



Feed Outlook

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Lower Corn for Ethanol Reduces 2019/20 Use

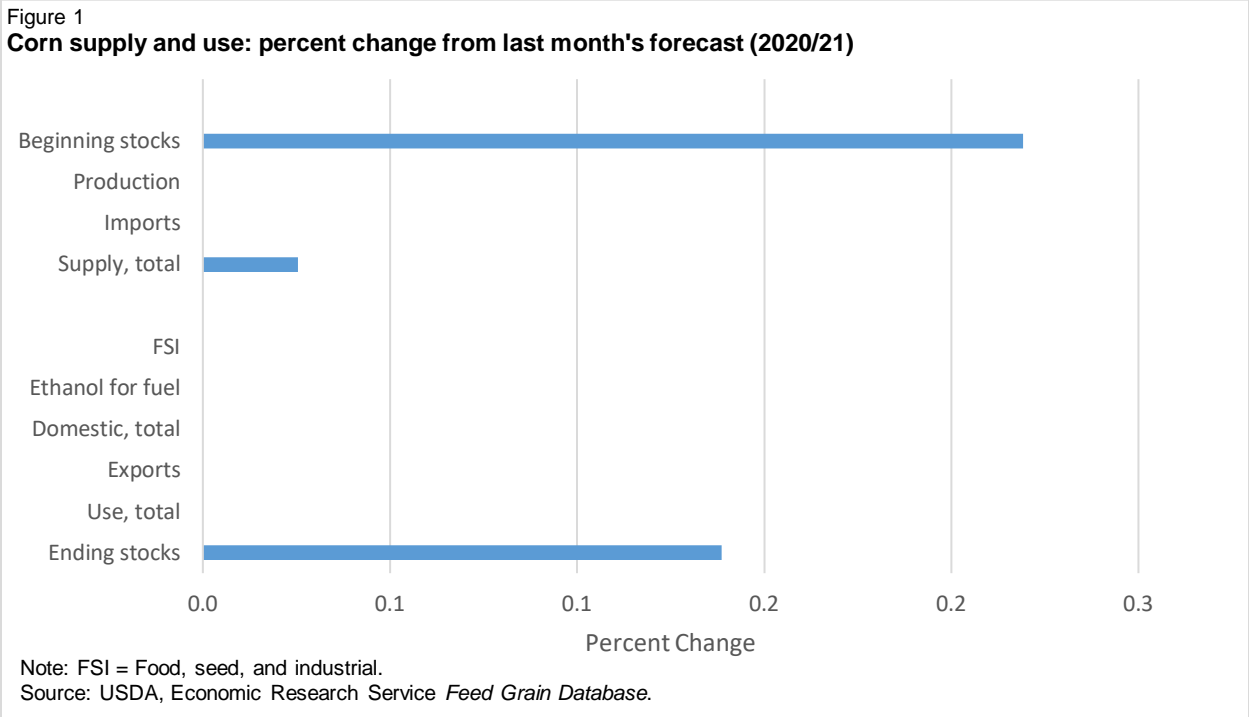
2019/20 corn production is projected down 45.4 million bushels on reductions to harvested area and estimated yield. Diminished supply is largely offset by a 50-million-bushel decrease in corn for ethanol this month, for a market year total of 4,900 million bushels. The 50-million-bushel decrease in corn food, seed, and industrial use leaves 2019/20 projected disappearance at 13,780 million bushels. Carryin for 2020/21 is raised 4.6 million bushels. There were a few other minor changes to the feed grains balance sheets and prices are steady from last month.

Globally, with higher projected use more than offsetting the marginal increase in supplies, 2020/21 coarse grain ending stocks are projected down this month. Corn trade for 2019/20 involves two offsetting changes, with higher Argentine and lower Brazilian exports. China's punitive tariffs affect the barley market, reducing Australian exports and leaving Australia with higher barley supplies in the face of better crop prospects.

