



Economic Research Service | Situation and Outlook Report

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Vegetables and Pulses Outlook

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Conditions for Vegetables and Pulses Send Prices in Opposite Directions

Despite volatility in vegetable and pulse markets influenced, at least partially, by an active hurricane season and multiple import tariff adjustments, both sectors show signs of only modest drops in production for 2019.

Cool, wet conditions in California producing areas caused concern during planting of summer crops, but did provide price support for overall vegetable markets. Freshmarket vegetable trade values were mixed as export values rose over last year while import values declined.

In this report:

Fresh Vegetables

- <u>Production</u> Price
- Trade

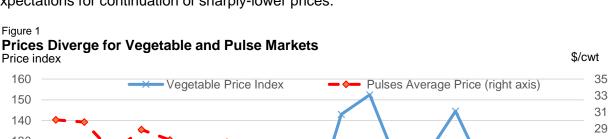
Processed Vegetables

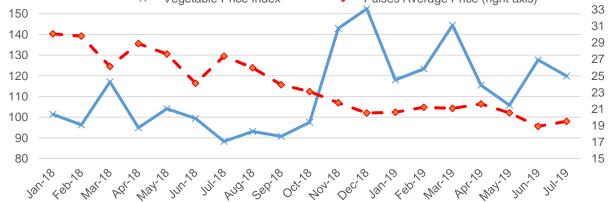
- Trade

Dry Pulse Crops

- Dry Beans
- Chickpeas
- <u>Dry Peas and</u> <u>Lentils</u>

Across all pulse varieties, exports for the current marketing year are projected higher year-to-year. In the first 7 months of 2019, U.S. chickpea, dry bean (excluding chickpeas), and lentil exports were all above the same period in 2018. Forecast growth in pulse use is supported by expectations for continuation of sharply-lower prices.





Source: Economic Research Service, U.S. Dept. of Agriculture using data from USDA, NASS. Price Index = 100 in 2011.

Industry Overview

Table 1: U.S. vegetable and pulse industry at a glance, 2016-2019¹

		<u> </u>				
Item	Unit	2016	2017	2018	Percent change 2017-18	2019f
Area harvested						
Vegetables fresh	1,000 acres	1,662	1,541	1,453	-5.7	1,552
Vegetables processing ⁴	1,000 acres	1,235	1,172	1,163	-0.7	1,190
Potatoes	1,000 acres	1,038	1,045	1,023	-2.0	960
Dry beans, peas, and lentils	1,000 dores	3.794	4,096	3,542	-13.5	3,223
Other ²	1,000 acres	167	163	147	-9.5	159
Total	1,000 acres	7,895	8,016	7,329	-8.6	7,083
Production	1,000 40100	1,000	0,010	.,020	0.0	1,000
Vegetables, fresh	Million cwt	400	397	359	-9.6	385
Vegetables, processing ⁴	Million cwt	372	333	357	7.4	354
Potatoes	Million cwt	450	451	454	0.8	424
Dry beans, peas, and lentils	Million cwt	69	58	62	7.3	61
Other ²	Million cwt	41	45	36	-20.0	41
Total	Million cwt	1,332	1,283	1,268	-1.2	1,264
Crop value		.,002	.,200	1,200		.,
Vegetables fresh	\$ millions	10,809	11,951	10,072	-15.7	10,944
Vegetables processing ⁴	\$ millions	1,903	1,694	1,734	2.3	1,777
Potatoes	\$ millions	4,089	4,135	3,853	-6.8	3,689
Dry beans, peas, and lentils	\$ millions	1,508	1,341	1,308	-2.5	1,198
Other ²	\$ millions	1,843	1,883	1,888	0.2	1,871
Total	\$ millions	20,152	21,004	18,855	-10.2	19,480
Unit value ³	ψ σσ	20,102	21,001	10,000		.0, .00
Vegetables, fresh	\$/cwt	27.05	30.12	28.06	-6.8	28.42
Vegetables, processing	\$/cwt	5.12	5.09	4.86	-4.7	5.02
Potatoes	\$/cwt	9.08	9.17	8.48	-7.5	8.70
Dry beans, peas and lentils	\$/cwt	21.78	23.27	21.16	-9.1	19.78
Other ²	\$/cwt	45.08	42.02	52.66	25.3	46.19
Total	\$/cwt	15.13	16.37	14.87	-9.2	15.41
Imports	4					
Vegetables fresh	\$ millions	7,486	7,354	7,684	4.5	7,931
Vegetables processing ⁴	\$ millions	2,515	2,612	2,806	7.4	2,801
Potatoes	\$ millions	1,241	1,365	1,510	10.6	1,507
Dry beans, peas, and lentils	\$ millions	117	126	156	23.7	118
Other ⁵	\$ millions	1,588	1,605	1,718	7.0	1,719
Total	\$ millions	12,947	13,062	13,875	6.2	14,076
Exports	•	,-	-,	-,-		,-
Vegetables, fresh	\$ millions	2,114	2,160	2,195	1.6	2,332
Vegetables, processing ⁴	\$ millions	1,586	1,513	1,433	-5.3	1,385
Potatoes	\$ millions	1,737	1,814	1,784	-1.6	1,907
Dry beans, peas, and lentils	\$ millions	681	482	364	-24.5	437
Other ⁵	\$ millions	729	897	768	-14.4	885
Total	\$ millions	6,846	6,866	6,543	-4.7	6,946
Per capita availability		·	·	,		•
Vegetables fresh	Pounds	155.9	157.4	144.8	-8.0	150.4
Vegetables processing ⁴	Pounds	106.2	104.7	112.8	7.8	109.5
Potatoes	Pounds	110.1	117.4	113.9	-2.9	112.0
Dry beans, peas and lentils	Pounds	10.7	11.1	13.7	23.2	12.1
Other ²	Pounds	11.2	12.0	9.5	-20.7	10.9
Total	Pounds	394.2	402.7	395.5	-1.8	397.5
f = forecast, 1Total values rounded	d ² Includes swee	t potatoes and mi	ushrooms 3Ra	tio of total va	lue to total pro	nduction

