



# Feed Outlook

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## Yields Lowered for Corn and Sorghum, Reducing Supplies

USDA's National Agricultural Statistics Service *Crop Production* report projected lower yields for corn and sorghum this month, reducing the crops by 152 and 18 million bushels, respectively. The reduced supplies pushed corn and sorghum prices up \$0.10 per bushel to \$3.60 and \$3.40 per bushel, respectively. Projected corn exports are lowered 25 million bushels to 2,450 million, and sorghum exports are lowered 50 million bushels to 100 million. Projected feed and residual are lowered 50 million bushels for corn and 30 million bushels for sorghum.

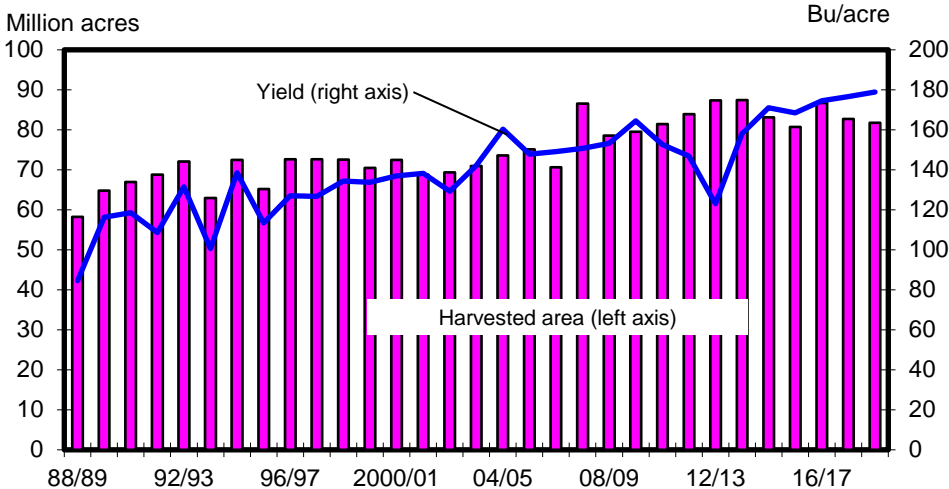
Apart from an historical multi-year revision of Chinese corn data, the most important event of this month is a record-high projection for Ukrainian corn production and exports. With lower supplies, the United States is expected to lose some of its previously projected corn exports but remains at a close-to-record export level. U.S. sorghum exports are projected lower, reflecting a decline in imports by Mexico.

# Domestic Outlook

## U.S. Feed Grain Supplies Lowered

Projected 2018/19 U.S. feed grain supplies are lowered 4.3 million metric tons this month on lower corn and sorghum production due to lower yields. Supply is projected at 446.0 million tons, 2.8 million below 2017/18. Projected feed grain use is lowered 2.4 million tons this month to 398.5 million but is 7.6 million higher than 2017/18. Feed and residual is lowered slightly to 144.8 million tons while food, seed, and industrial (FSI) is unchanged at 188.8 million. Exports are lowered 1.9 million tons to 64.9 million due to reductions in U.S. sorghum and corn exports. Resulting ending stocks are projected 1.9 million tons lower at 47.5 million, which is 10.4 million below 2017/18.

Figure 1  
**U.S. corn harvested area and yield**



Sources: USDA, National Agricultural Statistics Service, *QuickStats* and USDA, World Agricultural Outlook Board, *Crop Projections, 2018*.

For 2017/18, a slight increase in corn for fuel ethanol is reflected in a like decline in feed and residual use based on USDA's latest *Grain Crushings* report.

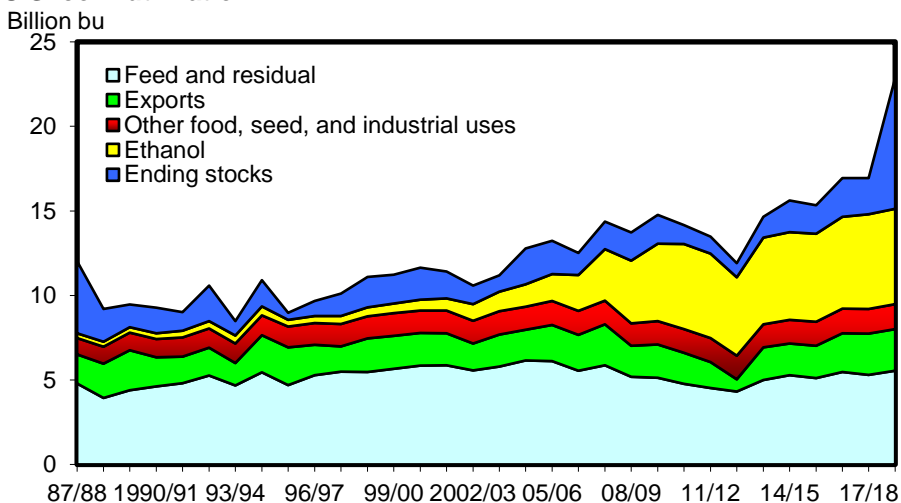
## Grain Consuming Animal Units

Grain consuming animal units (GCAU) for 2018/19 are projected at 101.1 million units, down slightly from last month's 101.2 million and 2.2 million units over last year. Compared with last month, dairy cows and poultry are lower. Feed and residual use per GCAU is projected at 1.47 tons per GCAU, compared with 1.50 tons last month.

## Feed and Residual Use: Four Grains and Wheat

Feed and residual use for the four feed grains (corn, sorghum, barley, and oats) and wheat, on a September-August marketing year basis, for 2018/19 is projected at 148.6 million metric tons, 2.9 million tons below last month's projection of 1.51.5 million and 7.9 million over the revised 140.7 million tons for 2017/18. This month, lower corn and wheat use account for the change.

Figure 2  
**U.S. corn utilization**



Note: Marketing year 2018/19 is projected.  
Source: USDA, World Agricultural Outlook Board, WASDE.

## Projected 2018/19 Corn Yield Lowered

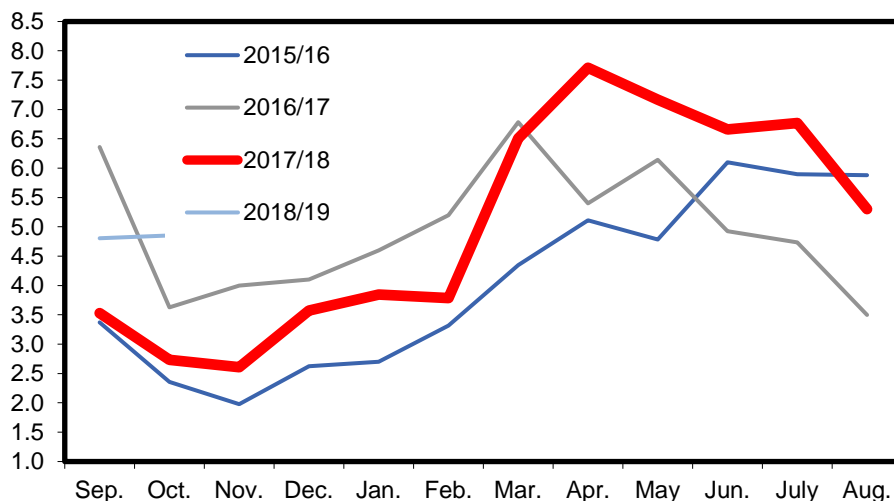
USDA's National Agricultural Statistics Service (NASS) fourth survey-based yield forecast for the 2018/19 corn crop reported a yield decline of 1.8 bushels per acre to 178.9 bushels from last month's estimate, still a record high. If realized, this would produce a crop of 14,626 million bushels from the forecast 81.8 million acres to be harvested, 151.9 million bushels below last month's forecast. NASS's November 8 *Crop Production* report indicates lowered yields for Minnesota, South Dakota, Iowa, Wisconsin, Illinois, and Kentucky and higher forecasted yields for Texas, Missouri, Ohio, and Michigan. Among the major corn-producing States, Illinois, Nebraska, Indiana, Ohio, and South Dakota all have record yields.

Corn supplies are projected at 16.816 million bushels due to the change in production. Supplies are also projected to be the third highest ever, after 2016 and 2017.

# Disappearance Lowered for 2018/19

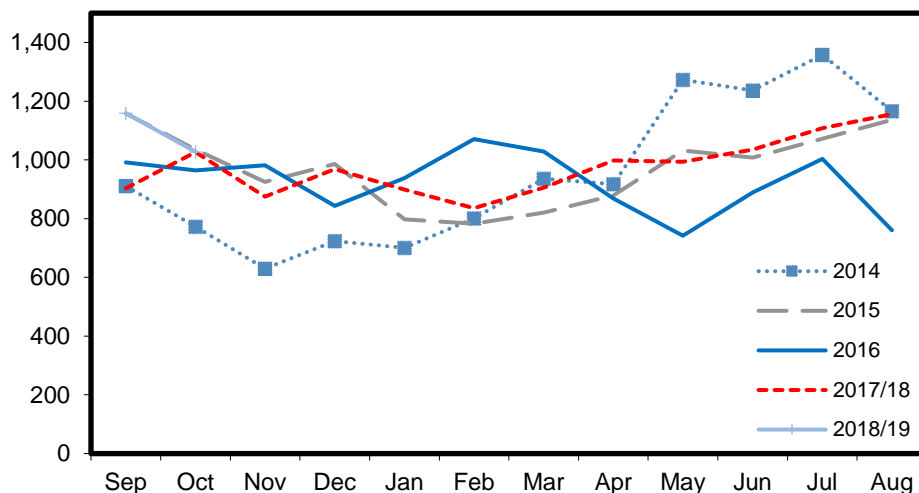
Projected total use is lowered this month to 15,080 million bushels, 75 million below than last month's projection. Exports are lowered 25 million bushels to 2,450 million, still a record level. Expanded production in the Ukraine is expected to help that country compete with the United States in export markets, resulting in reduced prospects for U.S. shipments.