Domestic Outlook

Corn Planting Continues at Brisk Pace

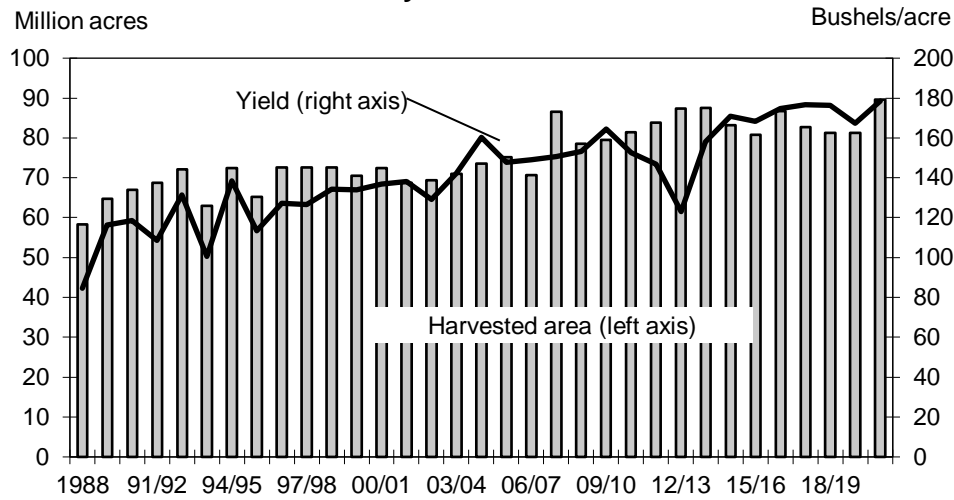
The 2020/21 crop was 97 percent planted, based on surveys released in the National Agricultural Statistics Service (NASS) *Crop Progress* report for the week of June 7. This compares favorably with last year at this time, when plantings reached only 78 percent due to excessive moisture and is higher than the 5-year average of 94 percent. Dry, mild weather conditions in Minnesota enabled plantings to be completed, while North Carolina and Iowa planted 99 percent of their crops. Illinois, South Dakota, and Texas crops were 98 percent planted. North Dakota was the only major corn producing State with less than 90 percent in the ground. Emergence followed the same pattern—with North Carolina, Iowa, Minnesota, and Texas leading.



Planted area for 2020/21 is projected unchanged from last month at 97.0 million acres, which, if realized, would produce a record-high corn crop of 15,995 million bushels at the projected weather-adjusted trend yield of 178.5 bushels per acre. This assumes normal planting progress and summer growing season weather, and the historical relationship between planted and harvested area. The NASS *Acreage* report will be released on June 30, providing the first

survey-based area estimate for the 2020/21 corn crop, based primarily on data collected in the first 2 weeks of June.