f = forecast. ¹Total values rounded. ²Includes sweet potatoes and mushrooms. ³Ratio of total value to total production.

⁴Includes canned, frozen, and dried. Excludes potatoes, pulses, and mushrooms. ⁵Other includes mushrooms, sweet potatoes, and vegetable seed. All trade data are on a calendar-year basis. Hundredweight (cwt) = 100 pounds. Sources: USDA, Economic Research Service, using data from USDA, National Agricultural Statistics Service, and U.S. trade data from U.S. Department of Commerce, U.S. Census Bureau.

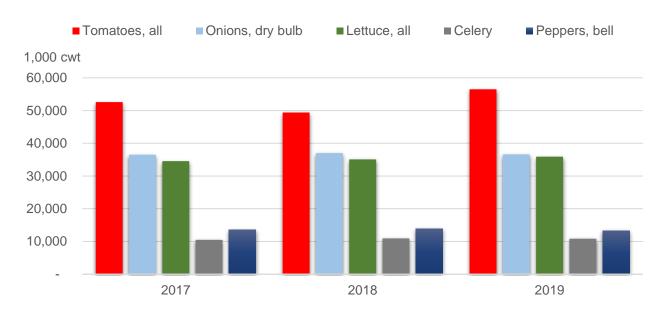
Fresh-Market Vegetables

Fresh Vegetable Shipments Rise

Total year-to-date shipment volume of most 2019 fresh-market vegetables through August increased over the same period last year (table 2). Large increases in all tomatoes and all lettuce drove much of the increase, as the round tomato category jumped 30 percent over the period. In contrast, shipments declined for dry bulb onions, greenhouse tomatoes, bell peppers, and celery (fig. 2). Dry bulb onion shipments (June through August) were slow compared to the prior 2 years. As of September 22, dry bulb onion—growing areas of Washington were at the same harvest pace as last year, but slightly below the 4-year average. Cooler than normal conditions during April hampered plantings and development. The Washington State represented 25 percent of total 2018 U.S. onion production.

Figure 2

Select fresh-market vegetable shipments



Year-to-date-August.

Source: USDA, Economic Research Service using data form Agricultural Marketing Service.

