-market imports. Import volumes of tomatoes, cucumbers and peppers increased in the first half of 2013 and continued through 2014. An exception was lettuce, for which imports from January through July 2014 were down 3 percent over the same period in the previous year.

Given lower domestic volumes and reduced imports, less lettuce has been exported through July of 2014 compared with 2013. International sales of head and other lettuce (leaf and Romaine) decreased 7 percent and 2 percent, respectively, between the two periods. Overall fresh producer exports were up 2 percent with gains in dry onion and broccoli volumes.

Table 4--Selected fresh-market vegetable trade volume, 2012-14 1/

Item	2013	January - July			Change
	Annual	2012	2013	2014	2013-14
	----- 1,000 cwt -----				Percent
Exports, fresh:					
Onions, dry bulb	6,991	3,053	2,835	2,986	5
Lettuce, head	2,927	1,783	1,747	1,621	-7
Lettuce, other	4,828	2,805	2,830	2,786	-2
Tomatoes	2,414	1,491	1,386	1,333	-4
Broccoli	2,554	191	1,618	1,715	6
Carrots	2,450	1,725	1,814	1,681	-7
Celery	2,753	1,738	1,710	1,732	1
Other	15,807	11,537	10,274	10,792	5
Total	40,723	24,324	24,214	24,646	2
Imports, fresh:					
Tomatoes, all	33,895	22,287	22,399	23,142	3
Cucumbers	15,877	9,534	10,162	10,861	7
Peppers, sweet	11,817	7,379	7,705	7,952	3
Lettuce, all	4,061	2,045	2,485	2,411	-3
Onions, dry bulb	9,634	4,810	5,660	6,690	18
Peppers, chile	8,155	4,076	3,933	4,450	13
Squash 2/	7,220	4,264	4,373	5,137	17
Asparagus	4,020	2,707	2,495	3,263	31
Other	29,507	15,811	17,701	17,564	-1
Total	124,187	72,912	76,913	81,469	6

cwt = hundredweight. 1/ Excludes melons, potatoes, mushrooms, dry pulses, and sweet potatoes.
2/ Excludes chayote.

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

Table 5--Fresh-market vegetables: imports by country, 2012-14 1/

Item	2013	January - July			Change
	Annual	2012	2013	2014	2013-14
	----- 1,000 cwt -----				Percent
Mexico	95,658	59,970	62,740	67,068	7
Canada	14,331	5,729	6,390	6,479	1
China	1,166	961	685	631	-8
Peru	4,204	1,010	1,202	1,399	16
Others	8,827	5,242	5,895	5,892	0
Total	124,187	72,912	76,913	81,469	6

1,000 cwt = 100,000 pounds. 1/ Excludes melons, potatoes, mushrooms, dry pulses, and sweet potatoes.

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

Per-Capita Use

According to preliminary data, net domestic disappearance (also known as net domestic use, a proxy for consumption) of fresh-market vegetables (excluding potatoes, melons, sweet potatoes, dry pulses, and mushrooms) fell slightly to 49.4 billion pounds in 2013. The decrease is down less than 4 percent over the reported high of 51.4 billion pounds in 2012 and similar to the previous 5-year average.

On a per-person basis, use of fresh vegetables in 2013 is estimated at 138.9 pounds. Average per-capita use since 2010 remains at just over 143 pounds compared to over 146 pounds average per person between 2000 and 2009. With only 4 years data (2010 through 2013) it is too soon to tell if average per-capita use for the current decade will reflect a leveling-off in per-person consumption or continue the increasing trend in place since 1970.

Including estimates for fresh potatoes and fresh mushrooms, per-capita use of all fresh vegetables totaled under 180 pounds in 2013, down 3 percent from a year earlier and 7 percent from the 2004-08 average of 191.4 pounds. In 2013, net domestic use increased for broccoli, artichokes, cauliflower, mushrooms, and potatoes compared with the previous year. This continues an increasing trend in per-person use of fresh broccoli and mushrooms.

Although per-capita use of fresh potatoes increased somewhat in 2013, compared to lows of 2012 and 2011, an overall downward trend is apparent for this commodity since the mid-2000s. Because of lower domestic production and increased exports, per capita use continued to decline for items such as onions, head lettuce, celery, garlic, and spinach.

Table 6--Fresh-market vegetables: Per capita disappearance (net domestic use) 1/

Item	Average 2004-08	2009	2010	2011	2012	2013p
----- Pounds per person -----						
Onions, bulb	20.91	19.58	19.58	19.12	19.83	18.65
Tomatoes 2/	19.52	19.59	20.55	20.37	20.29	19.63
Head lettuce	19.49	16.11	15.93	15.79	14.23	12.54
Other lettuce	11.12	10	12.01	11.73	11.54	11.28
Bell pepper	9.25	9.8	10.33	10.57	11.42	10.33
Sweet corn	8.86	9.17	9.25	8.92	9.69	9.29
Carrots	8.32	7.39	7.76	7.5	7.87	7.62
Cabbage	7.91	7.25	7.46	6.88	7.09	7.06
Cucumbers	6.31	6.8	6.74	6.45	7.61	7.42
Celery	6.15	6.17	6.13	5.98	5.96	5.48
Broccoli	5.62	6.21	5.61	5.94	6.3	6.8
Pumpkins	4.8	4.1	4.45	4.45	5.1	4.63
Squash	4.33	4.41	4.34	4.49	4.69	4.51
Garlic, all	2.64	2.45	2.34	2.32	2.3	2.01
Spinach	1.9	2.07	1.72	1.82	1.55	1.43
Snap beans	1.99	1.75	1.88	1.98	1.79	1.72
Cauliflower	1.65	1.73	1.33	1.25	1.18	1.24
Artichokes, all	1.51	1.52	1.47	1.7	1.46	1.51
Asparagus	1.14	1.29	1.37	1.39	1.45	1.42
Others 1/	4.99	4.71	4.78	4.86	4.15	4.32
Subtotal	148.41	142.1	145.03	143.51	145.5	138.9
Potatoes 3/	40.44	36.7	36.81	34.06	34.37	36.05
Mushrooms 3/	2.53	2.42	2.58	2.74	2.72	2.73
Total	191.4	181.2	184.4	180.3	182.6	177.7

p = preliminary. 1/ Excludes melons and sweet potatoes. 2/ Includes both domestic and imported hothouse tomatoes. 3/ Fresh-market only.

Source: USDA, Economic Research Service.

Processing Vegetables

Processing-Tomato Production at a Record High

According to NASS's August 28 *Vegetables* report, the 2014 contract production of the four major processing vegetables (tomatoes, sweet corn, snap beans, and green peas) is expected to increase totaling to 18.2 million short tons, up 14 percent from last year. In 2013, these four vegetables accounted for 98 percent of total contract vegetable-processing volume.

Contracted production of processing tomatoes is forecasted at 14.6 million short tons, up 17 percent from last year's volume. Likewise, snap bean and sweet corn production are expected to increase by 660,770 short tons and 2.6 million short tons, respectively. Green pea production, on the other hand, virtually remained unchanged from 2013.

California's processing-tomato production, which has historically represented 95-97 percent of the total volume of U.S. tomatoes utilized for processing, is projected to increase by 18 percent to a record high of 14 million short tons. The production increase is projected, in spite of the extreme drought conditions reported in the State. According to NASS reports (*California Processing Tomato* and *Vegetables*), the drought's impact on California tomato acreage is nominal when compared to other crops, which are reported to have experienced drought-related planting and harvested area reductions including voluntary fallowing. Despite the persistent drought, according to California Processing Tomato Advisory Board shipping reports, summer 2014 deliveries of tomatoes to processors are off to a strong start with shipments beginning in late June. Shipments through September 13, 2014 reached 10.1 million short tons, with another 2.0 million tons projected to be delivered by September 27.

Table 7—Contract production of selected vegetables for processing 1/

Item	2011	2012	2013	2014f	Change 2013-14
	----- 1,000 short (2000-lb) tons -----				Percent
Tomatoes	12,355	13,502	12,432	14,567	17
California	11,900	12,900	11,900	14,000	18
Sweet corn	2,623	2,704	2,552	2,616	3
Washington	596	532	641	665	4
Snap beans	669	672	616	661	7
Pennsylvania	41	40	20	39	98
Green peas	295	351	346	345	0
Delaware	8	11	11	11	0

f = NASS forecast.

1/ U.S. contract production and output in the leading producing state.

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

Table 8--Processing vegetables: Consumer and producer price indexes 1/

Item	2013	2014		Change previous: 2/		
	Aug	June	July	Aug	Month	Year
	----- Index -----				---- Percent ----	
<i>Consumer price indexes (1997=100)</i>						
Processed fruits and vegetables	158.9	158.5	158.6	158.1	-0.3	-0.5
Canned vegetables	170.2	173.4	171.4	173.0	0.9	1.6
Frozen vegetables (1982-84=100)	207.3	203.0	207.2	201.7	-2.7	-2.7
Dry beans, peas, lentils	194.9	199.6	199.7	199.7	0.0	2.5
Olives, pickles, relishes	136.8	129.7	131.1	130.2	-0.7	-4.8
<i>Producer price indexes (1982=100)</i>						
Canned vegetables and juices	174.1	173.1	173.2	174.4	0.7	0.2
Pickles and products	221.9	221.5	221.5	221.5	0.0	-0.2
Tomato catsup and sauces 3/	156.6	156.9	156.9	157.9	0.6	0.8
Canned dry beans	166.6	166.6	165.7	166.0	0.2	-0.4
Vegetable juices 3/	125.2	123.5	125.3	127.1	1.4	1.5
Frozen vegetables	192.4	192.3	192.3	197.1	2.5	2.4
Dried/dehy. fruit & vegetables	203.5	208.5	208.2	208.2	0.0	2.3

1/ Not seasonally adjusted. 2/ Change in August 2014 from the previous month/year.