Figure 2
U.S. corn harvested area and yield

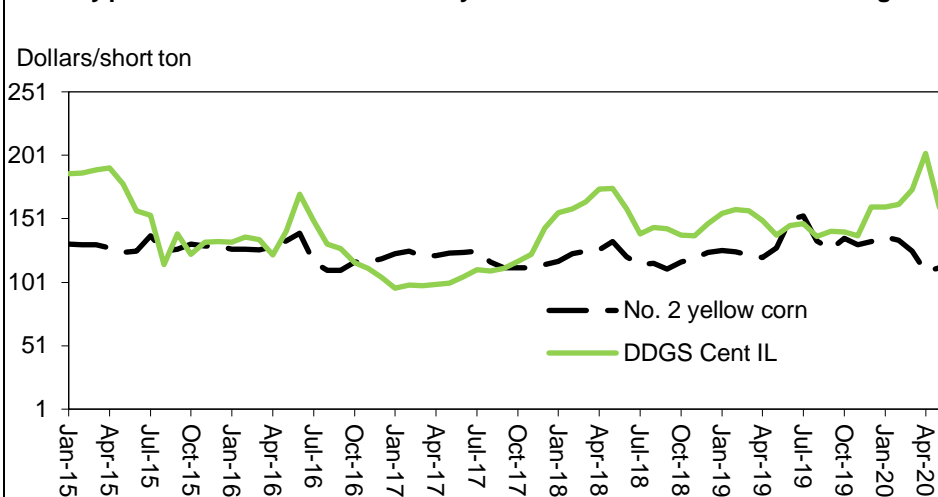


Sources: USDA, Economic Research Service with data from National Agricultural Statistics Service, QuickStats, and USDA, World Agricultural Outlook Board, Crop Projections, 2020.

Supplies at this level of production would be 18,123 million bushels, given a projected carryin of 2,103 million bushels and imports of 25 million.

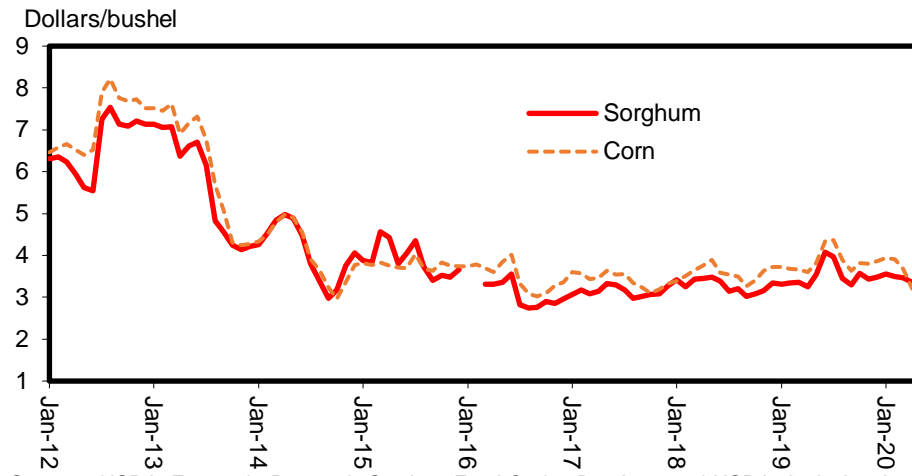
There is no change in projected use for 2020/21. The 4.6-million-bushel reduction in carryin from 2019/20 is passed through to ending stocks of 3,323 million bushels. The season average price received by farmers is unchanged from last month at \$3.20 per bushel.

Figure 3
Monthly prices for Central Illinois no. 2 yellow corn and corn distillers dried grain



Source: USDA, Economic Research Service (ERS) using data from the ERS Feed Grains Database and USDA, Agricultural Marketing Services.