Figure 3  
**Monthly U.S. corn exports**  
 Million metric tons



Source: USDC, U.S. Census, August 2018 *Grain Inspections*.

Figure 4  
**U.S. dried distillers grains with solubles exports**  
 1,000 metric tons



Source: USDA Economic Research service with data from U.S. Census Bureau.

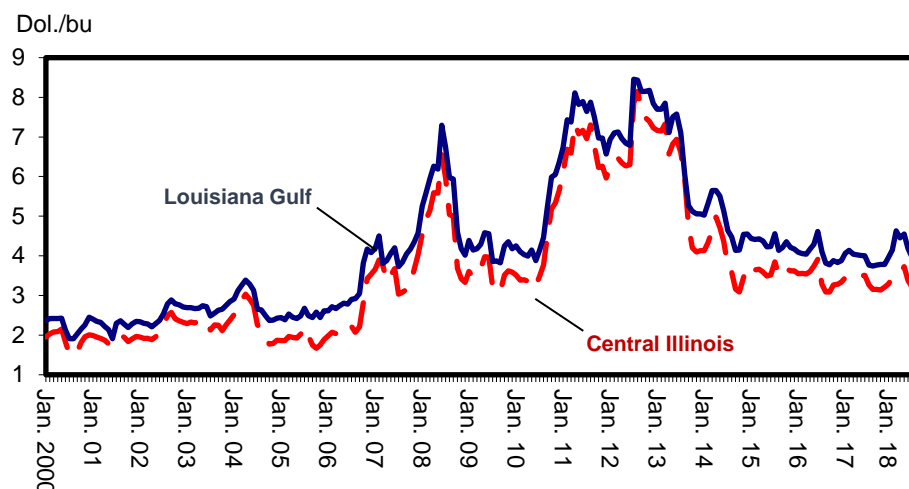
Feed and residual for 2018/19 is projected 50 million bushels lower than last month at 5,500 million due to the smaller crop size and higher expected prices.

Lower production and use result in ending stocks projected lower by 76.9 million bushels to 1,736 million. The stocks-to-use ratio of 11.5 is 0.5 lower than last month and 3 percentage points lower than a year earlier.

## 2018/19 Corn Price Raised This Month

The projected average price received by farmers for 2018/19 has a range \$3.20 to \$4.00 per bushel for a midpoint price of \$3.60, based on the reduced production projection and year-to-date marketings. The projected price is \$0.10 per bushel higher than last month's projection and \$0.24 higher than the 2017/18 season average price of \$3.36 per bushel.

Figure 5  
**Monthly corn (yellow #2) prices for Central Illinois and Louisiana Gulf**

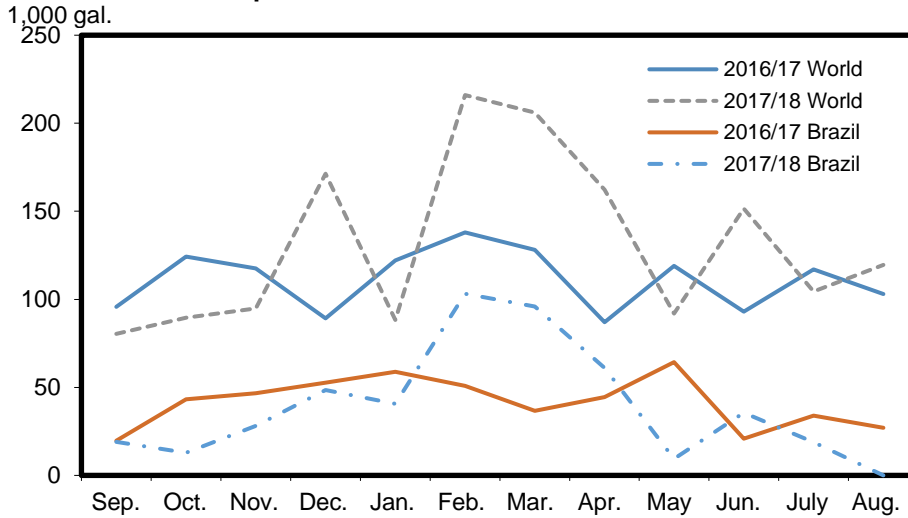


Sources: USDA, Economic Research Service, *Feed Grains Database* and USDA, Agricultural Marketing Service, <http://marketnews.usda.gov/portal/lg>.

## 2017/18 Fuel Ethanol Exports

U.S. fuel ethanol production of 16,153 million gallons accounted for 5,605 million bushels of corn in 2017/18, 173 million over the previous year. Of total fuel ethanol production, 1,636 million gallons, or 10 percent of total use, was exported. In a mature market such as that for fuel ethanol in the United States, exports are a significant area for potential contraction or expansion since other sectors are relatively stable and dependent on gasoline consumption, for the most part.

Figure 6  
**U.S. fuel ethanol exports**

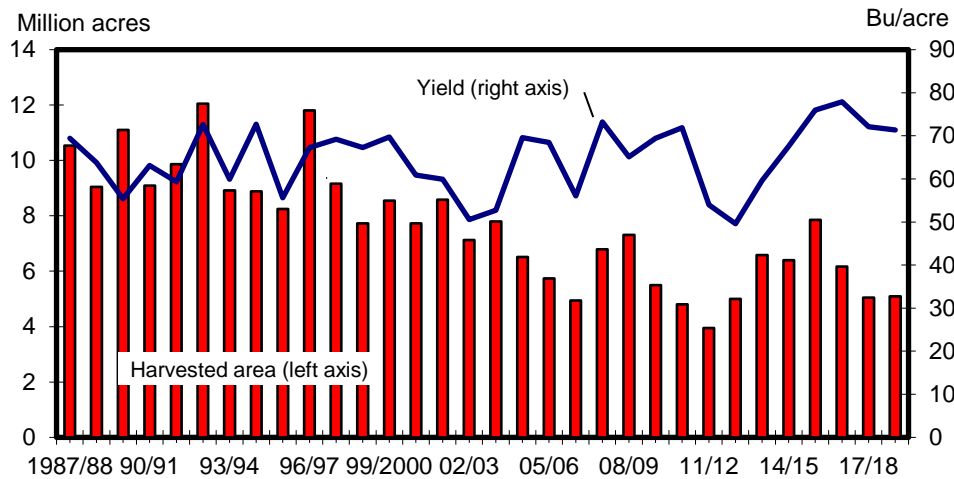


Source: USDA Economic Research Service with data from USDC, U.S. Census Bureau.

## Projected Sorghum Exports Continue To Fall With Lower Production and Slow Export Sales:

For U.S. sorghum, area planted and area harvested remain unchanged at 5.8 million acres and 5.1 million acres, respectively. The yield is reduced by 3.6 bushels per acre to 71.4 bushels per acre, down from 75.0. This in turn reduces sorghum production by 18.2 million bushels, or 4.4 percent, to 363.7 million.

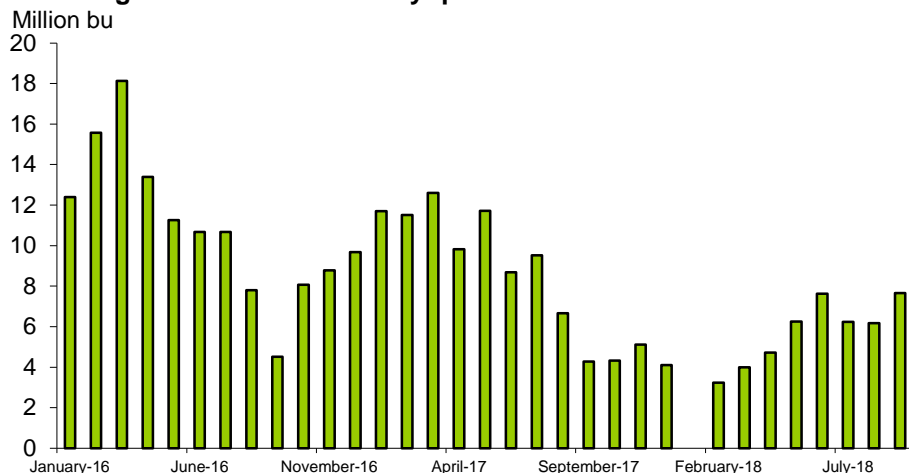
Figure 7  
**U.S. sorghum harvested area and yield**



Sources: USDA, National Agricultural Statistics Service, *Quick Stats* and USDA, World Agricultural Outlook Board, *WASDE*.

Total use in 2018/19 is reduced by 20.0 million bushels from 380.0 million to 360.0 million. Projected feed and residual use is increased by 30.0 million bushels to 135.0 million, or about 28.6 percent. This is partially offset by a 50.0-million-bushel decrease in exports from 150.0 million to 100.0 million, based on the slow pace of export sales and shipments to date. If observed, this would be the largest feed and residual quantity since 2008/09.