Table 2: Selected U.S. fresh-market vegetable shipments, 2017-2019¹

_	201	2017 2018		8	201	Percent		
Commodity	Aug YTD	Annual		Aug YTD	Annual	Aug YTD	Annual	Change previous ²
			1,000 cwt					
Asparagus	3,834	5,184		4,261	5,724	3,489		-18
Snap beans	2,663	3,775		2,553	3,652	2,484		-3
Broccoli	7,497	11,330		8,065	11,816	8,284		3
Cabbage	6,561	9,870		6,628	10,091	6,532		-1
Chinese Cabbage	631	892		837	1,146	860		3
Carrots	8,402	12,581		9,402	14,623	9,919		6
Cauliflower	3,607	5,528		4,390	6,474	4,153		-5
Celery	10,481	16,199		10,920	17,159	10,838		-1
Sweet corn	11,033	12,835		10,552	11,979	8,646		-18
Cucumbers	14,610	21,829		15,138	22,045	15,210		0
Greens	1,707	2,854		1,737	2,595	1,694		-2
Head lettuce	17,570	25,798		18,559	27,508	18,945		2
Lettuce, romaine	15,451	22,987		15,349	22,523	15,484		1
Lettuce, others	1,536	2,220		1,195	1,890	1,481		24
Onions, dry bulb	36,480	54,252		36,995	56,289	36,616		-1
Onions, green	2,665	3,988		2,724	3,875	2,671		-2
Peppers, bell	13,511	19,946		13,952	19,891	13,343		-4
Peppers, chile	6,449	11,399		7,317	12,257	7,544		3
Squash	7,275	11,624		7,714	11,805	8,412		9
Tomato, field, round	24,767	34,902		22,571	33,030	29,590		31
Tomato, field, Roma	6,079	8,020		6,383	8,676	6,587		3
Tomato, ghouse ³	19,585	28,452		18,796	26,703	18,454		-2
Tomato, small ⁴	2,150	2,677		1,647	2,305	1,879		14
Selected total	224,543	329,142		227,684	334,056	233,112		2

Note: YTD = year to date. 11,000 cw t = 100,000 lbs. Data for 2019 are preliminary and include domestic and partial imports.

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

Farm Prices Supported by Cooler Conditions

During the first 6 months of 2019, point-of-first-sale price for most commercial fresh-market vegetables was above the previous year. The price index for all vegetables was 17 percent higher (table 3). The largest average price increases were led by celery, where price rose over 276 percent from a year earlier. Celery yields and production have been on a downward-trend since 2013, with the exception of 2018 when both rebounded 16 and 11 percent respectively from the prior year. Onion prices rose 60 percent in early 2019, followed by cauliflower (up 29 percent), tomatoes (up 29 percent), and broccoli (up 25 percent). Conversely, two vegetable crops fell during the April-June period: farm prices averaged lower for cucumbers and snap beans (down 23, and 10 percent, respectively).

²Change from YTD August 2018. ³All tomatoes produced under cover. ⁴Grape and cherry tomatoes.

Table 3: U.S. quarterly fresh-market grower (point-of-first-sale) prices, 2018-19