3/ Index base year is 1987.

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

Wholesale Prices Up for Processed-Vegetable Products

Between July and August 2014, the Producer Price Index (PPI) rose slightly for canned and frozen vegetables and dried/dehydrated fruit and vegetables categories. Notably, prices for frozen vegetables increased 2.5 percent. The August PPI was also up from a year ago for canned and frozen vegetables (up 2.4 percent) dried/dehydrated fruit and vegetables (up 2.3 percent), and vegetables juices (up 1.5 percent).

The rise in the Producer Price Index did not necessarily translate into higher retail prices. The August Consumer Price Index (CPI) for processed fruits and vegetables fell 0.5 percent from a year ago, driven mainly by a decrease in retail prices for frozen vegetables (down 2.7 percent) and olives (down 4.8 percent).

Import and Export Values Up

According to the U.S. Census Bureau, the value of processed (canned, frozen, and dried) vegetable imports (excluding potatoes, pulses, and mushrooms) rose 5 percent, to \$1.6 billion, between January and July 2014, as compared with the same period in 2013. The top five suppliers of processed vegetables during this period included Mexico (28 percent), China (16 percent), Canada (9 percent), Peru (9 percent), and India (4 percent). Imports of frozen vegetables increased 10 percent through July while dehydrated and canned vegetables rose 3 percent and 2 percent, respectively, and as compared to the same period in the previous year. The increase in frozen vegetables imports is attributable to gains in broccoli, Brussels sprouts, and cauliflower, among others. Within the canned vegetables category, the roughly 3-percent increase in imports is attributable to tomatoes, water chestnuts, and artichokes.

Between January and July of 2014, processed-vegetable export volume grew by 12 percent over the same period a year previous. Much of the expanded export volume is attributable to growth in canned vegetables, and canned tomatoes, in particular.

Despite an increase in the value of tomato imports, the United States continued to bolster its position as a net exporter of processed tomatoes and tomato products, with exports exceeding imports by \$395 million through July. The value of processed-tomato exports rose 20 percent from a year ago. Expanded shipments of dehydrated and frozen vegetables also contribute to increased U.S. processed vegetable exports. The top three foreign destinations for U.S. processed vegetables during this period included Canada (46 percent), Mexico (23 percent), and Japan (15 percent).

Table 9--Value of processed vegetable trade 1/

Item	2013	January - July			Change
	Annual	2012	2013	2014	2013-14
	-----\$ million-----				Percent
Imports:					
Canned	1,125	622	640	655	2
Tomato products	168	98	96	104	9
Frozen	889	527	514	564	10
Broccoli	265	169	149	174	17
Dehydrated 2/	625	362	362	374	3
Peppers, all	272	172	156	156	0
Exports:					
Canned	1,166	565	666	762	14
Tomato products	727	349	416	499	20
Frozen	290	161	167	175	5
Sweet corn	85	49	50	55	10
Dehydrated 2/	190	105	105	118	12
Onion products	86	45	48	51	7

1/ Excludes potatoes and mushrooms. 2/ Also includes miscellaneous dried leguminous vegetables.
Source: USDA, Economic Research Service based on data of the U.S. Department of Commerce, U.S. Census Bureau.

Table 10--Value of processed vegetable imports by selected country 1/

Item	2013	January - July			Change
	Annual	2012	2013	2014	2013-14
	-----\$ million-----				Percent
Canned	1,125	622	640	655	2
Mexico	217	119	125	127	2
Peru	168	79	91	95	4
China	112	62	70	73	4
Canada	105	60	60	60	0
Others	523	302	294	301	2
Frozen	889	527	514	564	10
Mexico	416	248	250	274	9
Canada	139	82	79	81	2
China	70	48	42	48	13
Guatemala	68	34	36	40	9
Others	196	116	105	122	16
Dehydrated 2/	625	362	362	374	3
China	215	142	134	127	-5
Mexico	77	37	41	45	9
India	60	36	36	35	-3
Peru	47	33	24	29	17
Others	225	114	127	139	9

1/ Excludes potatoes and mushrooms. 2/ Also includes miscellaneous dried leguminous vegetables.
Source: USDA, Economic Research Service based on data of the U.S. Department of Commerce, U.S. Census Bureau.

Table 11--Value of processed vegetable exports by selected country 1/

Item	2013	January - July			Change
	Annual	2012	2013	2014	2013-14
	-----\$ million-----				Percent
Canned	1,166	565	666	762	14
Canada	461	241	250	288	15
Mexico	108	57	64	61	-4
Japan	104	54	63	65	3
Italy	71	24	42	60	42
Others	421	190	247	288	17
Frozen	290	161	167	175	5
Canada	113	60	63	65	3
Japan	68	44	42	40	-5
Mexico	21	11	13	14	14
Hong Kong	11	6	6	7	16
Others	77	40	43	49	14
Dehydrated 2/	190	105	105	118	12
Canada	46	25	27	29	8
Japan	19	11	11	12	9
Taiwan	12	9	4	8	75
United Kingdom	9	6	5	5	4
Others	125	54	58	64	10

1/ Excludes potatoes and mushrooms. 2/ Also includes miscellaneous dried leguminous vegetables.
 Source: USDA, Economic Research Service based on data of the U.S. Department of Commerce, U.S. Census Bureau.

Per-Capita Use of Processed Vegetables Down

According to the domestic disappearance (also called utilization, use, availability, or consumption) data, per-capita processed-vegetable use (including canned, frozen, and dehydrated vegetables but excluding potatoes and mushrooms) totaled 111.9 pounds in 2013, down 3 percent from the 2010-12 average. Disappearance data measure supplies of commodities moving through production and trade channels for domestic use. The data do not directly measure food intake though they serve as a popular proxy for consumption trends over time.

In 2013, canned vegetables accounted for 82 percent of total processed vegetables. Per-capita utilization of canned vegetables is estimated at 91.6 pounds per person in 2013 down just 1 percent from the 2010-12 average. In contrast, per-capita use of frozen vegetables, in the same year, is estimated to have dropped 11 percent to 19.4 pounds per person. Reduced utilization of sweet corn, broccoli, and green peas are the primary drivers behind the category decline; while, increased utilization of snap beans and carrots for freezing offsets some of the reductions.

Potatoes

Total 2013 Production Down, Still Above 5-Year Average

In 2013, U.S. farmers grew 28.1 million hundredweight (cwt) fewer potatoes than the previous year. The 2012 crop was the largest crop since 2000, when 523 million cwt was produced. The 2013 crop, despite being 6.1 percent smaller than the year previous, is still 5.8 million cwt larger than the 5-year average (2008-12). Production of fall, spring, and summer potatoes was down from 2012 estimates by 5.4, 17.2, and 4.6 percent, respectively. Fall production annually accounts for approximately 91 percent of total production (90.9 percent in 2012), as such, the 5.4 percent reduction in fall production accounts for fully 81 percent of the total decline in 2013 production.

The year-to-year production decline occurred despite a 5-cwt per-acre increase in aggregate potato yields from 409 cwt per acre in 2012 to 414 in 2013. Summer yields declined by 10 cwt per acre in 2013. However, the summer crop accounts for a proportionally small amount of total production and the significant gains in fall and spring yields more than offset the summer decline. Yield information for winter potatoes is no longer reported by NASS. Area harvested contracted by 81,000 acres in 2013 and offset the productivity effect of yields gains, resulting in the observed decline in potato production.

Acres Harvested Down From 2012 Levels

Acres harvested for fall potatoes dropped in 2013 for 11 of the top 13 potato-producing States. Notable year-to-year declines were recorded in Idaho, Nebraska, and North Dakota where fall harvested area in 2013 contracted by a collective 39,000 acres, of which 28,000 was lost in Idaho alone. Fall potato production closely tracks area harvested trends and sizable declines were observed in several key States.

Table 12--Fall potato production, 13 top-producing States

State	2012	2013	Change
	----Million cwt----		----Percent----
California	3.90	3.50	-10.2
Colorado	19.98	20.30	1.6
Idaho	141.82	131.13	-7.5
Maine	15.68	15.66	-0.1
Michigan	15.93	15.84	-0.5
Minnesota	18.80	17.33	-7.8
Montana	3.74	3.44	-8.1
Nebraska	10.37	8.42	-18.8
New York	4.70	4.96	5.4
North Dakota	25.20	22.62	-10.2
Oregon	22.94	21.58	-5.9
Washington	95.94	96.00	0.1
Wisconsin	29.44	26.04	-11.5
13-State total	408.43	386.82	-5.3
U.S. total	418.0	395.3	-5.4

Source: USDA, National Agricultural Statistics Service, *Crop Production*.

Fall and annual production data for 2014 is not yet available from NASS, however, current NASS area forecasts indicate a slight rebound in fall and total acres harvested. The fall acres harvested estimate for 2014 is projected to be up 12,700 acres to 943,000, a modest 1-percent increase over the 2013 figure. A slight gain in summer potato harvested acres offsets a smaller decline in spring area and contributes to a net increase of 2,100 total spring and summer acres harvested in 2014.