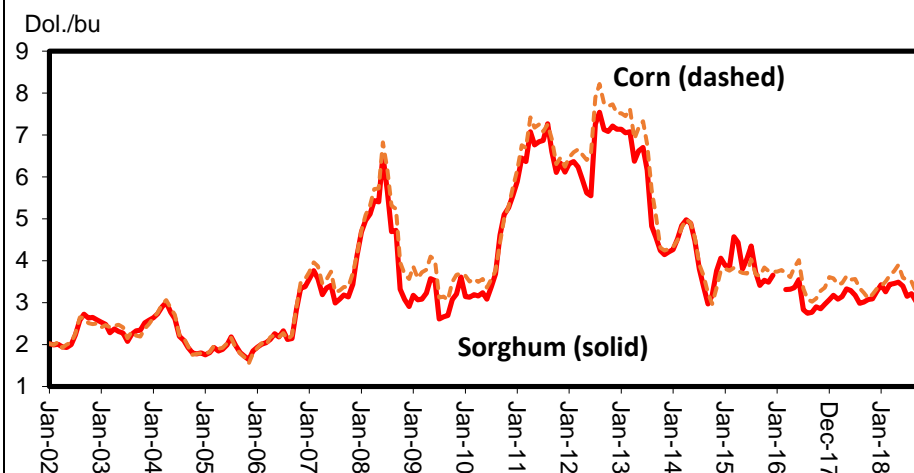
Figure 8  
**U.S. sorghum for ethanol use by quarter**



Note: Months for which data were withheld to avoid disclosure are shown as null.  
 Source: USDA Economic Research Service with data from USDA National Agricultural Statistics Service, *Grain Crushings and Co-Products. Production.*

The season-average price is also revised upward by \$0.10 per bushel, with an estimated price range of \$3.00 to \$3.80 per bushel. If realized, this would be the highest price observed since 2014/15.

Figure 9  
**Monthly yellow #2 grain sorghum and corn prices for Kansas City**

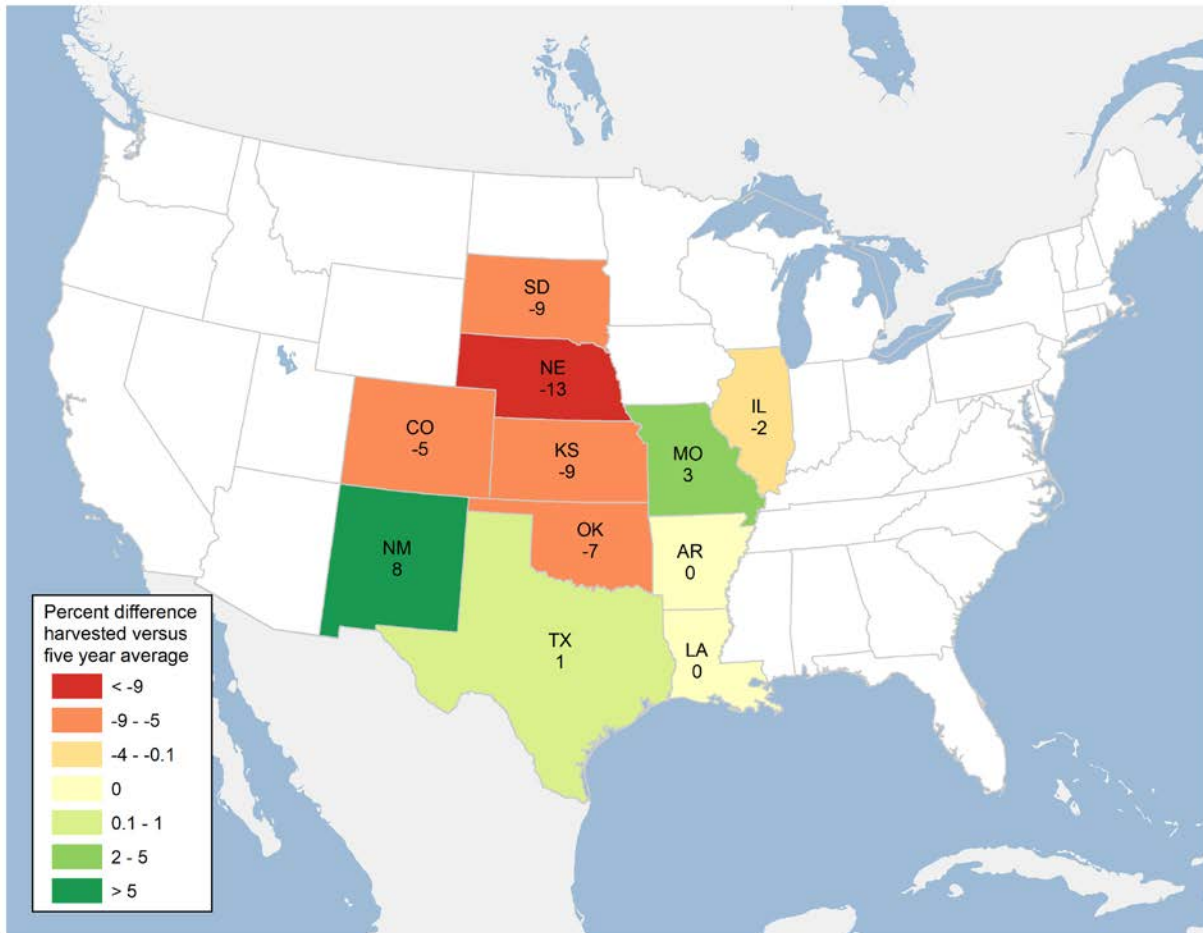


Sources: USDA, Economic Research Service, *Feed Grains Database* and USDA, Agricultural Marketing Service, <http://marketnews.usda.gov/portal/lg>.

The season's sorghum harvest is progressing similarly to the 5-year average, with 70.0 percent harvested as of November 4 according to NASS's *Crop Progress* report, with the average for this time being 76.0 percent. This fractional delay is driven by Colorado, Illinois, Kansas,

Nebraska, Oklahoma, and South Dakota progressing marginally behind the 5-year harvest pace. This can visually be viewed below.

Figure 10  
**Sorghum harvest progress versus the five-year average**



Source: USDA, Economic Research Service with data from National Agricultural Statistics Service, *Crop Progress Report* dated November 5, 2018.

## No Changes to Report on Oats and Barley

Barley and oats supply, use, and ending stocks in 2017/18 and 2018/19 remain unchanged in November from October.

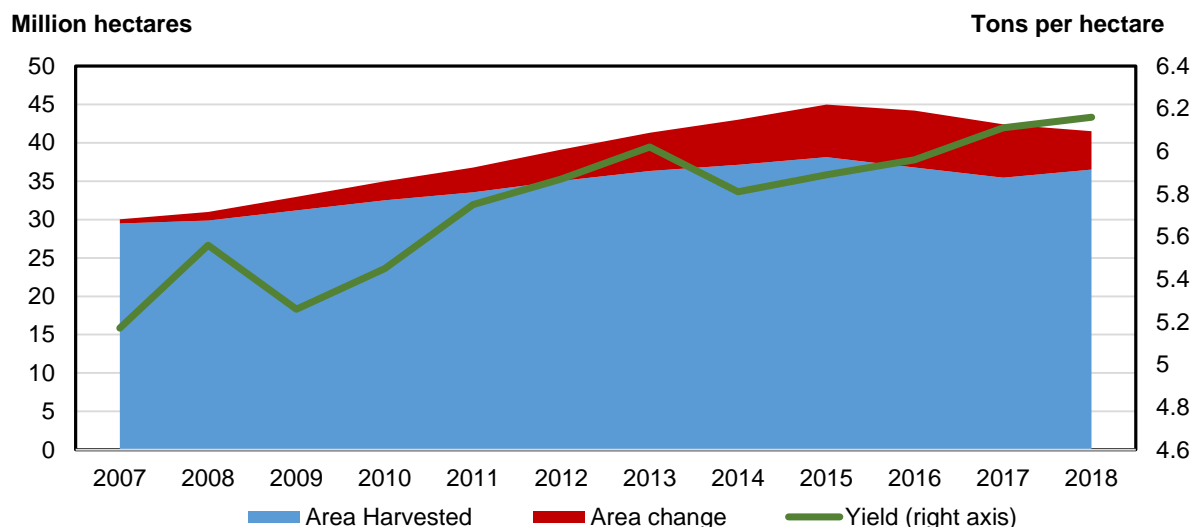


# International Outlook

## A Historical Revision of Chinese Corn Area

Global coarse grain production in 2018/19 is raised by 29.9 million tons this month to 1,373.3 million, while foreign coarse grain output is up by 34.2 million tons to 988.2 million. However, the surge in production, consumption, and stocks this month is concentrated in **China**, as new estimates reflect recent Chinese National Bureau of Statistics (NBS) multi-year cross-commodity revisions of the data on area, production, and yield for corn, rice, wheat, soybeans, and several other commodities. The revision comes from a newly issued National Statistical Yearbook covering 11 years of data from 2007/08 through 2017/18 with raised estimates of corn area, while corn yield is left unchanged for all years except for slight increases in 2006/17 and 2017/18. Based on the revised NBS data for 2007-17, Chinese corn output for the current 2018/19 marketing year is projected 31.0 million tons higher. However, new 2018/19 projections for corn area and production in China are lower than the revised estimates for the previous (2017/18) year. This relative year-over-year reduction follows an assumption of a further reduction in corn area that started in 2016/17 (see figure 11), a year after the Chinese Government removed price support.

**Figure 11. China revision: corn area and yield**



Source: USDA, Foreign Agricultural Service, Production, Supply, and Distribution database.