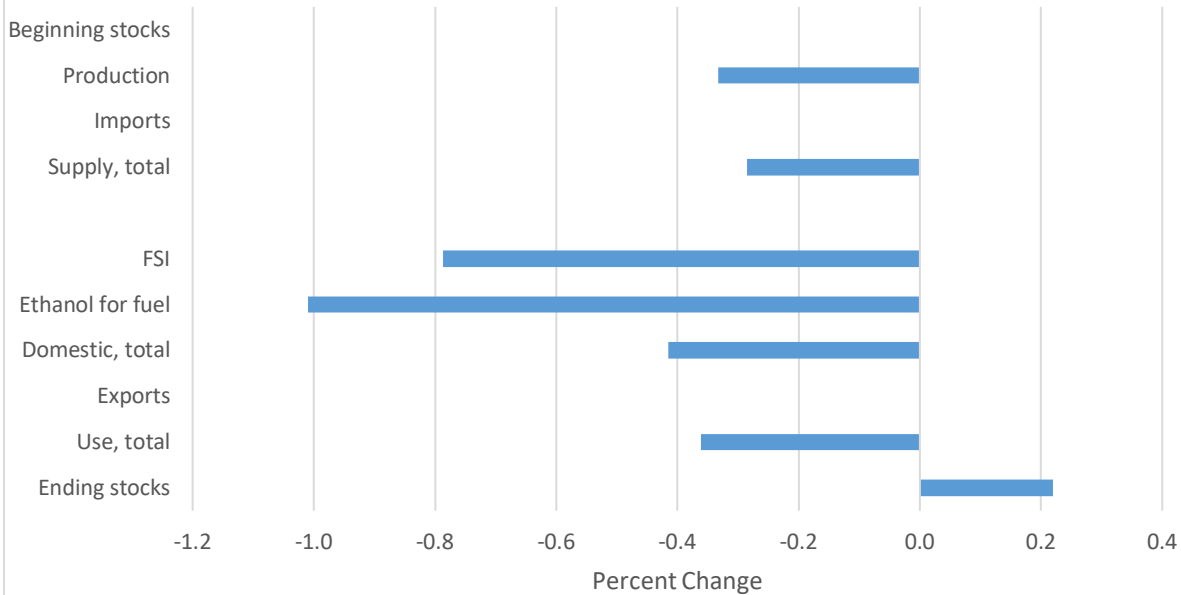
Figure 4
Monthly #2 grain sorghum and yellow corn prices for Kansas City



Sources: USDA, Economic Research Service, *Feed Grains Database* and USDA, Agricultural Marketing Service.

The 2019/20 crop is estimated 45.4 million bushels lower. Yield is lowered 0.4 bushels per acre to 167.4 million bushels. Resulting supply is 15,883 million bushels.

Figure 5
Corn supply and use: percent change from last month's forecast (2019/20)

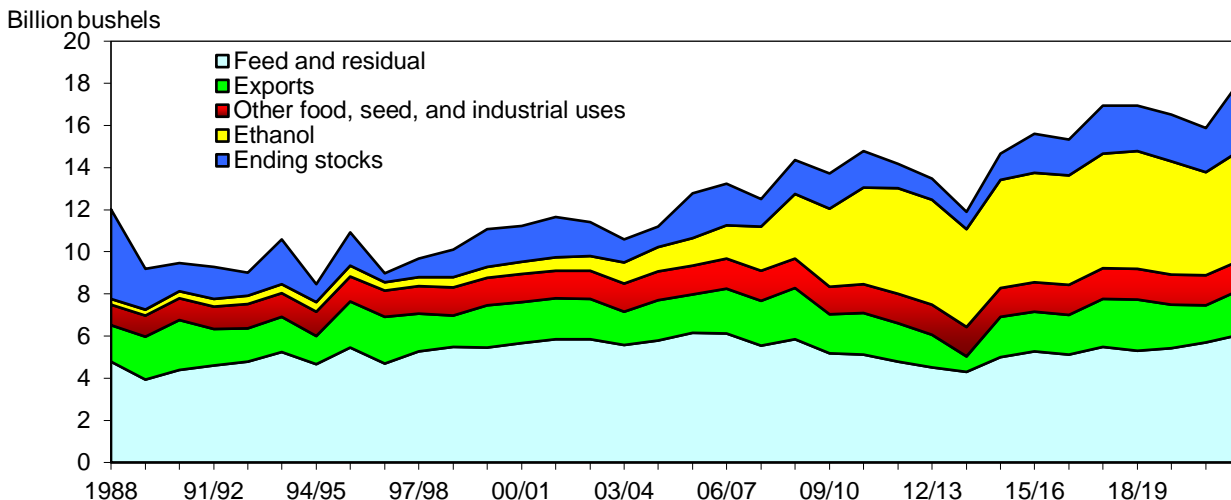


Note: FSI = Food, seed, and industrial.
 Source: USDA, Economic Research Service *Feed Grain Database*.