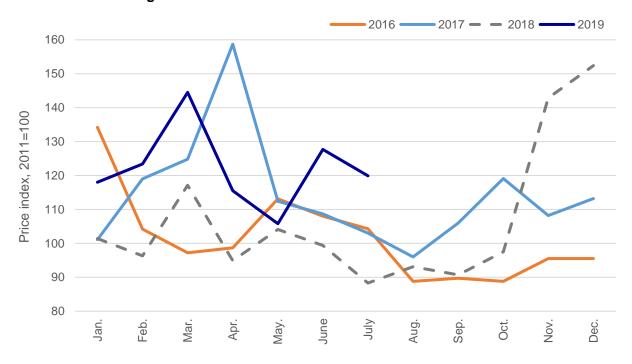
		201	8		2019				Change
Commodity	1st Q	$2^{nd} Q$	3 rd Q	4 th Q	1 st Q	2 nd Q	3 rd Q *	4 th Q *	2nd Q ¹
•					(\$/cwt)				Percent
Asparagus	165.00	99.87				112.13			12.3
Snap beans	69.47	65.50		80.90	48.07	59.25	60.60	71.73	-9.5
Broccoli	40.10	47.80	47.63	70.90	56.40	59.67	40.20	60.30	24.8
Carrots	30.10	27.23	26.40	26.50	27.27	28.13	28.60	26.48	3.3
Cauliflower	59.43	58.30	41.17	72.23	94.57	75.50	65.40	71.16	29.5
Celery	21.73	27.50	18.83	32.43	73.00	103.60	26.60	78.39	276.7
Sweet corn	29.00	29.33	27.03	36.00	36.73	32.17	35.90	39.64	9.7
Cucumbers	37.25	37.20	19.13	38.93	35.35	28.63	23.60	33.98	-23.0
Lettuce, head	33.23	26.77	24.87	60.03	41.27	29.60	41.50	48.81	10.6
Onions, dry bulb	13.27	16.70	15.93	11.13	14.80	26.77	39.80	18.13	60.3
Tomatoes, field	40.77	29.80	24.73	50.77	50.30	38.57	32.10	59.65	29.4
All vegetables ²	104.93	99.47	90.70	130.93	128.63	116.33	59.95	132.78	17.0

^{-- =} not available. * = ERS forecast. Q = quarter. ¹Change in 2nd quarter 2019 over 2nd quarter 2018.

Most vegetable growing areas in California experienced wetter and cooler than normal spring planting conditions February through April 2019, which likely slowed early development. The price index for all vegetables responded by rising above the index reading for the past 3 years during February and March 2019 (fig. 3).

Figure 3

Price index – total vegetables



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

²Price index with base period of 2011 (the period when the index equaled 100).

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

Retail Pricing Momentum Continues

The overall Consumer Price Index (CPI) for fresh-market vegetables rose 4 percent from a year ago this August, and has been on an upward trend the past two years. Likewise, the CPI for potatoes, tomatoes, lettuce, and other vegetables rose from last year this August. Even though the Producer Price Index (PPI) for fresh vegetables (excluding potatoes) declined between July and August 2019, it still remained 4 percent above August 2018. PPI values for sweet corn, tomatoes, and beets were all up from the prior month and from last August, increasing 104, 64, and 53 percent respectively from last year (table 4). Celery (up 45 percent over last year) is returning to normal levels after rising and peaking in April 2019 at a record 12 year high.

Table 4: Fresh vegetables: Consumer and producer price indexes

	2018	20	19	Change previous ¹ :		
Item	Aug	July	Aug	Month	Year	
		Index		Percer	nt	
Consumer Price Indexes (198	2/84=100)					
Food at home	240.0	241.6	241.1	-0.2	0.5	
Food away from home	276.6	284.9	285.5	0.2	3.2	
Fresh vegetables	323.5	335.9	336.7	0.2	4.1	
Potatoes	356.7	372.2	378.9	1.8	6.2	
Tomatoes, all	322.0	319.5	323.5	1.3	0.4	
Lettuce, all	291.0	326.2	317.4	-2.7	9.0	
Other vegetables	327.0	337.2	337.8	0.2	3.3	
Producer Price Indexes (12/19) Fresh vegetables	991=100)					
(excl. potatoes) 2/	197.7	277.6	205.5	-26.0	3.9	
Beets	93.9	110.3	143.5	30.1	52.8	
Broccoli	241.2	141.1	137.5	-2.6	-43.0	
Cabbage	265.5	294.1	244.1	-17.0	-8.1	
Carrots	170.6	187.4	175.9	-6.1	3.1	
Cauliflower	42.0	72.1	48.8	-32.3	16.2	
Celery	147.3	233.9	213.1	-8.9	44.7	
Cucumbers	205.1	338.5	217.1	-35.9	5.9	
Eggplant	345.8		408.4		18.1	
Endive	391.9	428.8	441.0	2.8	12.5	
Green peas	139.5					
Greens	183.7	233.8	200.8	-14.1	9.3	
Lettuce 2/	254.4	490.6	205.7	-58.1	-19.1	
Onions, dry bulb 2/	151.8	232.3	195.9	-15.7	29.1	
Peppers, green	268.5	347.6	259.0	-25.5	-3.5	
Spinach	527.1	339.3	432.1	27.4	-18.0	
Squash	203.7	352.9	187.5	-46.9	-8.0	
Sweet corn	114.8	132.6	234.6	76.9	104.4	
Tomatoes 2/	176.0	221.1	289.5	30.9	64.5	

¹Change in August 2019 from previous month/year. ²Index base is 1982=100.