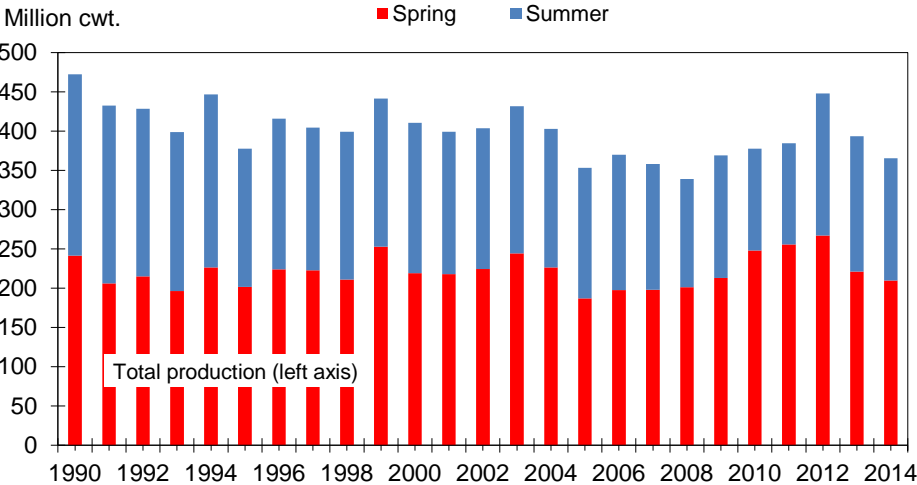
Current projections indicate that growers of all potato varieties will harvest 1.1 million potato acres in 2014, a 1.4-percent increase over the 2013 estimate. Seven of the top 13 potato producing States report fall acreage harvested gains. A notable exception is Idaho, the largest (by area and production volume), where acreage did not increase in 2014 and is forecast to remain at 316,000 acres. Fall harvested area in Idaho accounts for 33.5 percent of total fall acres and 29.7 percent of total harvested acres in 2014.

Spring and Summer Production Declines for a Second Year

Collectively, spring and summer potato production typically accounts for approximately 9 percent of total potato production. At 39.3 million cwt, the combined spring and summer 2013 harvest represents 9.1 percent of total potato production and, despite year-to-year volume declines, combined summer and spring production for 2013 is slightly larger than the 5-year average (2008-12) harvest volume of 38.4 million cwt.

Spring and summer production in 2012 benefited from significant gains in harvested area and yields, most notably, summer potatoes experienced a 93 cwt per acre increase over 2011 yields. This performance has not been replicated in subsequent years, rather yields and area harvested have returned to figures that are more in-line with average values.

Figure 4
U.S. spring and summer potato production



Cwt = hundredweight.
 Source: USDA, National Agricultural Statistics Service, *Crop Production and Agricultural Prices*.

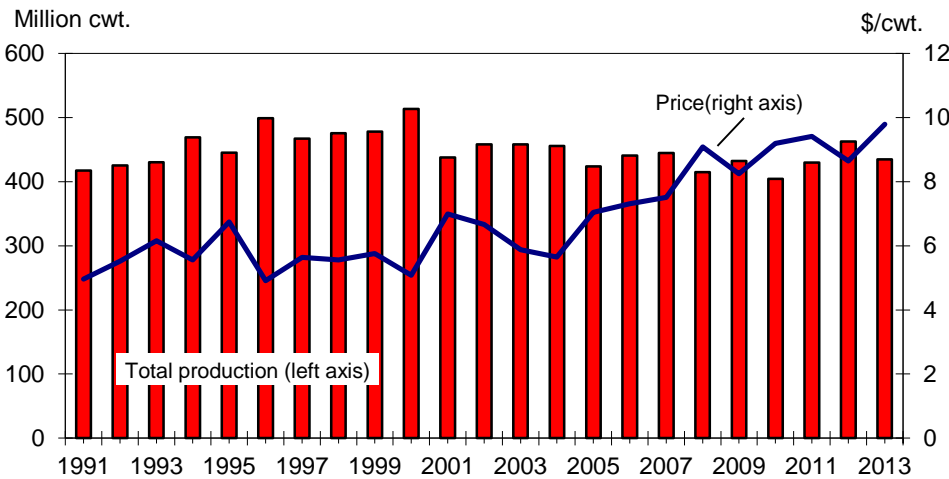
Spring and summer production forecasts for 2014 indicate that combined volume will be down for a second consecutive season. The current forecast projects spring and summer 2014 production at 21 million cwt and 15.6 million acres, respectively. At 36.6 million cwt, combined production is 2.9 million cwt below the 5-year rolling average of 39.5 million cwt. In 2014, spring potato harvested area decreased by a modest 600 acres while summer area harvested increased by 2,700. With a net increase in area harvested, yield declines for both potato categories are solely responsible for the observed production drop.

Across Categories, 2013 Prices Up

Reduced aggregate production and higher feed grain prices provided support for significant price gains for the 2013 potato crop. At \$9.71 per cwt, the 2013 all potato price is 12.3 percent higher than the comparable price for 2012. Much of the gain is attributable to increases in the fall potato price which rose by \$1.09 over the 2012 price. Spring and summer prices also rose; the spring price increased by 8.9 percent to \$17.62 per cwt, the summer price increased by 33.5 percent to \$14.67 per cwt.

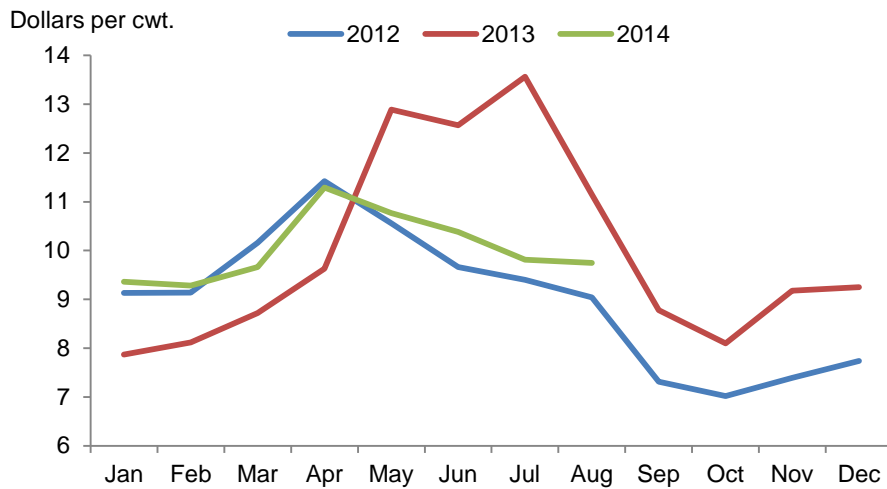
A comparison of monthly price information for 2013 and 2012 indicates that early in 2013, average fresh and processed prices were generally lower than those observed in 2012. However beginning in June 2013, average prices crept above 2012 levels and stayed relatively higher throughout the balance of 2013. Fresh prices, in particular, exhibited strength through the last 6 months of 2013 and peaked in August, when a season-high price of \$20.67 per cwt of (fresh) was observed. Monthly prices for the 2014 crop have, thus far, been less variable than 2013 prices and have been generally lower during the summer months.

Figure 5
U.S. potato production and price



Cwt = hundredweight.
Sources: USDA, National Agricultural Statistics Service, *Crop Production and Agricultural Prices*.

Figure 6
U.S. monthly all potato prices



Cwt = hundredweight.
 Source: USDA, National Agricultural Statistics Service, *Quick Stats Database*.

Value of 2013 Production at Record High

Higher prices facilitated a 5.7-percent increase in the value of production in 2013. At \$4.2 billion, the 2013 production value is the highest recorded (nominal) total value of production and \$182.1 million above the previous high of \$4 billion, recorded for the 2011 potato crop. The production value per harvested acre benefited from the price increase. For each acre of potatoes harvested in 2013, farmers grossed an average of \$4,018 compared to \$3,529 in 2012 and \$3,752 in 2011.

Use for Tablestock and Processed Markets Down in 2013

Use of the 2013 potato crop for processing was down by the raw-potato equivalent of 7.1 million cwt. Frozen french fries and other frozen-product utilization dropped 3 percent to 158 million cwt (raw equivalent). Potatoes used for dehydrating fell 4 percent from 2012 levels to 47.8 million cwt, also in raw potato equivalent weight. Canning use dropped by 47 percent, relative to the previous year, though at 651,000 cwt, this use category is relatively small and represents just 0.2 percent of total processed utilization.

Processors used slightly more potato for chips and shoestrings in 2013; 60.2 million cwt as compared to 59.3 million in 2012. The starch, flour, and other category also experienced a year-to-year gain of 8.3 percent and utilized 8.58 million cwt of raw potatoes. In April of 2014, the U.S. Department of Agriculture’s Agricultural Marketing Service (AMS) announced plans to purchase dehydrated potatoes for surplus removal.

Table-stock (fresh) potato sales fell by 1.4 million cwt in 2013. At 104.3 million cwt, fresh potato utilization is 12 percent below the previous year’s figure.

Preliminary per-capita consumption estimates for 2013 are up slightly more than 1 pound per person as compared to 2012 figures. Lower domestic production was augmented by stocks and imports, providing support for modest increases in (raw potato equivalent) consumption of frozen, chipping, and fresh potatoes. Per-capita consumption of canned and dehydrated potatoes declined slightly from 2012 levels, though not enough to offset gains in other categories.