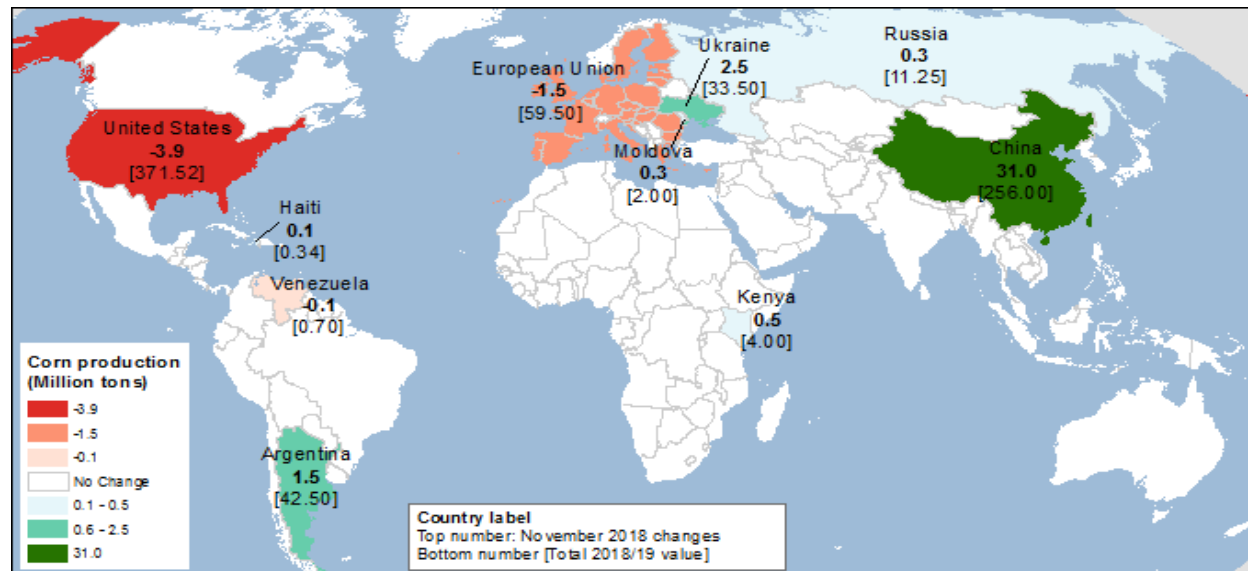
The descriptions of the revisions of China data can be found in the November 2018 *World Agricultural Supply and Demand Estimates* (WASDE) report and in the *Grain: World Markets and Trade* report, while revised data and balances are available at USDA's Foreign Agricultural

Service, Production, Supply and Distribution online database and WASDE historical revisions page.

In contrast to the revisions for China, the changes in other foreign coarse grain and corn production are much smaller, although still meaningful for global corn markets. Corn output is boosted for **Ukraine**, with yields topping the previous record of 2016/17 by 13 percent. Ukrainian corn has been enjoying ideal growing conditions this year, with no heat stress and favorable rains at the tassel and silk corn development stages. The country is also expanding investments into its corn production technology, with increased use of imported hybrid seeds from France, Germany, and Switzerland, up about 30 percent this year. **Russian** corn yields are also projected a little higher, as record yields in the Central District of the country offset earlier low yields in southern Russia. Corn production prospects are raised for **Argentina** with higher forecasted harvested area. Partly offsetting is a reduction of corn production in the **European Union** (EU), with unchanged yields and a reduction in harvested area, as additional corn fields are reportedly being cut for silage. See table A2 for the whole list and explanations of this month's coarse grain production revisions.

For a visual display of this month's changes in corn production, see map A.

**Map A – Corn production changes for 2018/19, November 2018**



Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

For at a glance information and specific causes of the revisions and details of this month's changes in coarse grain production, see tables A1 and A2 below. The changes in global, foreign, foreign minus China, and U.S coarse grain production by type of grain are presented in

table A1, while coarse grain production changes by country and type of grain are presented in table A2 below.

<b>Table A1 - World and U.S. coarse grain production at a glance (2018/19), November 2018</b>					
	Region or country	Production	Change from previous month <sup>1</sup>	YoY change <sup>2</sup>	Comments
			<i>Million tons</i>		c
<b>Coarse grain production (total)</b>					
↑	World	1,373.3	+29.9	+16.2	
↑	Foreign	988.2	+34.2	+15.3	Changes are dominated by Chinese revisions of corn area. See table A2.
↑	Foreign w/out China	724.4	+3.2	+18.1	Projections boosted for Ukraine, Argentina, and several other countries. Lower EU <sup>3</sup> and Australian output is partly offsetting. See table A2.
↓	United States	385.1	-4.3	+0.9	See section on U.S. domestic output.
<b>World production of coarse grains by type of grain</b>					
<b>CORN</b>					
↑	World	1,099.0	+30.6	+22.7	
↑	Foreign	727.4	+34.5	+22.2	Changes are dominated by Chinese revisions of corn area. See table A2.
↑	Foreign w/out China	471.4	+3.5	+25.2	Projections boosted for Ukraine, Argentina, and several other countries. Lower EU <sup>3</sup> output is partly offsetting. See table A2.
↓	United States	371.5	-3.9	+0.6	See section on U.S. domestic output.
<b>BARLEY</b>					
↑	World	141.3	+0.1	-2.7	
↑	Foreign	138.0	+0.1	-3.0	Higher Algerian and EU <sup>3</sup> barley output is almost offset by lower Australian, Canadian, and Moroccan projections.
	United States	3.3	No change	+0.2	See section on U.S. domestic output.
<b>SORGHUM</b>					
↓	World	58.7	-0.4	+1.2	
	Foreign	49.5	No change	+1.2	Higher projection for Australia is offset by a reduction in Mexico. See table A2.
↓	United States	9.2	-0.5	No change	See section on U.S. domestic output.
<sup>1</sup> Change from previous month. <sup>2</sup> YoY: year over year changes. <sup>3</sup> European Union. Fractional changes are also made for oats, rye, and mixed grains.					
<b>For changes and notes by country, see table A2.</b>					
Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.					

**Table A2 - Coarse grain foreign production by country at a glance, November 2018**

	Type of crop	Crop year	Production	Change in forecast <sup>1</sup>	YoY <sup>2</sup> change	Comments
<i>Million tons</i>						
<b>Coarse grain production by country and by type of grain (2017/18)</b>						
<b>CHINA</b>						
↑	Corn	Oct-Sep	256.0	+31.0	-2.8	Chinese corn area for 2007-17 was revised this month based on the published multi-year cross-commodity revisions by the National Bureau of Statistics (NBS). The change in the 2018/19 projection takes into account higher estimated corn area in the past 10 years.
<b>UKRAINE</b>						
↑	Corn	Oct-Sep	33.5	+2.5	+9.4	With about 80 percent of area harvested, corn yields have already reached record high and continue to increase.
<b>ARGENTINA</b>						
↑	Corn	Mar-Feb	42.5	+1.5	+10.5	Timely rains in the key corn-growing areas of Buenos Aires, Entre-Rio, and Santa Fe allowed farmers to accelerate corn planting. Corn area is projected up 0.2 million hectares to 5.2 million.
<b>KENYA</b>						
↑	Corn	Jul-Jun	4.0	+0.5	+1.0	Excellent weather and favorable corn-growing conditions elevated production to a record high.
<b>RUSSIA</b>						
↑	Corn	Oct-Sep	11.3	+0.3	-2.0	With 80 percent of area harvested, corn yields are slightly higher than previously forecast.
<b>MOLDOVA</b>						
↑	Corn	Jul-Jun	2.0	+0.3	+0.2	Moldova neighbors Ukraine in the west and is sharing exceptionally good growing conditions, with record-high yields.
<b>EUROPEAN UNION (EU)</b>						
↓	Corn	Oct-Sep	59.5	-1.5	-2.6	The reduction comes mainly from lower projected corn area in Germany, Hungary, and Poland. The aggregate EU yield is unchanged. According to the country reports, additional corn fields were used for silage that was fed on-farm. Small changes are also made for <b>barley</b> (up 0.1 million tons), <b>oats</b> (down 0.3 million tons), <b>rye</b> (up 0.1 million tons), and <b>mixed grains</b> (down 0.2 million tons).
<b>AUSTRALIA</b>						
↑	Sorghum	Mar-Feb	2.2	+0.3	+0.8	Sorghum as well as irrigated cotton are both planted mainly in the border area between New South Wales and Queensland, which suffered drought earlier this year. Water deficits in reservoirs cut area under cotton, freeing area for sorghum, which is resistant to dryness. Sorghum prices are running high and are expected to encourage additional planting.
↓	Barley	Nov-Oct	7.4	-0.4	-1.5	Projected harvested area is reduced as more drought-damaged fields are being cut to hay in the eastern part of the country. The average national yield is further reduced as crop conditions worsened.
<b>ALGERIA</b>						
↑	Barley	Jul-Jun	2.0	+0.6	+1.0	Ministry of Agriculture report indicates that barley area and yields are projected higher than expected with record-high production.
<b>MOROCCO</b>						
↓	Barley	Jul-Jun	3.0	+0.4	+0.9	A shift in area from wheat to barley was confirmed by the final Government report.
<sup>1</sup> Change from previous month. Smaller changes are made for several countries, see map A for changes in <b>corn</b> production.						
<sup>2</sup> YoY: year over year changes.						
Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.						