Social Distancing Restrictions Continue to Crimp 2019/20 Fuel Demand

Continued restrictions on commercial activity eroded fuel demand, and thus corn for ethanol in 2019/20. A slower than expected rebound in Energy Information Administration (EIA) weekly gasoline use and ethanol production took 50 million bushels from corn for ethanol to 4,900 million bushels, lowering total use by that amount. Vehicle miles driven plunged to 5,258 million miles per day in April (according to EIA estimates), compared with pre-COVID levels of 8,179 million in January. May ethanol production, based on weekly EIA data, is estimated just under 30 million gallons per day, compared with 24 million gallons per day in April, still historically low levels. May 2019 saw 44 million gallons per day.

Figure 6
U.S. corn utilization



Note: Marketing year 2019/20 and 2020/21 are projected.

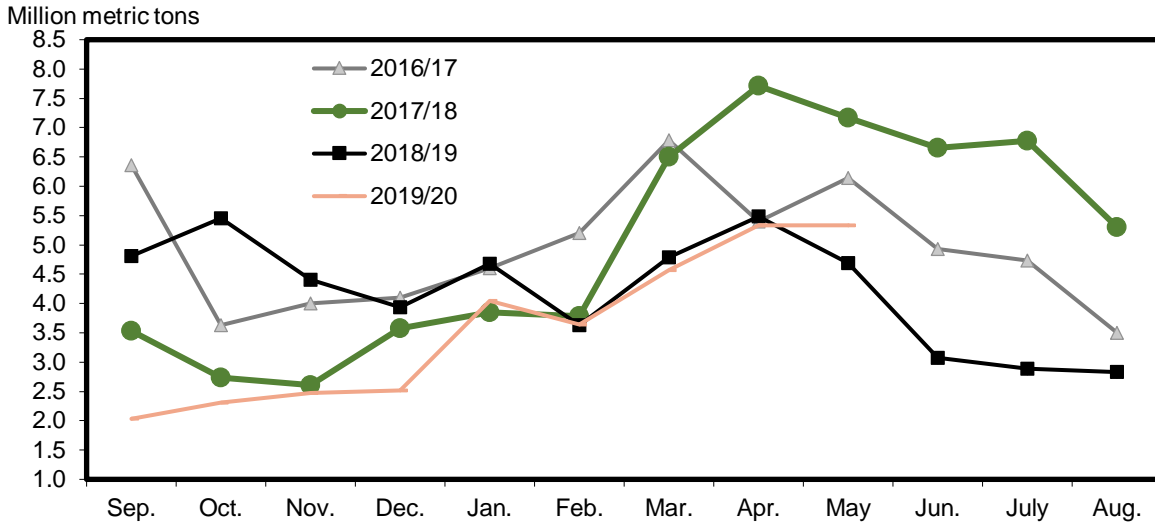
Source: USDA, World Agricultural Outlook Board, World Agricultural Supply and Demand Estimates..

Export Markets for Corn Co-products and Ethanol Lag

Ethanol exports were sharply lower (according to U.S. Commerce Department, Bureau of the Census data) in April, as Brazil cut imports due to increased domestic production and China remained essentially absent. Other countries—notably India, Mexico, South Korea and Canada—made up some of the slack in April. Exports for April totaled 99.4 million gallon, of which 23.8 million were purchased by Brazil, the lowest level since October 2019. For the 2019/20 marketing year to date, ethanol exports total 1,051.6 million gallons, compared with

1,076.5 million during the same period in 2018/19.