Total Exports Up in 2013, Fewer Frozen French Fries Exported

In 2013, total potato exports rose slightly from 3.4 billion pounds in 2012 to 3.5 billion in 2013. Exports of frozen french fries declined slightly, however, other frozen categories experienced growth. Fresh or chilled potato exports increased significantly in 2013; 947.5 million pounds of tablestock potatoes were exported as compared to 880.9 million in 2012.

Total volume potato imports in 2013 rose by 5.2 percent over 2012 figures to 2.8 billion pounds. Imports of russet and red skin potato varieties; dried potatoes; flakes, granules, and pellets; and starch increased by 7.2, 13.3; 45.9; 41.4; and 10.3 percent respectively.

Mushrooms

A Record Sales Value, 4 Years in a Row

The NASS *Mushrooms* report indicates that total U.S. mushroom (*Agaricus* and others) sales reached 900 million pounds in the 2013/14 crop year (July-June), up 11 million pounds from 2012/13. Sales value, for the fourth consecutive year, topped over \$1 billion—reaching an all-time high of \$1.1 billion in 2013/14. The gain in crop value is a reflection of higher prices for brown *Agaricus* and specialty mushrooms. Pennsylvania growers account for \$540 million, or 51 percent, of all *Agaricus* mushroom farm value, followed by California with 18 percent. *Agaricus* mushrooms typically account for 98 percent of all mushrooms produced in the United States.

Record yields of 6.55 pounds per square foot contribute to a 1 percent increase in sales volume of fresh and processed *Agaricus* mushrooms from 870 million pounds in 2012/13 to 882 million pounds in 2013/14. Fresh market volume, which accounts for about 87 percent of all *Agaricus* sales volume, reached 767 million pounds in 2013/14 (up 1 percent from the previous season). On the processing side, *Agaricus* volume increased 2 percent from 111 million pounds in 2012/13 to 113 million pounds in 2013/14. Despite a 2-cent drop in the season average price (point-of-first sale) from \$1.30 per pound to \$1.28, the sales value of fresh-market *Agaricus* mushrooms gained \$972 million in 2013/14. In contrast to the fresh market, the average price producers received for processing mushrooms jumped 6 cents to \$0.69 per pound in 2013/14, boosting sales value to \$78 million, up 13 percent from 2012/13.

In 2013/14, the sales volume of brown *Agaricus* mushrooms (including Portobello and Crimini) increased just slightly to 152 million pounds while the value of sales rose to an all-time high of \$230 million (4-percent above from 2012/13) due to higher sale prices. Brown mushrooms now account for 17 percent of *Agaricus* volume and 22 percent of sales value.

The sales volume of specialty mushrooms (excluding brown *Agaricus*), most of which are sold in the fresh market, fell 5 percent to 17.8 million pounds, due to a sharp decline in other mushrooms (down 51 percent). Meanwhile, reflecting reduced supply, growers received higher average prices—\$3.74 per pound for oyster and \$6.16 for other mushrooms—thus contributing to the record-level value of sales for all specialty mushrooms to \$66 million in 2013/14.

Table 13--U.S. *Agaricus* mushrooms: Sales, price, and value, selected States

State	Volume of sales		Price		Value of sales	
	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14
	1,000 pounds		Dollars per pound		1,000 dollars	
Pennsylvania	544,942	571,725	0.93	0.94	508,593	539,662
California	118,098	101,534	1.75	1.87	206,708	189,607
Other States	206,585	208,546	1.56	1.54	323,240	320,446
United States	869,625	881,805	1.19	1.19	1,038,541	1,049,715

1/ Includes Portobello and Crimini.

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

Table 14--U.S. Mushrooms: Sales, price, and value

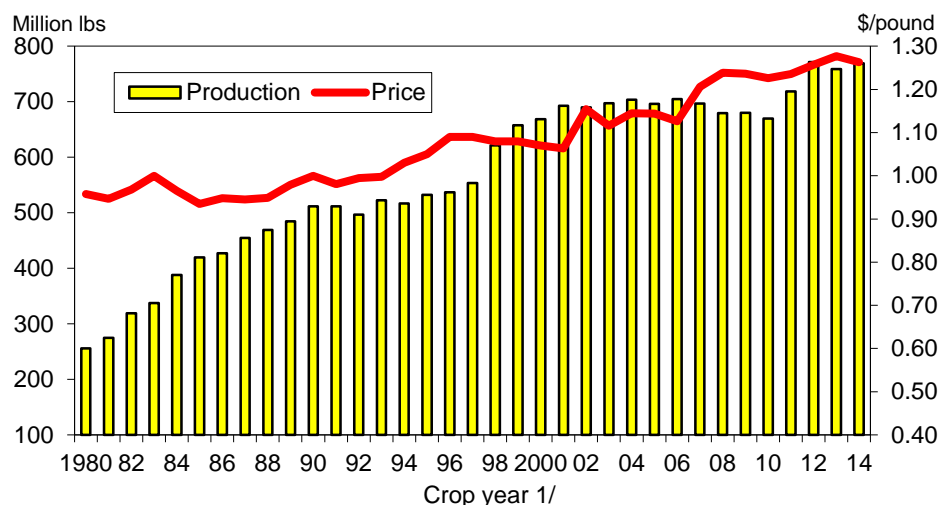
Item	Volume of sales		Price		Value of sales	
	2012/13	2013/14	2012/13	2013/14	2012/13	2013/14
	1,000 pounds		Dollars per pound		1,000 dollars	
Agaricus	869,625	881,805	1.19	1.19	1,038,541	1,049,715
White	717,906	729,416	1.14	1.12	816,700	819,421
Brown 1/	151,719	152,389	1.46	1.51	221,841	230,294
All specialty	18,627	17,759	3.51	3.70	65,345	65,666
Shiitake	8,277	8,953	3.32	3.21	27,468	28,769
Oyster	6,975	7,165	3.02	3.74	21,050	26,783
Other	3,375	1,641	4.99	6.16	16,827	10,114
Total	888,252	899,564	1.24	1.24	1,103,886	1,115,381

1/ Includes Portobello and Crimini.

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

Figure 7

U.S. fresh-market *Agaricus* mushrooms: Sales volume and producer price



1/ Crop year (July-June) ends with year listed (e.g., 1980 = 1979/80).

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

The production volume of certified organic mushrooms represented 4.8 percent of all mushrooms production volume in 2012/13. Organic mushroom volume increased by 65 percent in 2013/14 to 43.2 million pounds and now represents 4.8 percent of total mushroom production. *Agaricus* mushrooms accounted for 75 percent of certified organic sales, while all specialty mushrooms made up the rest.

Intended *Agaricus* bed and tray production area for the 2014/15 season is expected to rise 2 percent to 137 million square feet. Assuming yields are forecast at an average of 6.5 pounds per square foot, across all varieties. If realized, the yield forecast implies a slight increase in *Agaricus* mushrooms production to 884 million pounds in 2014/15.

Per-Capita Remains Steady

During the 2013/14 season, per-capita use—a widely used proxy for food intake—of all mushrooms reached 3.8 pounds, less than a 1-percent increase from the previous season. Per capita use has generally remained stable and fluctuated between 3.5 pounds to 4.15 pounds during the last three decades.

Fresh-market mushrooms use, the category leader, increased half of a percent to 2.7 pounds per person, while mushrooms for processing use declined 4.5 percent to 1.0 pounds per person. Increased use of fresh mushrooms use is primarily attributable to expanded use of fresh mushrooms by the foodservice sector.

Dry Edible Beans

Dry Edible Bean Area Planted Rebounds

The current forecast for 2014 U.S. dry bean area planted is over 23 percent higher than acres planted in 2013. Even though the August 1, 2014 NASS revised the forecast for 2014 U.S. dry edible bean acres planted downward to just over 1.67 million acres, the figure is very close to the initial estimates from March 2014.

If realized, 2014 acres planted will be approximately 7.4 percent higher than the previous 4-year average of 1.56 million acres planted. The March forecast of 1.69 million acres planted had been raised to 1.75 million acres in June, before being reduced to the more recent 1.67 million acres. Similarly, the current NASS forecast for area harvested in 2014 is up 23 percent compared to 2013 levels.

The August 1 dry edible bean by class forecasts indicate that, all bean classes except blackeye beans, saw increases in 2014 as compared to 2013 estimates. The largest percentage increases are projected for baby lima, cranberry, black, and navy beans which rose 94.1, 78.0, 51.5, and 42.7 percent, respectively.

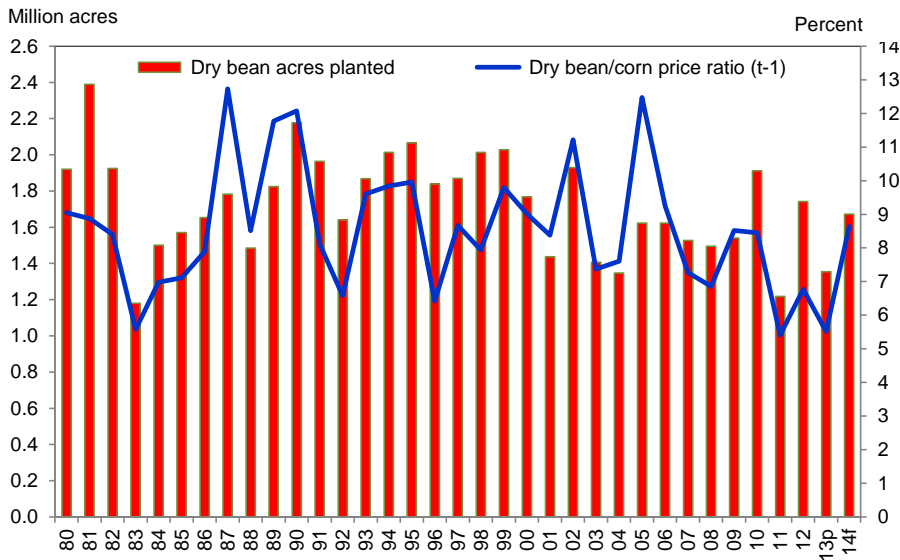
While acreage planted to garbanzo beans continues to increase, the change is relatively small (only 4 percent) compared to the dramatic gains that occurred between 2011 and 2012. Some of the reporting states for garbanzo beans (Washington, California, North Dakota, South Dakota) are projecting fewer acres planted in 2014 compared to the previous year.