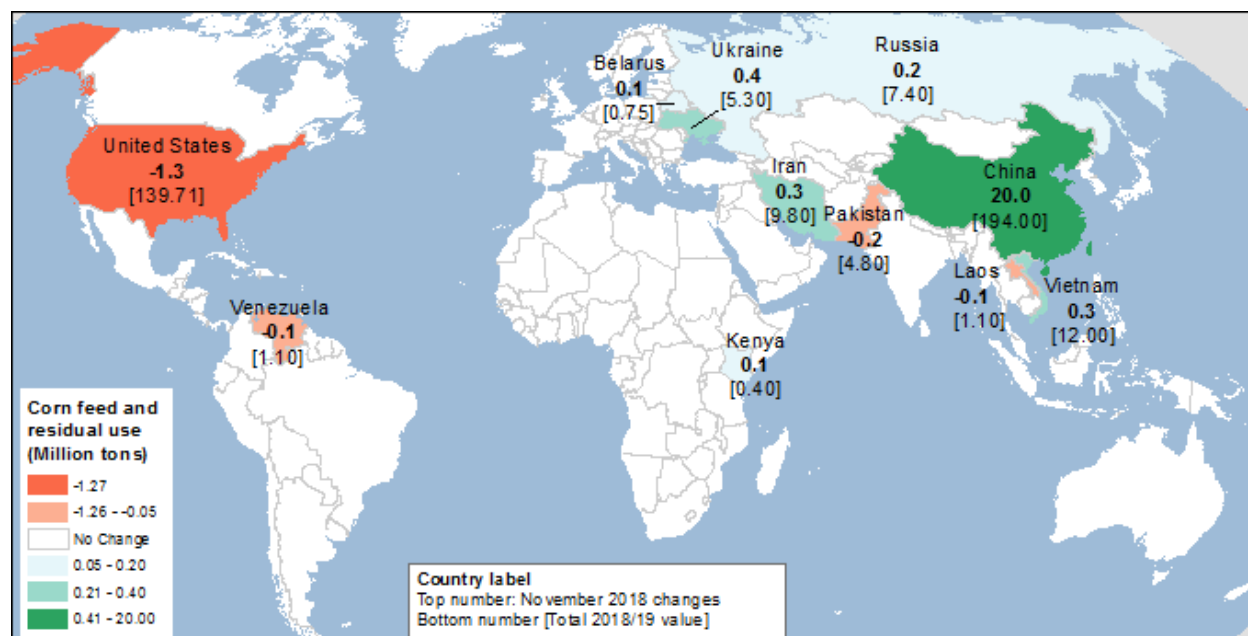
## Coarse Grain Use Driven by Changes for China

Global coarse grain consumption in 2018/19 is projected 24.2 million tons higher this month to 1,408.9 million, the increase driven by the multi-year corn production revision for China described above. However, coarse grain disappearance projections are revised this month for a number of countries, though with mostly offsetting changes. The largest revision this month (apart from the changes for China) is a reduction of sorghum consumption in **Mexico**, down 1.0 million tons, indicating reduced expectations for Mexican sorghum imports from the United States. Another change is for **Vietnam**, where relatively price-competitive corn feeding is expected to grow, partly to offset reduced wheat feeding, but also to support the expanding Vietnamese pork livestock sector. With higher projected corn output, corn feeding is expected to increase in **Ukraine**, almost offsetting a reduction in wheat feed use. Corn feeding is also projected slightly higher for **Russia**.

In the United States, a decrease in corn use is partly offset by higher sorghum and rye consumption. Feed use is also adjusted for a number of countries across coarse grain commodities.

See a visual display of this month's country changes in corn feed and residual use in map B.

**Map B – Corn feed and residual use changes for 2018/19, October 2018**

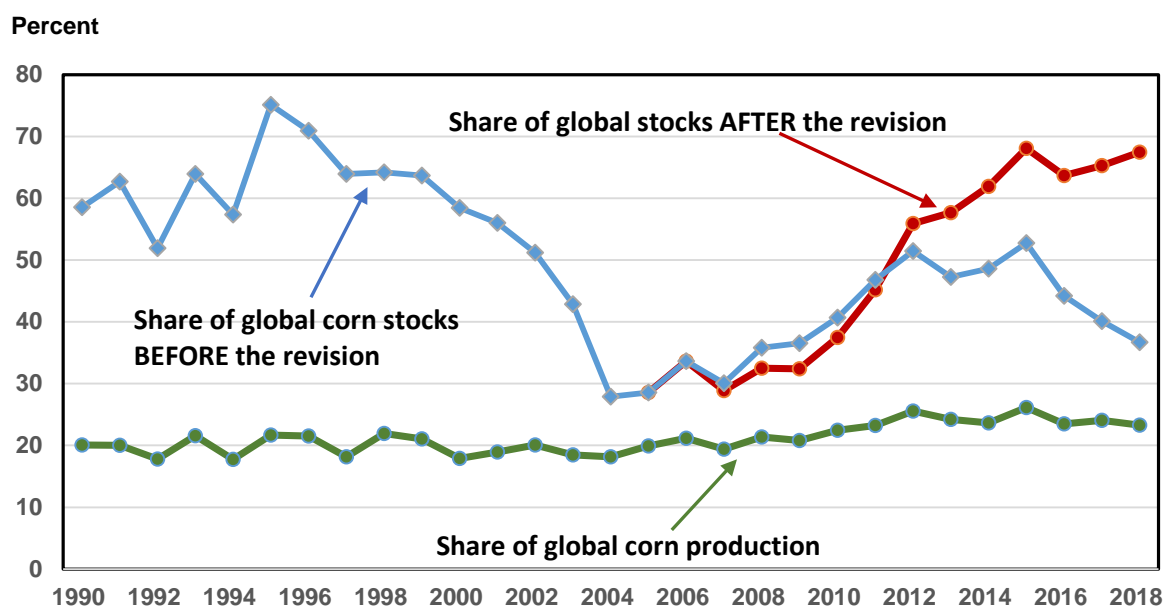


Source: USDA, Foreign Agricultural Service, Production, Supply, and Distribution database.

## China's Share of Global Corn Stocks Up Sharply

World 2018/19 coarse grain ending stocks are forecast 148.3 million tons higher than the October projection but 35.6 million lower than the revised projection for 2017/18. Based on the Chinese official production estimates, corn stocks for China since 2007/08 are revised this month. With large production increases for 11 years in a row, corn stocks in China have been accumulating and are forecast at 207.5 million tons, or 149.0 million tons higher than in the previous October projection. The new projection implies that China's share of global corn stocks is approaching 70 percent, close to its record-high share in 1995 and just above its share of 20 percent in global corn production. See figure 12.

**Figure 12. China: share of global corn production and stocks**



Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

However, China's stocks, while large in absolute terms, are projected at 75 percent of total use, well below levels seen during the 1990s when stocks hovered near 100 percent of use. The 2018/19 stocks-to-use projection of 75 percent represents a decline of 10 percentage points from the newly revised prior year level.

USDA's estimates of China's corn stocks are based on official production estimates by China's NBS, trade data as reported by China Customs, and other related utilization data. Stocks represent one of several utilization categories on the demand side of the balance sheet but are ultimately largely constrained by supply assumptions, which in this case are essentially driven by the official production estimates from NBS. Given NBS does not publish official estimates of

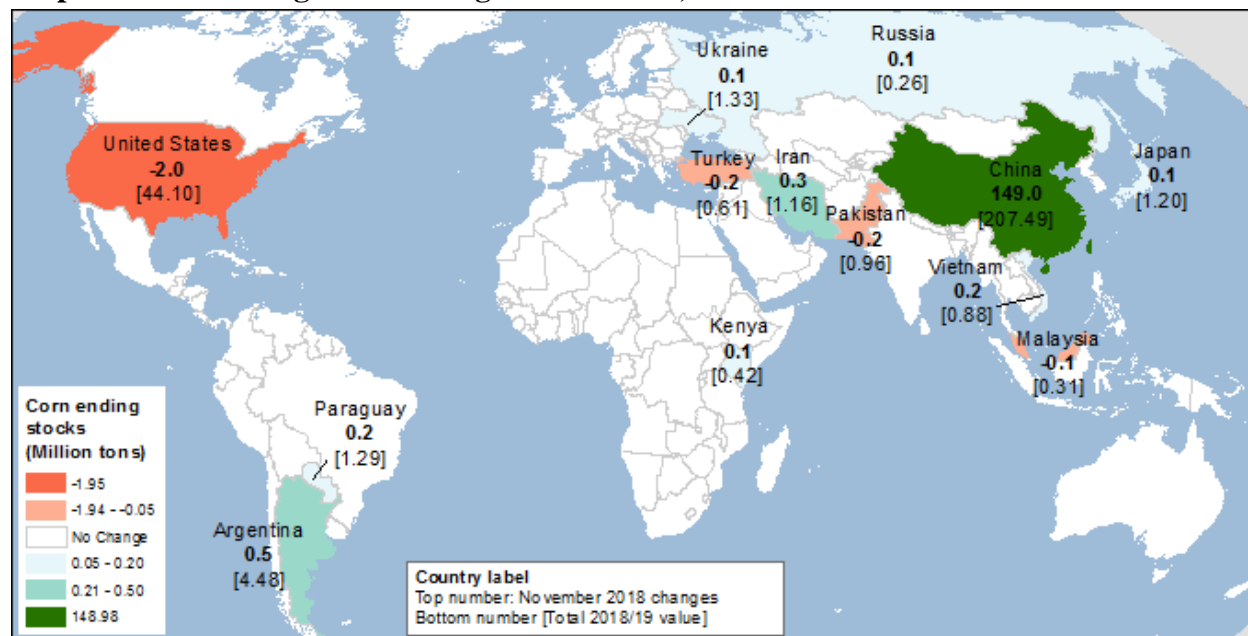
stocks or utilization, it is not clear if the latest production estimates represent an attempt to reconcile with reported auction totals from China's National Grain Trade Center. Adding to the confusion is the decision by China's Ministry of Agriculture to not adopt the latest NBS estimates in its monthly China Agricultural Supply and Demand Estimates report, in contrast to the China National Grains and Oils Information Center, which did.