Source: U.S. Dept. of Labor, Bureau of Labor Statistics (http://www.bls.gov/data/home.htm).

Fresh Exports Grow While Imports Slump

According to the U.S. Census Bureau, between January-July 2019, the volume of fresh-market vegetable exports (excluding potatoes, sweet potatoes, melons, and mushrooms) grew 3 percent from the previous year, led by dry bulb onions. Weather concerns in Mexico likely helped to spike U.S. bulb onion exports to Mexico by 63 percent during the period (Table 5), and onions accounted for 22 percent of total exports (excluding potatoes, sweet potatoes, melons, and mushrooms). Imports of fresh-market vegetables (excluding potatoes, sweet potatoes, melons, and mushrooms) fell 4 percent during January-July 2019. Tomatoes and other vegetable imports declined 1 and 17 percent, respectively.

Table 5: Selected fresh-market vegetable trade volume, 2017-19¹

	2018 January-July				Change
	Annual	2017	2018	2019	2018-19
		Million po	unds		Percent
Exports, fresh:					
Onions, dry bulb	731	306	286	466	63
Lettuce, head	258	153	149	137	-8
Lettuce, other	454	253	247	261	5
Tomatoes	183	113	108	104	-4
Cauliflower	284	152	178	154	-13
Carrots	223	122	127	119	-6
Celery	250	147	159	122	-23
Other	1,114	832	828	787	-5
Subtotal	3,498	2,077	2,082	2,150	3
Mushrooms	15	6	10	11	6
Potatoes	1,060	789	620	779	26
Sweet Potatoes	656	402	447	369	-17
Total	5,231	3,274	3,159	3,309	5
Imports, fresh:					
Tomatoes, all	4,092	2,454	2,630	2,616	-1
Cucumbers	2,081	1,199	1,317	1,363	4
Peppers, sweet	1,534	920	988	1,017	3
Lettuce, all	616	352	353	463	31
Onions, dry bulb	1,252	729	801	660	-18
Peppers, chile	994	494	517	522	1
Celery	132	107	87	161	85
Asparagus	568	325	369	363	-2
Other	5,371	2,557	2,693	2,249	-17
Subtotal	15,388	9,136	9,755	9,413	-4
Mushrooms	151	76	84	95	14
Potatoes	1,072	755	719	556	-23
Sweet Potatoes	29	16	17	19	10
Total	16,641	9,983	10,575	10,083	-5

¹Excludes melons, and dry pulses.

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

Imports of Mexican Tomatoes and the Suspension Agreement

In May 2019, the U.S. formally terminated a longstanding agreement with Mexico, which set a minimum price (referred to as a reference price) for fresh-market tomatoes entering into U.S. commerce from Mexico. This agreement was originally enacted in 1996 to suspend an antidumping lawsuit brought by the United States against Mexico. With the termination of the agreement, the U.S. formally reinitiated anti-dumping investigations against Mexico tomato imports and removed the minimum price restrictions from the markets. On August 20, 2019, the U.S. and Mexican tomato producers agreed to an updated draft agreement, which should take effect this year. The updated agreement raises some reference prices, creates new reference prices for organic varieties, and emphasizes enforcement. More background on this market and the agreement can be found in the March 2019 ERS report, "Unpacking the Growth in Per Capita Availability of Fresh Market Tomatoes," and current information on the agreement can be found on the U.S. Department of Commerce's website.

Million pounds S.A. ends 450 ■ Mexico ■ Rest of World 400 350 300 250 200 150 100 50 0 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Oct-17 Nov-17 Dec-17

Figure 4

Monthly imports of fresh tomatoes into the United States, 2017–present

Note: S.A. = Suspension Agreement

Source: USDA, Economic Research Service using data from U.S. Census Bureau.