Table 15 -- U.S. dry beans: Planted acres by class, 2010-14

Item	2010	2011	2012	2013	2014	Change
						2013-14
-----1,000 acres-----						Percent
Pinto	842.7	386.7	729.7	485.1	603.2	24.3
Navy	279.5	204.4	262.8	174.2	248.5	42.7
Black	284.0	183.9	216.8	143.1	216.2	51.1
Garbanzo	146.0	135.8	207.9	215.7	224.1	3.9
Great Northern	78.5	61.8	55.6	75.5	87.9	16.4
Lt. red kidney	53.1	37.2	40.2	43.2	50.5	16.9
Dk. red kidney	48.5	48.8	46.2	46.7	57.8	23.8
Blackeye	34.7	24.6	37.4	42.1	28.0	-33.5
Small red	22.9	36.5	40.0	26.0	33.5	28.8
Pink	33.0	21.1	29.4	23.5	24.2	3.0
Baby lima	12.2	12.6	12.9	6.8	13.2	94.1
Large lima	17.5	9.6	9.7	6.7	8.1	20.9
Cranberry	4.4	4.3	4.7	4.1	7.3	78.0
Others	54.4	50.6	49.2	62	69.4	11.9
United States	1,911.4	1,217.9	1,742.5	1,354.7	1,671.9	23.4

Source: USDA, National Agricultural Statistics Service, *Crop Production*.

Figure 8
Lagged dry bean/corn price ratio and dry bean acres planted, 1980-2014



Sources: USDA National Agricultural Statistics Service *Agricultural Prices* and *Crop Production*. USDA Economic Research Service *Feed Grains Database*. p=preliminary. f=forecast.

The one year-lagged dry edible bean price and corn price ratio is positively correlated with dry bean acreage planted. When dry bean prices are high relative to corn prices, acreage of dry beans typically increases in the following year.

The most recent NASS *Crop Production* report raised the projected corn yield by 4.3 bushels per acre to a record 171.7 bushels and corn production forecast of 14,395 million bushels for the 2014 harvest. Historic high corn production and supplies reduces the projected season-average corn farm price to a range of \$3.20 to \$3.80 per bushel. If dry bean prices remain strong, acres planted to dry beans in 2015 would be expected to rise.

Monthly Prices Similar to 2012/13

Average monthly grower prices for dry beans in 2013/14 have tracked closely with the prices observed in 2012/13 crop year. While monthly prices have remained below the historical highs received for the 2011/12 crop, forecasts of the average annual grower price, at \$40.60 per cwt, are well above the 5-year average of \$35.50 per cwt.

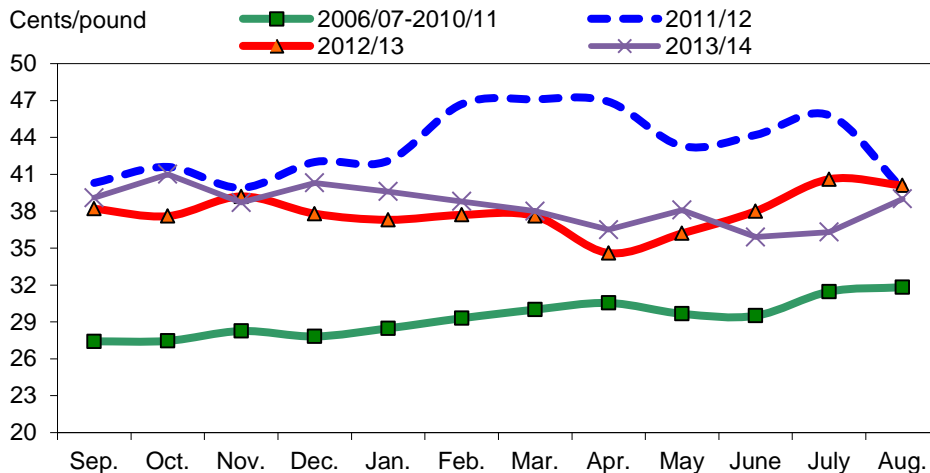
Grower prices (ND/MN) for pinto beans began the marketing year in September 2013 at \$40.00 per cwt, above the \$35.30 per cwt from September 2012, and only 5 percent below record high prices from September 2011. Pinto prices from the 5 previous crop years (2006/07-2010/11) had averaged \$23.50 per cwt. Pinto prices softened through the current marketing year and by July 2014, grower prices for pintos were reported at \$30.50 per cwt.

Throughout the marketing year, reported grower prices for Great Northern beans have remained steady at \$50.00 per cwt. These are the highest prices observed for Great Northern beans since 1995. Likewise, prices for kidney beans (light red and dark red) have remained high throughout 2013/14 and have approached, or exceeded, in the case of dark red kidneys, prices reported in 2011/12.

During September-July 2013/14, the producer price index (PPI) for canned dry beans was virtually flat as compared to the previous year. In contrast, the PPI for all dry pulses is down 2 percent between 2012/13 and 2013/14 and 15 percent below the index from 2011/12.

The PPI remains strong for dry Great Northern with 2013/14 values up almost 20 percent in each of the previous 2 years. Dried pinto bean PPI is flat compared with the previous year but well below the highs from 2011/12.

Figure 9
U.S. dry edible beans: Average monthly grower price



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*.
 July 2014 is preliminary.

Table 16 -- U.S. dry beans: Monthly grower prices for selected classes, 2013-14

Commodity	State	2013		2014 1/		Chg. prev. year:	
		July	Aug.	July	Aug.	July	Aug.
--- Cents per pound ---							
All dry beans	US	40.60	40.10	36.30	39.00	-10.6	-2.7
Pinto	ND-MN	39.30	41.00	30.50	28.50	-22.4	-30.5
Navy	ND-MN	40.00	40.00	--	--	--	--
Black	MI	42.00	41.10	--	--	--	--
Great Northern	NE-WY	45.00	45.00	--	--	--	--
Garbanzo	ID-WA	47.75	46.17	41.00	41.00	-14.1	-11.2
Light red kidney	CO-NE	50.00	50.00	53.00	53.00	6.0	6.0
Dark red kidney	MN-WI	--	--	--	--	--	--
Pink	ID-WA	41.00	41.00	--	--	--	--
Small red	ID-WA	41.00	41.00	--	--	--	--
Baby lima	CA	48.50	--	--	--	--	--
Large lima	CA	58.50	--	--	--	--	--
Blackeye	CA	--	--	--	--	--	--

-- = not available. 1/ 2014 prices are preliminary

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices* and USDA, Agricultural Marketing Service, *Bean Market News*.

Table 17 -- U.S. dry beans: Monthly grower prices for selected States, 2013-14

Commodity	2013		2014 1/		Chg. prev. year:	
	July	Aug.	July	Aug.	July	Aug.
	--- Cents per pound ---				--- Percent ---	
United States	40.60	40.10	36.30	39.00	-10.6	-2.7
California	51.80	--	--	--	--	--
Colorado	--	--	--	--	--	--
Idaho	36.40	33.10	35.10	--	-3.6	--
Michigan	44.70	--	58.50	--	30.9	--
Minnesota	--	--	--	--	--	--
Nebraska	39.70	42.60	44.00	--	10.8	--
North Dakota	39.70	39.30	31.90	27.10	-19.6	-31.0

-- = not available. 1/ 2014 prices are preliminary.

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

Table 18 -- U.S. dry bean crop-year export volume to date 1/

Bean class	Crop year	September - July		Change	
		2012/13	2013/14		2012/13-13/14
		----- 1,000 cwt (bags) -----		Percent	
Navy (pea)	2,294	2,020	2,041	3,860	89
Black	1,192	1,406	1,128	726	-36
Pinto	2,288	2,805	2,092	1,219	-42
Garbanzo	1,378	1,561	1,339	1,052	-21
Great Northern	780	333	729	757	4
Light-red kidney	75	114	68	90	33
Dark-red kidney	606	284	581	696	20
Small red	178	139	148	246	66
Large lima	346	263	332	325	-2
Baby lima	112	76	97	146	51
Pink	28	31	27	18	-34
Cranberry	45	72	42	138	229
Other	1,350	1,181	1,277	920	-28
Total	10,672	10,287	9,902	10,193	3

1/ Crop year is September - August. cwt = hundredweight.

Source: Prepared by ERS using data of the U.S. Department of Commerce, U.S. Census Bureau.

Import and Export Volumes Up

Export demand remained strong for several bean classes during the first 10 months of the 2013/14 marketing year. As compared with the same period in the previous marketing year, the overall export volume is up 3 percent. Exceptions were black, pinto, garbanzo, pink and large lima beans, and other beans which experienced declines of 36, 42, 21, 34, 2, and 28 percent, respectively. Increased 2013/14 exports of navy, kidney (light-red and dark-red), small red, and baby lima beans more than offset declines observed for other bean classes.