The recent historical revisions by NBS are without precedent in modern agricultural statistics. Previously, NBS estimated China's corn harvested area from 2006/07 to its apex in 2015/16, an expansion of 9.7 million hectares, basically the equivalent of adding an entire principal crop area the size of the State of North Dakota (based on the USDA/National Agricultural Statistics Service (NASS) June 2018 acreage survey). NBS's revised area numbers now estimate that over that time period, China added 16.5 million hectares of harvested area, or a difference of 6.8 million hectares, roughly equivalent to the size of total principal crop area in the State of South Dakota (again based on the USDA/NASS June 2018 acreage survey).

Importantly, USDA's historical estimates of China's coarse grain imports do not change with these revisions. Thus, they still reflect the reality that China was the world's largest importer of coarse grains during the 2014/15 and 2015/16 marketing years. Current world prices for corn and some coarse grains that are below China's internal market prices, particularly in the feed deficit South, support USDA's forecast that China is expected to import nearly 17 million tons of coarse grains during 2018/19.

All other changes for foreign corn stocks are smaller, equal to or less than 0.5 million tons. See a visual display of this month's country changes in corn ending stocks in map C.

## Map C – Corn ending stocks changes for 2018/19, October 2018



Source: USDA, Foreign Agricultural Service, Production, Supply, and Distribution database

## World Corn Trade Up, U.S. Exports Slightly Down

Projected 2018/19 world coarse grain trade for the international trade year (October-September) is up 1.5 million tons to 197.0 million this month, with higher corn and barley trade that is partly offset by a reduction in sorghum.

Corn supplies are higher in Ukraine, and the low cost of production and long-time currency depreciation make the country a formidable competitor in the global corn market. Ukrainian corn exports are projected 2.0 million tons higher to reach 27.0 million. Ukraine incessantly broadens its export outreach and in the last 6 years has doubled corn exports, while over the last 10 years, the increase has been fivefold. China has become the top destination for Ukrainian corn, with Egypt, Europe, and the countries of South and Southeast Asia also major foreign markets. In most of these countries, consumer incomes and therefore demand for livestock products are growing, and the appetite for feed grains is expected to expand further. With higher projected corn output, Argentina is expected to export additional corn, up 0.5 million tons to 27.5 million. A 0.3-million-ton increase in corn exports is projected for Moldova, whose corn output is expected to be higher.

U.S. corn exports are projected 0.5 million tons lower this month to reach 62.0 million. Lower corn output and the latest lackluster sales support this small reduction, while U.S corn exports still remain at a close-to-record level.

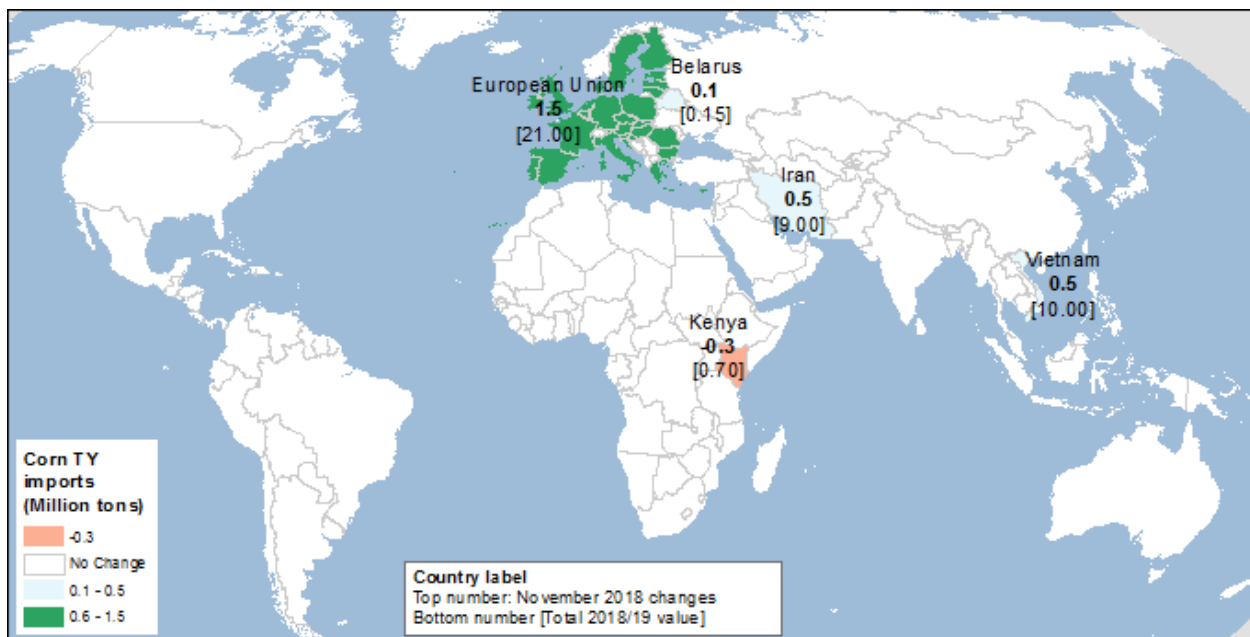


Sorghum exports are down 1.0 million tons this month, as Mexico is projected to import less sorghum from the United States than last month. Mexico is still expected to import 0.5 million tons of sorghum, more in line with its sorghum imports in the last 5 years. Consequently, U.S sorghum exports are reduced by 1.0 million tons to 5.5 million.

Barley trade is up 0.2 million tons this month. Barley import prospects for Saudi Arabia are boosted 0.4 million tons, supporting an increase in barley feed use, while with larger barley output, imports for Algeria are reduced by 0.2 million tons. Barley exports are adjusted up for Russia and Ukraine and slightly down for Australia.

For information on this month's main changes in 2017/18 corn imports, see map D.

**Map D – Corn trade year imports changes for 2018/19, October 2018**



Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

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Table 1--Feed grains: U.S. quarterly supply and disappearance (million bushels), 11/13/2018

Commodity, market year, and quarter 1/			Beginning stocks	Production	Imports	Total supply	Food, seed, and industrial use	Feed and residual use	Exports	Total disappear- ance	Ending stocks	Farm price 2/ (dollars per bushel)	
Corn	2015/16	Sep-Nov	1,731	13,602	13	15,346	1,631	2,178	301	4,111	11,235	3.65	
		Dec-Feb	11,235		18	11,253	1,652	1,438	341	3,431	7,822	3.64	
		Mar-May	7,822		21	7,843	1,655	914	563	3,132	4,711	3.60	
		Jun-Aug	4,711		16	4,727	1,709	587	694	2,990	1,737	3.55	
		Mkt yr	1,731	13,602	68	15,401	6,647	5,118	1,899	13,664	1,737	3.61	
	2016/17	Sep-Nov	1,737	15,148	14	16,899	1,689	2,277	548	4,514	12,386	3.26	
		Dec-Feb	12,386		12	12,398	1,711	1,525	539	3,776	8,622	3.39	
		Mar-May	8,622		17	8,639	1,741	982	687	3,410	5,229	3.46	
		Jun-Aug	5,229		14	5,243	1,743	686	520	2,949	2,293	3.40	
		Mkt yr	1,737	15,148	57	16,942	6,885	5,470	2,294	14,649	2,293	3.36	
	2017/18	Sep-Nov	2,293	14,604	11	16,908	1,744	2,248	349	4,342	12,567	3.21	
		Dec-Feb	12,567		9	12,575	1,738	1,503	441	3,683	8,892	3.30	
		Mar-May	8,892		8	8,900	1,781	943	871	3,595	5,305	3.58	
		Jun-Aug	5,305		9	5,314	1,793	603	777	3,174	2,140	3.46	
		Mkt yr	2,293	14,604	36	16,934	7,058	5,298	2,438	14,793	2,140	3.36	
	2018/19	Mkt yr	2,140	14,626	50	16,816	7,130	5,500	2,450	15,080	1,736	3.20-4.00	
	Sorghum	2015/16	Sep-Nov	18.41	596.75	3.60	618.76	22.14	159.65	114.44	296.23	322.54	3.54
			Dec-Feb	322.54		0.98	323.51	41.77	-6.14	86.30	121.93	201.58	3.17
			Mar-May	201.58		0.01	201.59	43.31	-5.53	73.46	111.24	90.35	3.10
			Jun-Aug	90.35		0.01	90.36	29.73	-43.65	67.65	53.73	36.63	3.33
Mkt yr			18.41	596.75	4.59	619.75	136.95	104.32	341.85	583.12	36.63	3.31	
2016/17		Sep-Nov	36.63	480.26	0.00	516.90	21.65	145.29	41.81	208.75	308.15	2.62	
		Dec-Feb	308.15		0.00	308.15	33.06	5.04	89.32	127.41	180.75	2.69	
		Mar-May	180.75		0.00	180.75	34.62	2.41	59.02	96.04	84.71	2.79	
		Jun-Aug	84.71		1.73	86.44	25.30	-19.99	47.67	52.98	33.46	3.53	
		Mkt yr	36.63	480.26	1.74	518.63	114.61	132.75	237.82	485.18	33.46	2.79	
2017/18		Sep-Nov	33.46	363.83	1.91	399.20	13.92	112.09	45.71	171.71	227.49	3.05	
		Dec-Feb	227.49		0.05	227.55	9.24	6.72	71.33	87.29	140.26	3.18	
		Mar-May	140.26		0.01	140.27	15.47	-14.11	73.58	74.93	65.33	3.40	
		Jun-Aug	65.33		0.04	65.38	20.45	-4.46	14.53	30.52	34.85	3.78	
		Mkt yr	33.46	363.83	2.02	399.31	59.07	100.24	205.15	364.46	34.85	3.22	
2018/19		Mkt yr	34.85	363.67		398.52	125.00	135.00	100.00	360.00	38.52	3.00-3.80	