Mexican shipments of fresh tomatoes were down 10 percent in May and 1 percent in June from previous year levels (fig. 4). It remains to be seen if there will be any lasting impact of the removal and reinstatement of the suspension agreement between May and August of 2019.

Processing Vegetables

Processed Vegetable Trade Down

From January to July 2019, the value of processed (canned, frozen, dried) vegetable imports fell 2 percent from the previous year. The markets were mixed: canned vegetables (down 4 percent from last year), frozen vegetables (up 2 percent), and dried and dehydrated vegetables (down 1 percent) (table 6). The combined value of all three markets of processed vegetable exports (canned, frozen, and dehydrated) declined 5 percent during January–July from a year earlier. Exports of canned products during the first 7 months of the 2019 calendar year declined 3 percent to \$615 million from a year ago. Tomato products, which accounted for 60 percent of total canned exports in 2019, also fell 3 percent by July 2019.

Table 6: Value of processed vegetable trade, 2017-2019¹

	2018	J	January-July			
Item	Annual	2017	2018	2019	2018-19	
		Million	dollars		Percent	
Imports:						
Canned	1,508	840	858	820	-4	
Tomato products	210	103	118	134	13	
Frozen	1,297	670	770	784	2	
Broccoli	341	177	213	215	1	
Dehydrated ¹	748	408	428	422	-1	
Peppers (excl. Paprika)	224	116	125	137	10	
Mushrooms for processing	170	97	99	95	-4	
Potatoes for processing	1,283	672	757	773	2	
Exports:						
Canned	1,088	672	638	615	-3	
Tomato products	643	409	386	375	-3	
Frozen	347	214	212	189	-11	
Sweet corn	107	67	65	61	-6	
Dehydrated ¹	189	123	114	109	-4	
Onion products	80	45	49	47	-3	
Mushrooms for processing	9	8	6	4	-26	
Potatoes for processing	1,550	911	907	957	6	

¹Also includes miscellaneous dried leguminous vegetables.

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

Potatoes

Planted, Harvested Areas Continue 4-Year Slide

The 2019 all-potato acreage indicates a 6-percent decline in planted acres and a 5-percent decline in harvested acres from a year ago. In 2019, U.S. potato growers planted 967,500 acres. Two States, Idaho and Washington, accounted for almost half of the 2019 crop area. Idaho was unchanged from last year, while Washington increased acreage by 3 percent. Declines in some remaining States accounted for the overall decline.

According to USDA's National Agricultural Statistics Service (NASS), as of September 22, the potato harvest in Idaho was 27 percent complete—the slowest pace in the past 3 years due to heavy rainfall. All other reporting states are also reporting a slower harvest pace this year. The exceptions are the states of Washington, and Oregon which are at 42 and 66 percent harvested respectively. The state of Washington is below its 4-year average harvest pace while Oregon is slightly ahead of average pace.

Two indicators are suggesting downward pressure on yields for the 2019 U.S. potato crop: historical weighted averages of condition ratings for the Idaho and Washington potato crops and historical departures from normal precipitation during the critical April-May planting period in Idaho (ID), Oregon (OR), and Washington (WA). The Northwest region was 143 percent of normal precipitation in the April-May period of 2019, and yields are predicted slightly down from 2018 levels (fig. 5). The reduced 2019 acreage, and lower average yields couple to indicate a 2019 production potential to 424 million cwt–down 6 percent from last year.

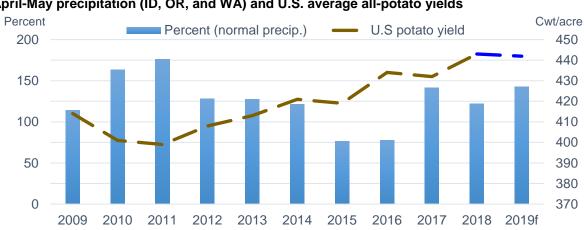


Figure 5
April-May precipitation (ID, OR, and WA) and U.S. average all-potato yields

Note: f = ERS 2019 yield forecast. Cwt = hundredweight. Source: USDA, Economic Research Service using data from U.S. Commerce Dept., NOAA and USDA, National Agricultural Statistics Service.