Top dry edible bean export destinations for 2013/14 are Mexico, Canada, Spain, and Italy. Export volume to the United Kingdom and Spain rebounded sharply in the first 10 months of 2013/14 compared to the previous year. Mexico is a major market for U.S. black bean exports and reduced shipments to Mexico again contributed to a significant decrease in total black bean exports in the current crop year.

Improved prices have attracted bean imports to the U.S. in 2013/14 and resulted in a 27 percent increase in imports during the first 10 months of the marketing year compared to the same period in 2012/13. Import volumes for 2013/14 are up from three key suppliers: Mexico (up 85 percent), Canada (45 percent) and China (11 percent).

Table 19 -- U.S. dry bean crop year export volume to date, by selected destination 1/ 2/

Destination	Crop year 2012/13	September - July		Change 2012/13-13/14	
		2011/12	2012/13		2013/14
----- 1,000 cwt (bags) -----					
Canada	1,547	1,164	1,435	1,818	27
Mexico	2,925	4,471	2,700	1,429	-47
Spain	430	435	391	629	61
Italy	483	469	473	557	18
United Kingdom	792	822	703	1,108	58
India	188	196	171	174	2
Dominican Rep.	713	413	651	502	-23
Guatemala	162	118	144	119	-17
Other	3,432	2,197	3,235	3,858	19
Total	10,672	10,287	9,902	10,193	3

1/ Crop year is September - August. cwt = hundredweight.

2/ Includes commercial sales and movement under food aid programs such as PL-480.

Source: Prepared by ERS using data of the U.S. Department of Commerce, U.S. Census Bureau.

Table 20 -- U.S. dry bean crop-year import volume to date 1/

Bean class	Crop year 2012/13	September - July		Change 2012/13-13/14	
		2011/12	2012/13		2013/14
----- 1,000 cwt (bags) -----					
Black	295	489	276	363	32
Garbanzo, all	436	332	401	591	47
Pinto	111	94	95	200	112
Small red	84	94	77	76	-1
Navy	106	169	104	92	-12
Dark-red kidney	93	198	79	270	240
Light-red kidney	102	155	95	104	9
Other 2/	1,318	1,809	1,241	1,314	6
Total	2,545	3,339	2,369	3,011	27

1/ Crop year is September - August. cwt = hundredweight. 2/ excludes guar seeds

Source: Prepared by ERS using data from U.S. Department of Commerce, U.S. Census Bureau.

Table 21 -- U.S. dry bean crop year import volume to date, by selected destination 1/ 2/

Destination	Crop year 2012/13	September - July		Change 2012/13-13/14	
		2011/12	2012/13		2013/14
----- 1,000 cwt (bags) -----					
China	418	860	388	431	11
Canada	682	687	630	913	45
Mexico	484	440	440	816	85
Thailand	105	99	97	88	-9
Peru	321	528	318	81	-75
Argentina	22	105	21	11	-47
Other	512	620	474	671	41
Total	2,545	3,339	2,369	3,011	27

1/ Crop year is September - August. cwt = hundredweight.

2/ Includes commercial sales and movement under food aid programs such as PL-480.

Source: Prepared by ERS using data of the U.S. Department of Commerce, U.S. Census Bureau.

Dry Peas and Lentils

Dry Edible Peas, Chickpeas Area Planted Up in 2014

The NASS September 15 *Crop Production* report indicates that area planted to dry edible peas (excluding Austrian winter peas) in 2014 is 921,000 acres and is the second highest area planted since 2006. Acres planted increased 61,000 acres over the 2013 estimate; with four of the five States surveyed—Montana, Washington, Idaho, and Oregon all posting area planted gains. North Dakota is the only State to report a loss with 12 percent fewer acres cultivated as compared to the previous year. Harvest is also slightly behind schedule in North Dakota, with 84 percent harvested as of September 9 compared with 92 percent from last year.

Reflecting strong demand, area planted to chickpeas increased in 2014. Area planted totals a record 224,100 acres in 2014, up 4 percent from last year. The gain is attributed to increased plantings of the smaller chickpea variety Desi. These gains are offset, somewhat, by acreage losses for for larger chickpeas varieties, Garbanzo or Kabuli area planted to these varieties totaled 157,000 acres in 2014, an 8-percent decrease relative to the previous year. Kabulis are largely used for hummus or canning while Desi varieties are usually ground into flour.

Area planted to lentils in 2014 declined 12 percent to 320,000 acres, down from 362,000 acres in the previous year. All four surveyed States posted area planted declines: Idaho (down 3 percent), Montana (down 14 percent), North Dakota (down 7 percent), and Washington (19 percent). The first U.S. production estimate for 2014 dry peas and lentils will be released in the November 10 *Crop Production* report.

During the first two months (July-August) of the 2014/15 marketing year, grower prices (as reported in NASS *Agricultural Prices* report) for dry edible peas were down relative to prices during the same period last year, a reflection of expanded supplies and stable use expectations. In August, the dry-pea price averaged \$12.30 per hundredweight (cwt)—down 15 percent from last August on par with the 5-year average August price. Lentil prices increased 4 percent from last August to \$19.50 per cwt. Prices for all chickpeas is also (large and small varieties) higher, up 9 percent from the 2013/14 August price to \$34.40 per cwt. Kabuli chickpeas, the category leader, averaged \$40.20 per cwt—up 22 percent from last August and 21 percent above the 2013/14 season average farmer price. The prices for all crops are well above loan rates established for 2014.

Table 22--Dry peas and lentils: Planted area

Item	2011	2012	2013	2014	Change
					2013-14
	----- 1,000 acres -----				Percent
Dry peas	362.0	649.0	860.0	921.0	7
Austrian winter peas	18.0	19.0	18.0	28.5	58
Lentils, all	428.0	463.0	362.0	320.0	-12
Chickpeas, total	135.8	207.9	215.7	224.1	4
Small chickpeas	36.9	69.5	45.2	66.9	48
Large chickpeas	98.9	138.4	170.5	157.2	-8
Total	1,079.6	1,546.8	1,671.4	1,717.7	3

Source: USDA, National Agricultural Statistics Service, *Crop Production*.

Table 23--U.S. dry peas and lentils: Monthly grower prices by class, 2013/14 to 2014/15 1/

	Dry peas	Chickpeas			Austrian winter peas	Lentils
		All	Large	Small		
2013/14						
July	16.7	31.4	34.2	25.8	--	20.4
August	14.5	31.6	32.9	27.1	--	18.7
September	14.4	33.5	34	24	--	23.3
October	15.5	30.8	33.5	25.1	25.4	23.1
November	15.9	60.1	--	--	25.4	19.5
December	14.7	54.7	--	21.5	--	20.2
January	15.3	29.2	29.8	23.8	--	18.6
February	15	27.3	28.5	21.4	--	19.4
March	13.4	27	27.6	21.8	--	18.9
April	13.4	25.7	26.8	--	--	18.5
May	13.1	27.5	29.8	--	--	18.5
June	13.1	26.7	27.3	22.1	--	19.1
2014/15						
July	12.8	24.6	29.2	19.5	--	18.9
August	12.3	34.4	40.2	--	--	19.5
Percent change year ago August	-15.2	8.9	22.2	--	--	4.3

-- = not available. 1/ Prices for August 2014 are midmonth averages.

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

Table 24--U.S. dry peas & lentils: Foreign trade volume by class

Item	Market year (July-June)				Change
	2010/11	2011/12	2012/13	2013/14	12/13-13/14
	----- 1,000 cwt -----				Percent
Exports:					
Green peas	2,721.4	2,213.6	2,640.5	3,582.3	36
Yellow peas	2,683.0	569.1	2,212.2	3,300.5	49
Split peas	1,897.6	1,613.2	1,920.8	1,537.3	-20
Austrian winter pea	18.9	25.4	86.6	42.8	-51
Misc. dry peas	2,570.2	1,221.9	1,065.3	1,609.2	51
Chickpeas, all	1,102.3	1,523.3	1,504.2	1,031.3	-31
Lentils, all	3,958.5	3,128.2	4,779.9	3,546.2	-26
Planting seed, all	1,378.7	963.3	1,067.8	803.3	-25
Total (without seeds)	14,951.9	10,294.7	14,209.5	14,649.5	3
Total (with seeds)	16,330.6	11,258.0	15,277.3	15,452.9	1

Source: Compiled by ERS using data from U.S. Department of Commerce, U.S. Census Bureau.

Exports Present a Mixed Picture

During the 2013/14 marketing year (July-June), combined export volume for dry peas, chickpeas, and lentils (excluding seeds) increased 3 percent to 14.6 million cwt from a year earlier. Much of the gain in export volume came from dry peas—yellow dry peas (up 49 percent), green dry peas (up 36 percent), and miscellaneous dry peas (up 51 percent) while export volume for chickpeas, lentils, and other types of peas declined. India (35 percent of volume), China (9 percent), and Spain (7 percent) remained the top foreign markets for U.S. dry peas, chickpeas, and lentils in 2013/14.

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The data are currently organized in four sections:

[Outlook Tables](#), in Excel and PDF format, contain recent data on fresh and processing vegetables, acreage, production, prices, and U.S. trade, as well as data on potatoes, sweet potatoes, mushrooms, and dry pulse crops. Tables are grouped into 6 subsections. Eventually, data contained in the Vegetables and Pulses Outlook tables will be encompassed in the Data by Category and Data by Commodity series.