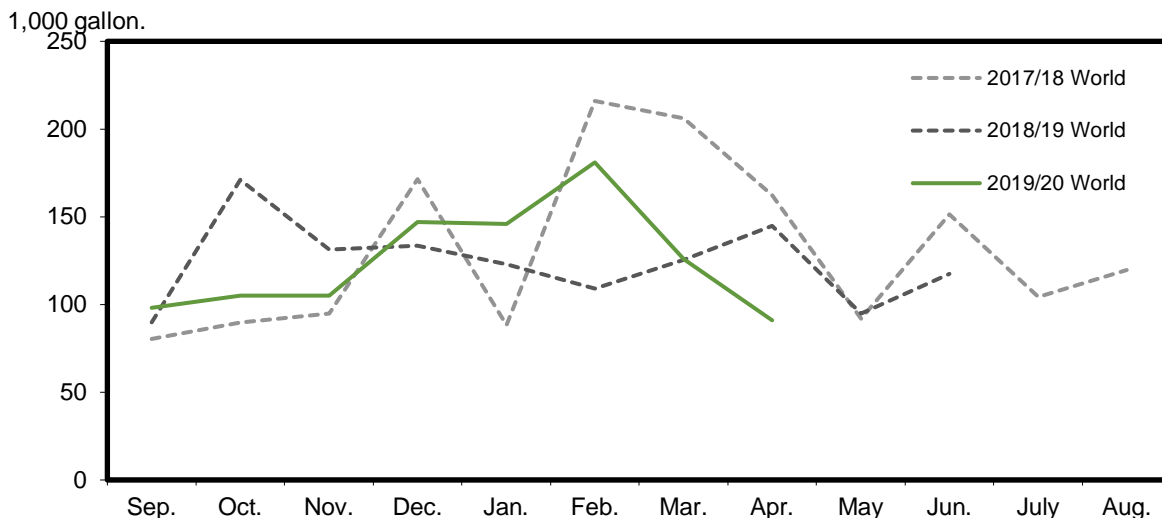
Figure 7
Monthly U.S. corn exports



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, January 2020 Grain Inspections.

Dried Distillers Grain (DDG) exports also fell compared with last year, as prices rose due to limited ethanol production. For the first 8 months of the marketing year, DDG shipments are 4 percent lower at 7.7 million short tons. However, April shipments were 17 percent lower than April last year at 0.84 million short tons. Although China was previously a major buyer of U.S. DDGs, they pulled out of the market in 2016, leaving it to Mexico and protein-hungry Southeast Asian countries including Vietnam, South Korea, and Indonesia. The EU is also a major buyer.

Figure 8
U.S. fuel ethanol exports



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

U.S. Feed Grain Use Lowered

U.S. feed grain disappearance for 2020/21 is projected at 391.6 million metric tons, 25.8 million above 2019/20. Feed and residual use, projected at 158.1 million tons, is 8.9 million higher than the 2019/20 estimate. FSI use, at 173.2 million tons, is 7.1 million higher than the revised 2019/20 projection—which accounts for a 1.3-million ton decrease in corn for ethanol. Exports, at 60.3 million tons, are unchanged from last month. Total feed grain disappearance in 2019/20 is estimated at 365.8 million tons.

Grain Consuming Animal Units

Grain consuming animal units (GCAU) for 2020/21 are projected at 102.43 million units, 1.81 million lower, largely due to a drop in forecast cattle on feed inventory and to a lesser extent lower layers and turkey numbers relative to last month. For 2019/20, the estimate of about 102.00 million units is essentially unchanged from last month.

Feed and Residual Use: Four Feed Grains and Wheat

On a September-August basis, feed and residual use for the four feed grains and wheat in 2020/21 are projected at 160.5 million metric tons. This is 0.3 million below last month's forecast and 7.2 million higher than last year's estimate of 153.3 million. The month-to-month decline is due to lower forecast wheat feeding.