Pulses

Despite Smaller Production, Pulses Prices Down in 2019, Helping To Lift Use Projections

In concert with declining cash and futures prices for key agricultural commodities such as corn and wheat, prices for dry beans, dry peas, lentils, and chickpeas are trending sharply lower in 2019 (fig. 6). Dry bean prices for 2019 have averaged \$1.40/hundredweight (cwt) lower in each month of 2019 compared to 2018, while monthly chickpea prices have fallen much more dramatically, averaging \$12/cwt lower in each month during the period. Dry pea and lentil prices have also plunged, with monthly lentil prices falling the furthest, down an average of \$8.20/cwt from the previous year and near the \$13/cwt loan rate established in the 2018 Farm Bill. Dry pea prices have fared somewhat better, with monthly prices averaging about \$1.10/cwt below last year's prices. Across all pulse varieties, relatively low prices are expected to continue to support a year-to-year expansion in the export and domestic use projections. However, the price-dampening effect of low U.S. commodity prices is forecast to more than offset the price-supporting impact of pulse crop balance sheet tightening. Season-average price forecasts for all pulse categories are lower for 2019/20.

Figure 6
U.S. pulses monthly average prices (January to July) for 2019 fall below 2018 figures



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

2019 Dry Bean (excluding Chickpea) Production and Carryout Forecast Down For 2018

The August USDA, NASS *Crop Production* report indicated that all dry bean production (less chickpeas) is estimated at 2,457 million pounds, down only slightly from the 2,475 million pounds produced in 2018. This report also provided the first estimates of dry bean planted area by State (fig. 7) and by commercial class for 2019, revealing a number of significant shifts. Notably, navy bean planted area is down 8 percent from 2018, while area planted to Great Northern beans is up 9 percent year-to-year. While these two bean types are quite similar and interchangeable in a number of food preparations, though production for each is concentrated in separate States. Navy bean production is projected down 5,000 acres in North Dakota (-6 percent), where more than 80 percent of the 2018 crop was grown. Area planted to Great Northern beans in Nebraska is projected up 3,500 acres, or close to 9 percent. Black bean planted area is up 21 percent from 2018. The sizable increase in black bean plantings is likely tied to expectations of increased demand from key trade partner Mexico. Mexico is reported to have been experiencing dryness in the key dry bean production regions which delayed planting. In 2018, 61 percent of U.S. black bean exports were destined for Mexico.

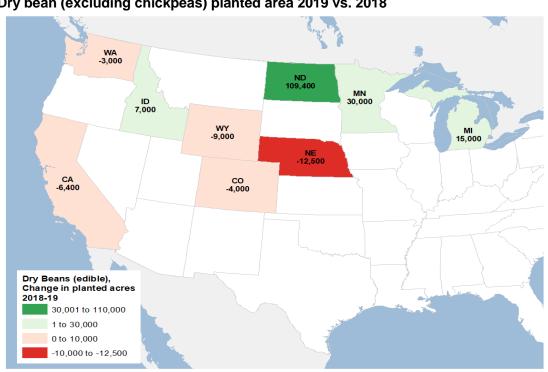
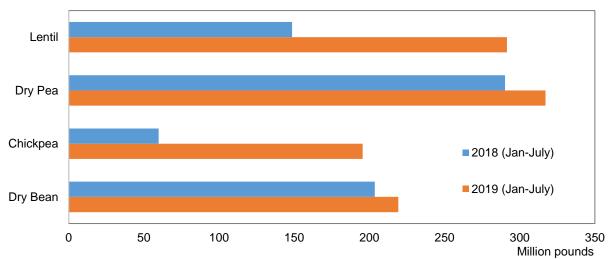


Figure 7: Dry bean (excluding chickpeas) planted area 2019 vs. 2018

Sources: USDA, National Agricultural Statistics Service and USDA, Economic Research Service calculations.