[Yearbook Tables](#), in Excel and a single PDF file, contain a time series of annual data for U.S. farm acreage, production, prices, trade, per capita use, and more. Eventually, data contained in the Vegetables and Pulses Yearbook tables will be encompassed in the Data by Category and Data by Commodity series.

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<http://www.ers.usda.gov/topics/crops/vegetables-pulses/market-outlook.aspx>

B. ERS Vegetables and Pulses Data: The home page for Vegetables and Pulses data. <http://www.ers.usda.gov/data-products/vegetables-and-pulses-data.aspx>

C. Vegetables and Pulses Topics Page: This ERS site contains some background information on the U.S. vegetable and dry pulses sectors, special articles, and links to more vegetable and pulses information.

<http://www.ers.usda.gov/topics/crops/vegetables-pulses.aspx>

D. Organic Production: This site contains ERS collected data from USDA-accredited State and private certification groups. <http://www.ers.usda.gov/data-products/organic-production.aspx>

E. USDA AMS Market News: Agricultural Marketing Service's web site containing fresh shipments, f.o.b. and terminal market prices, weekly truck rates, annual reports, and more.

<http://www.marketnews.usda.gov/portal/fv>

F. USDA FAS Trade Data—GATS: This online application allows the user to freely access and download detailed U.S. export and import data.

<http://www.fas.usda.gov/gats/default.aspx>

G. NASS Vegetables: Links to USDA, National Agricultural Statistics Service's annual reports on vegetables & melons.

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1183>

H. FAS Fruit and Vegetable Analysis Page: USDA, Foreign Agricultural Services page with special articles, country horticultural reports, presentation and charts, data, and links.

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VGS-354-SA1

Sept. 30, 2014

Vegetables and Pulses Outlook: Special Article

Commodity Highlight: Dry Beans^{1,2}

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Approved by the
World Agricultural
Outlook Board.

The U.S. dry bean sector is unique among the Nation's field crops. In terms of its large farms, capital intensity, and strong export orientation, the sector resembles the U.S. grain and oilseeds sector, and many dry bean farmers in the United States also produce grains or oilseeds. Unlike grains and oilseeds, however, the dry bean sector has experienced little if any overall growth during the past decade. Dry beans are a nutrient-dense food that is both a vegetable and a source of protein, and increased consumption of dry beans would be one way by which the United States could improve the quality of its diet and stimulate dry bean production.

The Sector at a Glance

In 2013, the United States produced about 1.1 million metric tons (24 million hundredweight) of dry beans (including garbanzo and lima beans), with a value of \$977 million and area harvested of about 531,000 hectares (1.3 million acres). Production typically fluctuates from one year to the next, as farmers adjust their area planted in response to expected market conditions, the size of stocks carried over from the previous crop, and other factors, and as varying weather conditions affect yields. Total output, however, has remained fairly stable over the past decade. During 2009-13, annual production averaged about 1.2 million metric tons, and area harvested averaged about 605,000 hectares. The three leading commercial classes produced during that period were pinto (39 percent), navy (15 percent), and black (13 percent).

¹ Steven Zahniser and Hodan Farah Wells are economists with Market and Trade Economics Division, Economic Research Service, USDA.

² This commodity highlight draws upon material presented at the U.S. Dry Bean Convention in Coeur d'Alene, Idaho, on August 5, 2014. The authors thank the participants in that convention for their attention and feedback. The authors also thank Steve Haley, Andrew Muhammad, Mirvat Sewadeh, and Dan Sturt for their comments and suggestions.

Table 1--The 2014 dry bean crop is likely to be larger than the 2013 crop

State	Area planted with dry edible beans			Change
	2012	2013	2014f	2014f versus 2013
	<i>Thousands of hectares</i>			<i>Percent</i>
United States	705	548	708	29
North Dakota	283	178	283	59
Michigan	81	71	85	20
Nebraska	59	53	71	35
Minnesota	65	51	51	0
Idaho	59	51	57	12
Washington	47	47	53	13
Other States	112	99	109	10

1 hectare = 2.47 acres.

f = Forecasted area planted from USDA, National Agricultural Statistics Service (2014b).

Sources: USDA, National Agricultural Statistics Service (2014a,b).

USDA data for area planted suggest that the 2014 dry bean crop will be about 30 percent larger than the 2013 crop and similar in size to the 2012 crop, with large increases in the top three producing States, North Dakota, Michigan, and Nebraska (table 1). Changes in absolute and relative price levels help to explain the increase in area planted in 2014. First, monthly grower prices during the first half of marketing year (MY) 2013/14 (September 2013 to August 2014) were higher than they were during the corresponding months of the previous MY. This absolute price increase may have been due in part to lower stock levels, as the 2013 crop was smaller than average. Second, the price ratio between dry beans and corn increased between 2012 and 2013, suggesting that the relative returns to dry bean production in 2014 were expected to be higher compared with alternative crops.

Trends in Dry Bean Production

The long-term stability of total dry bean production conceals two related structural changes that have taken place in the U.S. dry bean sector over the past decade. First, the composition of production by commercial class has changed, even though total production has remained roughly the same (table 2). In particular, garbanzo beans are now a more prominent part of U.S. dry bean production. During 2008-13, garbanzo beans accounted for 9 percent of total production, compared with 4 percent during 1998-2003. In 2013, garbanzo bean production reached a record 157,000 metric tons, following 6 years of successive increases. Black beans' share of total production also increased between 1998-2003 and 2008-13, from 7 to 13 percent, due in part to increased exports to Mexico. Using the period of 1998-2003 for the comparison, however, somewhat exaggerates this increase in black beans' share, since the 2001 crop was unusually small due to droughts in Michigan and New York (Lucier and Plummer, 2001). Shares of most commercial classes other than garbanzo and black decreased between 1998-2003 and 2008-13.

Second, the distribution of dry bean production by State has also changed (table 3). Three regions account for the vast majority of U.S. dry bean production: (1) the Northern Great Plains (North Dakota and Minnesota); (2) the States along the Platte River (Nebraska, Colorado, and Wyoming); and (3) Michigan.³ But the total share of production associated with these three regions dropped from about three-fourths to about two-thirds over the past decade. Increased garbanzo bean production in Washington and Idaho helps to explain the increased importance of these two States as dry bean producers, while decreased production of pinto beans in Colorado and of Great Northern beans in Nebraska helps to explain the diminished importance of those producing States.

³ Zahniser et al. (2007) provides more detail about these three regions.

Table 2--Garbanzo and black beans now account for a larger share of total dry bean production than they did a decade ago

Class	Average production		Share of total	
	1999-2003	2009-13	1999-2003	2009-13
	<i>Metric tons (thousands)</i>		<i>Percent</i>	
Total	1,198	1,211	100	100
Pinto	490	477	41	39
Navy (pea bean)	202	178	17	15
Black	90	154	7	13
Garbanzo, total	45	112	4	9
Red kidney, total	96	77	8	6
Great Northern	98	57	8	5
Other	177	155	15	13

Source: USDA, National Agricultural Statistics Service (2014d).

Table 3: U.S. Dry Bean Production by State: 1999-2003 versus 2009-13

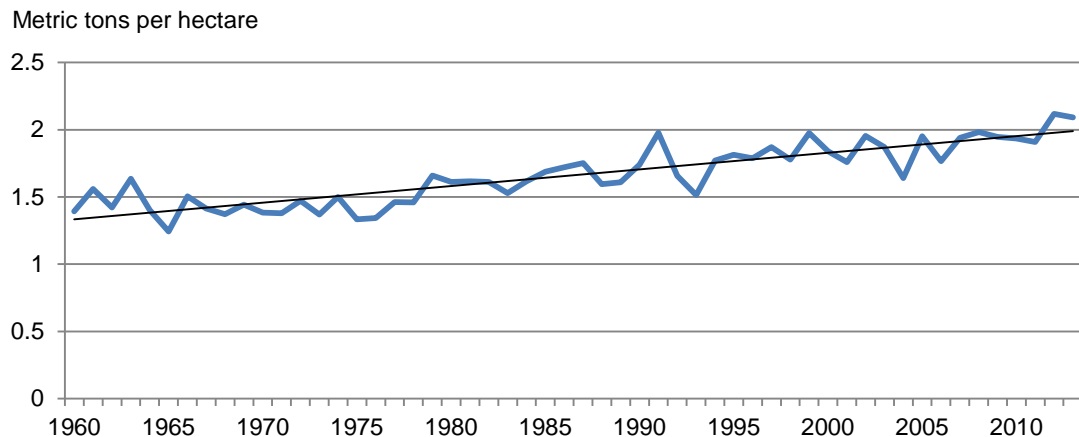
State	Average annual production		Share of total	
	1999-2003	2009-13	1999-2003	2009-13
	<i>Metric tons (thousands)</i>		<i>Percent</i>	
United States	1,198	1,211	100	100
North Dakota	367	396	31	33
Michigan	178	162	15	13
Nebraska	152	124	13	10
Minnesota	100	121	8	10
Idaho	79	107	7	9
Washington	30	75	3	6
California	83	60	7	5
Wyoming	30	40	3	3
Colorado	84	37	7	3
Other States	95	89	8	7

Source: USDA, National Agricultural Statistics Service (2014).