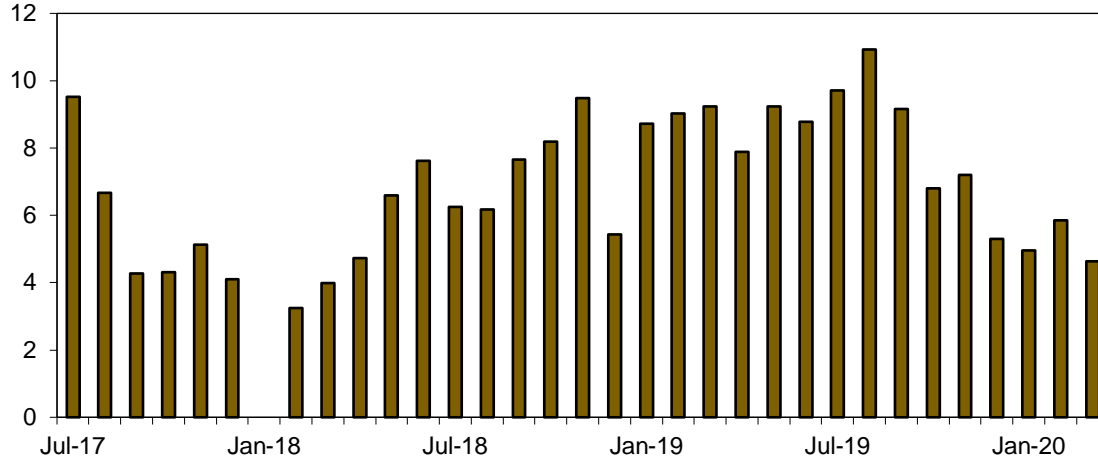
Few Changes in Sorghum, Barley, and Oats Balance Sheets

Projected sorghum supplies for 2020/21 are lowered 5 million bushels, to 381.2 million on lower carryin due to increased exports in 2019/20. With all use categories unchanged, ending stocks are lowered a corresponding 5 million bushels to 26.2 million bushels. 2019/20 sorghum exports are projected up 10 million bushels to 210 million due to continued strong demand from China. As a result, feed and residual use and ending stocks are lowered 5 million bushels each to 95.0 million and 30.2 million bushels respectively. The sorghum season average price received by farmers is unchanged at \$3.25 per bushel and \$3.20 per bushel for 2019/20 and 2020/21 respectively.

Figure 9

U.S. sorghum for ethanol use by month

Million bushels



Note: Months for which data were withheld to avoid disclosure are shown as null.

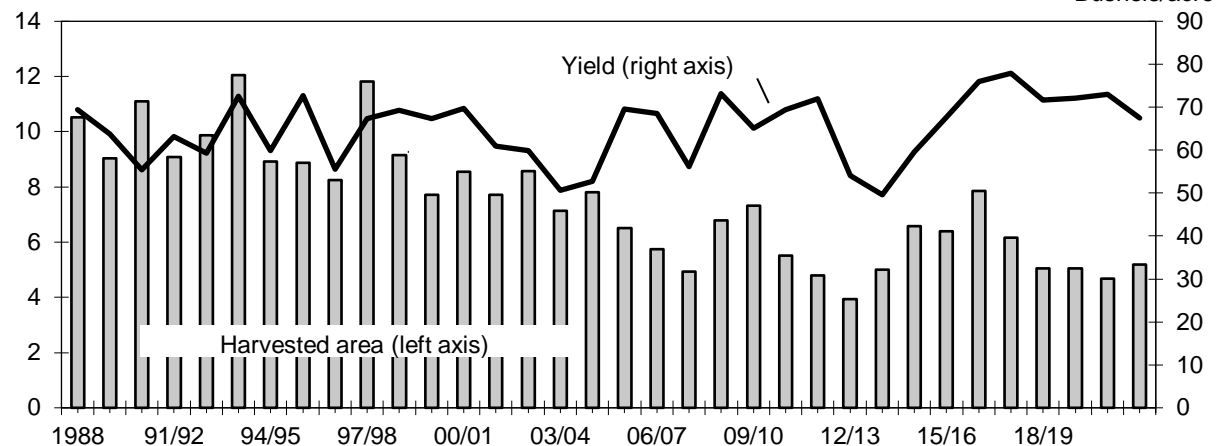
Source: USDA Economic Research Service using data from USDA, National Agricultural Statistics Service, *Grains Crushings and Co-Products*.