Based on trade data through the first 7 months of 2019, total U.S. dry bean (excluding chickpeas) calendar year exports are forecast to increase by about 12 percent from the 2018 estimate on surging shipments for multiple classes of white beans and kidney beans (fig. 8). Despite the imposition of retaliatory tariffs by the European Union (EU), highly competitive prices for U.S. beans have helped to support an uptick in sales to several EU countries, especially for navy and dark red kidney beans. Through the first 7 months of 2019, Mexico has become the top importer of U.S. Great Northern and white beans after not having purchased those varieties during the same period in 2018. Rising use for all dry beans combines with reduced total supplies to tighten the 2019 balance sheet. However, broadly weaker U.S. commodity prices inhibit dry bean price recovery, resulting in a lower year-to-year season-average price forecast for 2019.

Figure 8
Through first 7 months of 2019, exports of all classes of U.S. pulse crops are up relative to same period in 2018



Sources: USDA, Foreign Agricultural Service, Global Agricultural Trade System and USDA, Economic Research Service calculations.

Chickpea Price Declines Aid Recovery of Export Sales in 2019

The September USDA, NASS *Crop Production* report revealed that chickpea production for 2019 is estimated at 717.4 million pounds, 44 percent below 2018. Significant carryin from the 2018 marketing year adds to 2019 total supplies that, at 1,405 million pounds, are still well-above the 5-year average and just 15 percent smaller than last year's record-high supply of 1,670 million. Estimated carryout is lower for 2019 on increased use, most notably for exports. Through the first 7 months of 2019, chickpea exports are more than 3 times the volume of 2018 shipments during the same period, aided by prices that have fallen well below 2018 levels (fig.

8). In late September, load deficiency payments (LDPs) became available for 2019-crop chickpeas. Chickpea exports have surged to key trade partners Pakistan, Canada, and Spain, while exports to India have yet to recover to levels seen prior to the escalation of tariffs in 2018.

Lentil Prices Fall, Triggering LDPs and Facilitating Record-Large July Exports

Lentil prices have fallen by more than \$3/cwt since in the beginning of 2019, with monthly farm prices closing in on the \$13/cwt national loan rate specified in the 2018 Farm Bill (which raised the rate from the \$11.28 specified in the previous bill). In mid-August, posted county prices fell below regional loan rates, making LDPs available for 2019-crop lentils. Low lentil prices have improved U.S. competiveness in global export markets, facilitating steady increases in lentil sales through the first 7 months of 2019 (fig. 8). Indeed, July lentil exports totaled more than 111 million pounds and represent the largest volume of U.S. lentils sold in 1 month since records began in 1967. Sales were largest to Canada, where wet conditions have delayed the lentil harvest and imported U.S. product is regularly re-exported to other countries. India has re-emerged as a leading buyer of U.S. lentils despite the ongoing imposition of tariffs. Indian prices for local red and green lentils are up sharply following the realization of smaller than expected kharif (fall 2018) and rabi (spring 2019) harvests. Lentil exports to Sudan are also sizable and have been substantial supplemented by food aid shipments.

Greatly Expanded Plantings Help To Lift Dry Pea Production 40 Percent

The September USDA, NASS *Crop Production* report revealed that Montana farmers expanded dry pea sowings by nearly 200,000 acres (a 58-percent increase) in 2019, helping to raise U.S. planted area by a total of 238,000 acres or 28 percent from 2018. Montana farmers planted 300,000 fewer spring wheat acres in 2019, a possible indication of switching between wheat and pulse crops. Multiple industry sources report growing use of dry peas in pet food, as well as pea protein in products intended for human consumption such as plant-based meat substitutes, bakery products, and snacks. Use of dry pea-sourced protein is reported to offset some demand for soybean-based protein, in part because dry-peas are non-GMO and they have fewer allergen concerns than soy protein. These factors combine to raise the forecast for U.S. domestic disappearance in 2019/20. Sales data through the first 7 months of 2019 indicate that dry pea exports have exceeded shipments during the same period last year by about 10 percent (fig. 8). Like other pulse crops, dry pea exports are aided by lower prices. Exports of green and yellow peas, in particular, are up sharply, with greatly increased sales to Canada and India driving expectations for increased marketing-year exports.

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