U.S. dry bean yields continue to rise (fig. 1). In 2013, the national average yield (all commercial classes) equaled 2.1 metric tons per hectare. The year before, this yield surpassed 2 metric tons per hectare for the very first time. This trend of rising yields is present for almost all the major commercial classes, even though yields differ substantially by class. During 2009-13, the average yield ranged from 1.7 metric tons per hectare for cranberry beans to 2.7 metric tons per hectare for baby lima beans. This wide range is due to the influence of irrigation and region of production on yields.

The 2012 Agricultural Census suggests that the trend toward further concentration in the dry bean sector has abated, at least for the time being (table 4). Between 1987 and 2007, the number of farms producing dry beans dropped from about 15,900 to 6,200, while the area of dry beans harvested per farm climbed from 42 hectares to 94 hectares. The 2012 Census, however, indicates that the number of dry bean farm has increased to nearly 6,900, while area harvested per farm has expanded to 96 hectares. These data also illustrate how the area devoted to the sector changes from one year to the next, as the 2012 crop featured larger than average quantities of area harvested and production.

Figure 1
U.S. Dry Bean Yields Continue to Trend Upward, 1960-2013



Source: USDA, National Agricultural Statistics Service.

Table 4--U.S. dry bean sector: number of farms and area harvested, 1987-2012

Census year	Number of farms	Area harvested	Average dry bean area per farm
	<i>Number</i>	<i>Hectares</i>	
2012	6,896	664,817	96
2007	6,236	589,040	94
2002	8,647	684,638	79
1997	11,348	700,875	62
1992	13,201	626,764	47
1987	15,914	675,865	42

Note: Data do not include lima beans.

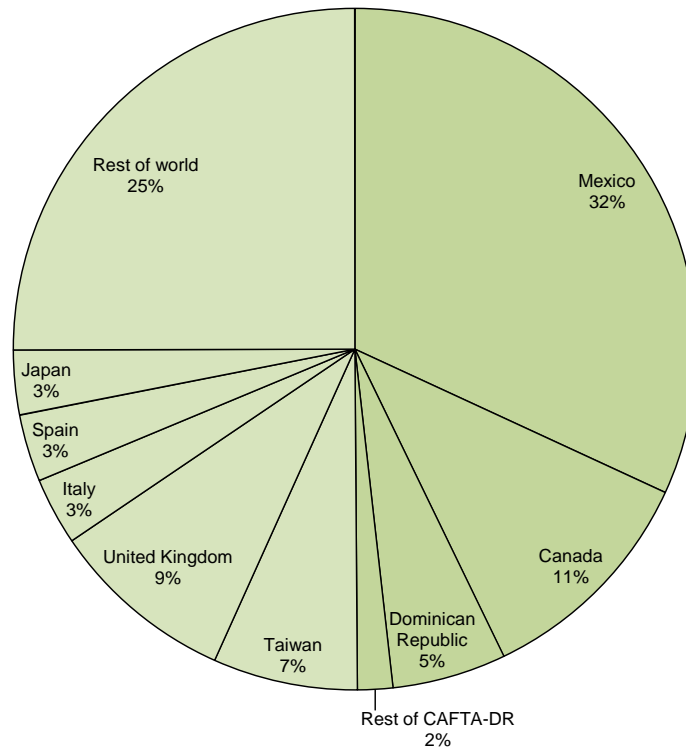
Sources: USDA, National Agricultural Statistics Service (2014d, 2009, 2004, 1999, 1994).

International Trade Is Important to the Sector

The U.S. dry bean sector has become more integrated with the international market over the past decade, due in part to the broader market access afforded by such trade accords as the North American Free Trade Agreement (NAFTA) and the Central America-United States-Dominican Republic Free Trade Agreement (CAFTA-DR). Together, the NAFTA and CAFTA-DR countries purchased about half of total U.S. dry bean exports during MY 2008/09 to 2012/13 (September 2008 to August 2013) (fig. 2). Exports were the destination for 24 percent of U.S. dry bean production during this period, while imports supplied 15 percent of U.S. consumption. During MY 1998/99 to 2002/03, these shares were 18 percent and 9 percent, respectively.

Export growth takes on heightened importance for U.S. dry bean farmers given that per capita dry bean consumption in the United States has not increased much in recent years. Exports averaged about 479,000 metric tons per year (with an average annual value of \$361 million) during MY 2008/09 to 2012/13, compared with 354,000 metric tons (\$191 million) for MY 1998/99 to 2002/03. Imports provide an opportunity to supplement U.S. supplies and to access varieties and commercial classes that are not produced in the United States in large quantities. During MY 2008/09 to 2012/13, imports averaged about 139,000 metric tons per year (\$153 million), compared with 77,000 metric tons (\$45 million) for MY 1998/99 to 2002/03.

Figure 2
The NAFTA and CAFTA-DR countries purchased about half of U.S. dry bean exports during MY 2008/09 to 2012/13



Data include garbanzo and lima beans and are for MY 2008-09 to 2012-13, when total U.S. dry bean exports (to all countries) averaged about 479,000 metric tons per year. NAFTA = North American Free Trade Agreement, whose members are the United States, Canada, and Mexico. CAFTA-DR = Central America-United States-Dominican Republic Free Trade Agreement, whose members are the United States, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, and Nicaragua.
 Source: USDA, Foreign Agricultural Service (2014).

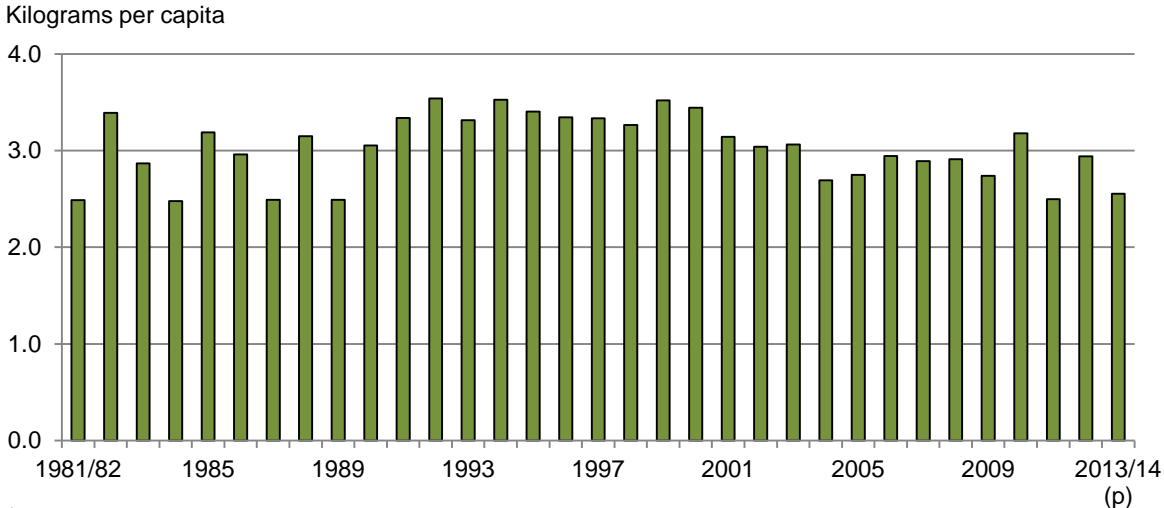
The composition of U.S. dry bean exports by commercial class differs from the composition of corresponding imports. U.S. trade data contain detailed information about the classes and varieties of dry bean trade, although there is some question as to whether these details are consistently and correctly identified over time. According to the available data, the leading classes exported during MY 2008/09 to 2012/13 in terms of volume were pinto (23 percent), black (19 percent), and navy (18 percent), while the leading classes imported were *Vigna mungo* and *Vigna radiata* (28 percent combined), garbanzo (14 percent), and black (13 percent). Some commercial classes are substitutes for others, and this provides U.S. dry bean exporters with short-term marketing opportunities in response to production shortfalls in other countries.

Dietary Changes Shape the Prospects for Domestic Demand

The future of U.S. dry bean demand hinges largely on the extent to which people adopt diets featuring higher levels of dry bean consumption. Annual per capita availability of dry beans in the United States peaked around 5 kilograms (11 pounds) in 1942, and so far during the 21st century, annual availability has averaged 2.9 kg (6.4 lbs) per capita (fig. 3) (1 kg = 2.2 lbs). Despite the declining popularity of low-carbohydrate diets, higher than average consumption by the country's growing Latino population, and efforts to promote dry bean consumption, there are no signs in the data of a long-term upward trend in dry bean consumption at the per capita level. The most recent estimate of annual per capita availability is 2.6 kilograms (5.7 lbs) for MY 2013/14.

Further efforts to publicize the health benefits associated with dry bean consumption may hold the key to increasing U.S. dry bean demand. The 2010 edition of *Dietary Guidelines for Americans* emphasizes that “Americans currently consume too much sodium and too many calories from solid fats, added sugars, and refined grains” and recommends that Americans consume more dry beans, along with other nutrient-dense foods, given that dry beans are both a vegetable and a protein food (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2010: ix). For a reference daily intake of 2,000 calories, the publication recommends that Americans consume about 1-1/2 cups (cooked) of beans and peas per week (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2010: 81). Adopting this recommendation would correspond to an approximate doubling of U.S. dry bean consumption. Such an increase would be a historic event for the U.S. dry bean sector, raising per capita consumption to new levels and bringing hundreds of thousands of hectares of more farmland into dry bean production.

Figure 3
Annual per capita dry bean availability is less than 3 kilograms



(p) = Preliminary. 1 kg = 2.2 lbs.
 Source: Prepared by USDA, Economic Research Service, using data from 2013 *Vegetables and Pulses Yearbook* report.

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