Table 1--Feed grains: U.S. quarterly supply and disappearance, cont. (million bushels), 11/13/2018

Commodity, market year, and quarter 1/			Beginning stocks	Production	Imports	Total supply	Food, seed, and industrial use	Feed and residual use	Exports	Total disappear- ance	Ending stocks	Farm price 2/ (dollars per bushel)	
Barley	2015/16	Jun-Aug	79	218	4	301	41	38	3	82	219	5.39	
		Sep-Nov	219		4	223	37	1	4	43	180	5.52	
		Dec-Feb	180		7	187	36	11	3	50	138	5.66	
		Mar-May	138		4	141	44	-5	1	39	102	5.43	
		Mkt yr	79	218	19	315	158	44	11	213	102	5.52	
	2016/17	Jun-Aug	102	200	2	304	41	32	1	74	230	4.99	
		Sep-Nov	230		2	232	39	-0	1	40	193	4.78	
		Dec-Feb	193		2	195	37	12	1	50	145	5.04	
		Mar-May	145		3	148	45	-6	2	41	106	4.96	
		Mkt yr	102	200	10	312	162	39	4	205	106	4.96	
	2017/18	Jun-Aug	106	142	2	251	41	29	2	71	180		
		Sep-Nov	180		2	182	38	-17	2	23	159		
		Dec-Feb	159		2	161	35	-6	1	31	130		
		Mar-May	130		3	133	43	-5	1	38	94		
		Mkt yr	106	142	9	257	157	1	5	163	94	4.47	
	2018/19	Jun-Aug	94	153	1	249	40	33	1	74	175		
		Mkt yr	94	153	15	263	155	15	5	175	88	4.15-5.15	
	Oats	2015/16	Jun-Aug	54	90	18	161	18	49	0	68	94	2.15
			Sep-Nov	94		26	120	18	19	1	37	83	2.08
			Dec-Feb	83		25	108	17	15	0	33	75	2.09
Mar-May			75		16	91	23	10	1	34	57	2.11	
Mkt yr			54	90	86	229	77	94	2	172	57	2.12	
2016/17		Jun-Aug	57	65	21	142	19	44	1	64	79	1.87	
		Sep-Nov	79		28	106	18	12	1	31	75	2.03	
		Dec-Feb	75		24	100	17	18	1	36	63	2.35	
		Mar-May	63		18	81	22	8	1	31	50	2.42	
		Mkt yr	57	65	90	212	76	82	3	161	50	2.06	
2017/18		Jun-Aug	50	49	19	119	19	27	1	47	72	2.35	
		Sep-Nov	72		30	102	18	17	1	36	66	2.58	
		Dec-Feb	66		20	86	18	13	1	31	55	3.03	
		Mar-May	55		20	75	23	11	1	34	41	2.94	
		Mkt yr	50	49	89	189	78	68	2	148	41	2.59	
2018/19		Jun-Aug	41	56	19	116	19	22	0	41	75	2.55	
		Mkt yr	41	56	95	192	79	75	2	156	36	2.40-3.00	

Latest market year is projected; previous market year is estimated. Totals may not add due to rounding.

1/ Corn and sorghum, September 1-August 31 marketing year; Barley and oats, June 1-May 31 marketing year.

2/ Average price received by farmers based on monthly price weighted by monthly marketings. For the latest market year, quarterly prices are calculated by using the current monthly prices weighted by the monthly marketings for those months for the previous 5 years divided by the sum of marketings for those months.

Source: USDA, World Agricultural Outlook Board, World Agricultural Supply and Demand Estimates and supporting materials.

Data run: 11/9/2018

Table 2--Feed and residual use of wheat and coarse grains, 11/13/2018

Market year and quarter 1/		Corn (million metric tons)	Sorghum (million metric tons)	Barley (million metric tons)	Oats (million metric tons)	Feed grains (million metric tons)	Wheat (million metric tons)	Energy feeds (million metric tons)	Grain consuming animal units (millions)	Energy feeds per grain consuming animal unit (tons)
2016/17	Q1 Sep-Nov	57.8	3.7	-0.0	0.2	61.8	-0.8	60.9		
	Q2 Dec-Feb	38.7	0.1	0.3	0.3	39.5	-0.4	39.1		
	Q3 Mar-May	24.9	0.1	-0.1	0.2	25.0	-1.7	23.3		
	Q4 Jun-Aug	17.4	-0.5	0.6	0.4	18.0	4.5	22.5		
	MY Sep-Aug	138.9	3.4	0.8	1.2	144.3	1.6	145.9	95.7	1.5
2017/18	Q1 Sep-Nov	57.1	2.8	-0.4	0.3	59.9	-1.5	58.4		
	Q2 Dec-Feb	38.2	0.2	-0.1	0.2	38.5	-0.4	38.1		
	Q3 Mar-May	23.9	-0.4	-0.1	0.2	23.7	-1.2	22.5		
	Q4 Jun-Aug	15.3	-0.1	0.7	0.4	16.3	5.4	21.7		
	MY Sep-Aug	134.6	2.5	0.1	1.2	138.4	2.3	140.7	98.9	1.4
2018/19	MY Sep-Aug	139.7	3.4	0.5	1.3	145.0	3.6	148.6	101.1	1.5

1/ Corn and sorghum, September 1-August 31 marketing year; Barley and oats, June 1-May 31 marketing year.

Source: USDA, World Agricultural Outlook Board, World Agricultural Supply and Demand Estimates and supporting materials.

Table 3--Cash feed grain prices, 11/13/2018

Mkt year and month 1/	Corn, No. 2 yellow, Central IL (dollars per bushel)			Corn, No. 2 yellow, Gulf ports, LA (dollars per bushel)			Sorghum, No. 2 yellow, Gulf ports, LA (dollars per cwt)
	2016/17	2017/18	2018/19	2016/17	2017/18	2018/19	2016/17
Sep	3.09	3.15	3.12	3.78	3.74	3.93	
Oct	3.27	3.15	3.28	3.88	3.77	4.07	
Nov	3.28	3.14		3.83	3.78		
Dec	3.34	3.21		3.88	3.79		
Jan	3.45	3.29		4.07	3.96		
Feb	3.51	3.45		4.14	4.15		
Mar	3.40	3.52		4.04	4.36		
Apr	3.41	3.54		3.98	4.46		
May	3.47	3.73		4.03	4.55		
Jun	3.49	3.38		4.01	4.19		7.56
Jul	3.51	3.22		4.00	3.98		
Aug	3.27	3.24		3.77	4.13		
Mkt year	3.37	3.34		3.95	4.07		7.56

	Barley, No. 2 feed, Minneapolis, MN (dollars per bushel)			Barley, No. 3 malting, Minneapolis, MN (dollars per bushel)		Oats, No. 2 white heavy, Minneapolis, MN (dollars per bushel)		
	2016/17	2017/18	2018/19	2016/17	2017/18	2016/17	2017/18	2018/19
Jun	2.36	2.05	2.85		4.70	2.58	2.95	2.88
Jul	2.33	2.05	2.85		4.67	2.61	3.17	2.84
Aug	2.08	2.10	2.78		4.70	2.34	2.98	2.91
Sep	1.95	2.10	2.60		4.70	2.29	2.87	2.91
Oct	2.00	2.10	2.60		4.70	2.67	2.97	3.18
Nov	2.00	2.36				2.84	2.94	
Dec	2.00	2.61			4.85	2.92	2.73	
Jan	2.00	2.65			4.85	2.97	2.90	
Feb	2.00	2.81			4.85	3.07	2.96	
Mar	2.02	2.85		4.70	4.50	2.90	2.79	
Apr	2.05	2.85				2.86	2.72	
May	2.05	2.85				2.88	2.89	
Mkt year	2.07	2.45		4.70	4.72	2.74	2.90	

1/ Corn and sorghum, September 1-August 31 marketing year; Barley and oats, June 1-May 31 marketing year. Simple average of monthly prices for the marketing year.

Source: USDA, Agricultural Marketing Service, <http://marketnews.usda.gov/portal/lg>.

Data run: 11/9/2018

Table 4--Selected feed and feed byproduct prices (dollars per ton), 11/13/2018

Mkt year and month 1/	Soybean meal, high protein, Central Illinois, IL			Cottonseed meal, 41% solvent, Memphis, TN			Corn gluten feed, 21% protein, Midwest		Corn gluten meal, 60% protein, Midwest	
	2016/17	2017/18	2018/19	2016/17	2017/18	2018/19	2016/17	2017/18	2016/17	2017/18
Oct	323.26	319.24	319.15	241.88	229.00	249.00	77.00	80.70	466.13	469.30
Nov	322.42	313.52		221.00	228.75		83.50	93.00	477.50	487.24
Dec	321.03	327.17		217.50	232.50		92.83	96.25	501.67	482.88
Jan	332.34	322.60		223.50	259.00		97.50	98.80	502.50	477.60
Feb	334.32	362.85		221.88	303.13		88.13	106.25	516.50	483.13
Mar	320.34	379.85		210.63	323.13		87.13	105.50	505.63	524.75
Apr	305.67	385.85		195.00	263.13		75.00		501.13	
May	293.68	393.55		179.50	262.50		71.00		485.30	
Jun	258.75	355.71		179.38	257.50		68.38		475.75	
Jul	326.04	341.08		200.84	253.13		71.35		467.88	
Aug	301.05	332.50		198.50	260.00		73.10		475.50	
Sep	307.70	318.33		213.75	258.75		75.00		469.25	
Mkt yr	312.22	346.02		208.61	260.88		79.99	96.75	487.06	487.48

	Meat and bone meal, Central US			Distillers dried grains, Central Illinois, IL			Wheat middlings, Kansas City, MO			Alfalfa hay, weighted-average farm price 2/	
	2016/17	2017/18	2018/19	2016/17	2017/18	2018/19	2016/17	2017/18	2018/19	2016/17	2017/18
Oct	237.50	228.00	267.50	116.25	117.30	137.50	79.43	70.36	80.00	135.00	153.00
Nov	229.00	219.38		111.70	123.13		85.53	86.85		130.00	150.00
Dec	211.67	221.67		104.84	143.75		101.62	107.88		127.00	149.00
Jan	255.60	220.00		96.30	155.50		98.25	123.68		126.00	153.00
Feb	285.00	225.84		98.88	158.88		84.66	114.61		127.00	155.00
Mar	284.38	275.00		98.25	164.13		80.76	99.69		134.00	165.00
Apr	266.25	316.25		99.25	174.38		58.03	100.22		150.00	183.00
May	245.50	293.00		100.50	174.90		48.41	98.90		156.00	189.00
Jun	248.13	288.75		105.25	158.50		60.39	89.50		154.00	181.00
Jul	276.25	283.75		110.63	139.30		67.10	64.50		153.00	179.00
Aug	318.50	265.63		110.00	144.00		63.15	83.50		147.00	177.00
Sep	301.88	266.25		111.63	142.50		67.48	84.00		149.00	180.00
Mkt yr	263.31	258.63		105.29	149.69		74.57	93.64		136.00	154.00

1/ October 1-September 30 except for hay. Simple average of monthly prices for the marketing year except for hay.

2/ May 1-April 30 marketing year. U.S. season-average price based on monthly price received by farmers weighted by monthly marketings.

Source: USDA, Agricultural Marketing Service, <http://marketnews.usda.gov/portal/lg>, and USDA, National Agricultural Statistics Service, [http://www.nass.usda.gov/Data\\_and\\_Statistics/Quick\\_Stats/index.asp](http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/index.asp).

Table 5--Corn: Food, seed, and industrial use (million bushels), 11/13/2018

Mkt year and qtr 1/		High-fructose corn syrup (HFCS)	Glucose and dextrose	Starch	Alcohol for fuel	Alcohol for beverages and manufacturing	Cereals and other products	Seed	Total food, seed, and industrial use
2016/17	Q1 Sep-Nov	113.13	88.81	58.20	1,343.08	35.78	49.92	0.00	1,688.92
	Q2 Dec-Feb	106.71	88.53	56.36	1,371.21	36.35	52.33	0.00	1,711.49
	Q3 Mar-May	120.23	96.89	59.70	1,346.10	36.72	54.45	27.25	1,741.34
	Q4 Jun-Aug	126.90	97.13	61.09	1,371.56	37.15	47.60	2.05	1,743.49
	MY Sep-Aug	466.98	371.35	235.35	5,431.95	146.00	204.30	29.30	6,885.23
2017/18	Q1 Sep-Nov	112.55	93.67	59.72	1,391.29	36.46	50.38	0.00	1,744.06
	Q2 Dec-Feb	105.21	87.91	56.87	1,397.46	38.23	52.82	0.00	1,738.50
	Q3 Mar-May	117.97	94.42	58.56	1,388.64	38.50	55.27	28.10	1,781.46
	Q4 Jun-Aug	124.13	95.51	60.88	1,427.43	35.83	48.23	1.50	1,793.50
	MY Sep-Aug	459.86	371.50	236.03	5,604.83	149.00	206.70	29.60	7,057.52
2018/19	MY Sep-Aug	460.00	390.00	240.00	5,650.00	150.00	209.10	30.90	7,130.00

1/ September-August. Latest data may be preliminary or projected.

Source: Calculated by USDA, Economic Research Service.

Date run: 11/9/2018

Table 6--Wholesale corn milling product and byproduct prices, 11/13/2018

Mkt year and month 1/	Corn meal, yellow, Chicago, IL (dollars per cwt)		Corn meal, yellow, New York, NY (dollars per cwt)		Corn starch, Midwest 3/ (dollars per cwt)		Dextrose, Midwest (cents per pound)		High-fructose corn syrup (42%), Midwest (cents per pound)
	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19	2017/18	2018/19	2017/18
	Sep	16.01	14.97	17.68	16.64	14.41	14.35	39.00	39.25
Oct	15.94	15.24	17.61	16.91	13.87	13.69	39.00	39.25	28.25
Nov	15.78		17.45		13.90		39.00		28.25
Dec	15.69		17.35		13.75		39.00		28.25
Jan	15.75		17.42		13.81		39.25		28.25
Feb	16.09		17.76		14.08		39.25		
Mar	16.13		17.80		14.53		39.25		
Apr	16.23		17.90		14.65		39.25		
May	16.41		18.08		14.44		39.25		
Jun	15.64		17.31		14.77		39.25		
Jul	15.28		16.95		14.20		39.25		
Aug	15.35		17.02		13.78		39.25		
Mkt year 2/	15.86		17.53		14.18		39.17		

1/ September-August. Latest month is preliminary.

2/ Simple average of monthly prices for the marketing year.

3/ Bulk-industrial, unmodified.

Source: Milling and Baking News, except for corn starch which is from private industry.

Date run: 11/9/2018

Table 7--U.S. feed grain imports by selected sources (1,000 metric tons) 1/, 11/13/2018

Import and country/region	----- 2016/17 -----		----- 2017/18 -----		2018/19	
	Mkt year	Jun-Sep	Mkt year	Jun-Sep	Jun-Sep	
Oats	Canada	1,507	538	1,483	472	473
	Sweden	27		41	41	27
	Finland	21	10	16	10	18
	All other countries	0	0	0	0	0
	Total 2/	1,556	549	1,540	524	517
Malting barley	Canada	102	18	87	31	14
	All other countries	17	17	1	0	0
	Total 2/	119	35	88	31	14
Other barley 3/	Canada	89	23	109	35	23
	All other countries	2	1	1	0	0
	Total 2/	90	24	110	35	23

1/ Grain only. Market year (June-May) and market year to date.

2/ Totals may not add due to rounding.

3/ Grain for purposes other than malting, such as feed and seed use.

Source: U.S. Department of Commerce, Bureau of the Census, Foreign Trade Statistics.

Date run: 11/9/2018



Table 8--U.S. feed grain exports by selected destinations (1,000 metric tons) 1/, 11/13/2018

Export and country/region		----- 2016/17 -----		----- 2017/18 -----		2018/19
		Mkt year	Sep	Mkt year	Sep	Sep
Corn	Mexico	13,932	1,200	15,724	1,596	1,397
	Japan	13,557	1,595	13,183	576	1,178
	South Korea	5,601	982	5,736	144	459
	Colombia	4,733	378	5,083	375	374
	Peru	2,989	287	3,238	337	282
	China (Taiwan)	2,962	311	2,464	42	368
	Saudi Arabia	2,163	134	1,495	0.231	82
	Guatemala	993	86	867	19	103
	Morocco	871	194	748		27
	European Union-27	843	44	1,904	22	0.118
	Costa Rica	819	51	853	82	63
	Dominican Republic	807	38	639		48
	China (Mainland)	807		306	2	3
	Canada	704	121	1,663	100	197
	Sub-Saharan Africa	605	67	137	0.048	0.141
	El Salvador	593	46	457	23	63
	Chile	543	154	15	0.171	1
	Honduras	506	45	621	49	53
	Panama	504	28	502	53	41
	Venezuela	419	90	435	55	60
	Indonesia	351		147		0.052
	Cuba	337	53	117		
	Nicaragua	329	16	280	22	12
	Malaysia	327	13	68	0.737	4
	Egypt	323	65	1,332		255
All other countries	1,652	242	3,921	59	190	
Total 2/	58,270	6,236	61,935	3,559	5,261	
Sorghum	China (Mainland)	4,740	264	4,210	288	
	Mexico	585	47	93	9	15
	Sub-Saharan Africa	467	14	363	1	
	Japan	224	19	357	28	
	All other countries	25	2	188	1	61
	Total 2/	6,041	346	5,211	327	76
		----- 2016/17 -----		----- 2017/18 -----		2018/19
		Mkt year	Jun-Sep	Mkt year	Jun-Sep	Jun-Sep
Barley	Canada	63	12	69	32	19
	Japan	23	3	31	12	15
	China (Taiwan)	4	2	5	1	2
	Mexico	2	0.257	0.542		0.002
	All other countries	3	1	6	2	2
	Total 2/	95	18	111	48	38

1/ Grain only. Market year (September-August for corn and sorghum, June-May for barley) and market year to date.

2/ Totals may not add due to rounding.

Source: U.S. Department of Commerce, Bureau of the Census, Foreign Trade Statistics.

Date run: 11/9/2018