Figure 10

U.S. sorghum harvested area and yield

Million acres

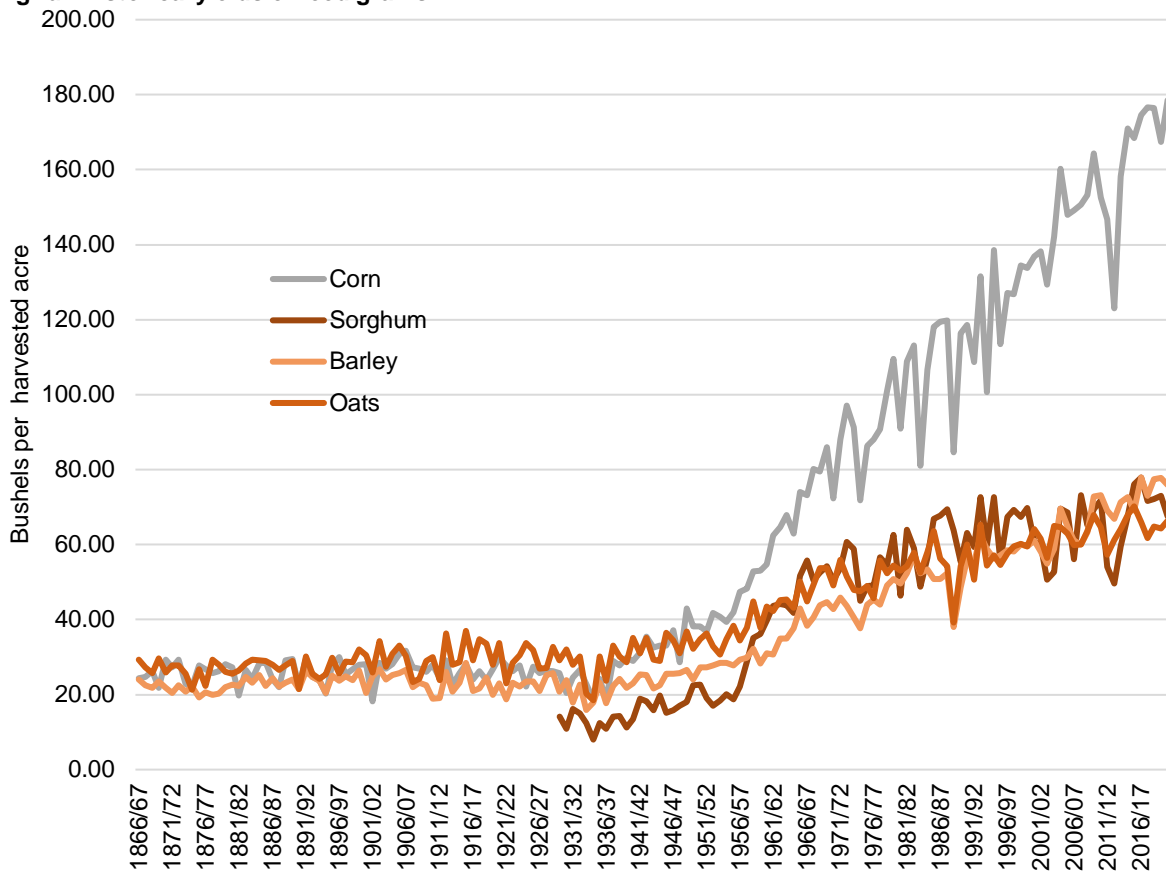
Bushels/acre



Sources: USDA, Economic Research Service with data from USDA, National Agricultural Statistics Service, *Quick Stats* and USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates*.

There are no changes in the barley balance sheet from last month for both 2019/20 and 2020/21. The projected season average price received by farmers for barley is unchanged at \$4.70 per bushel and \$4.30 per bushel in 2019/20 and 2020/21 respectively.

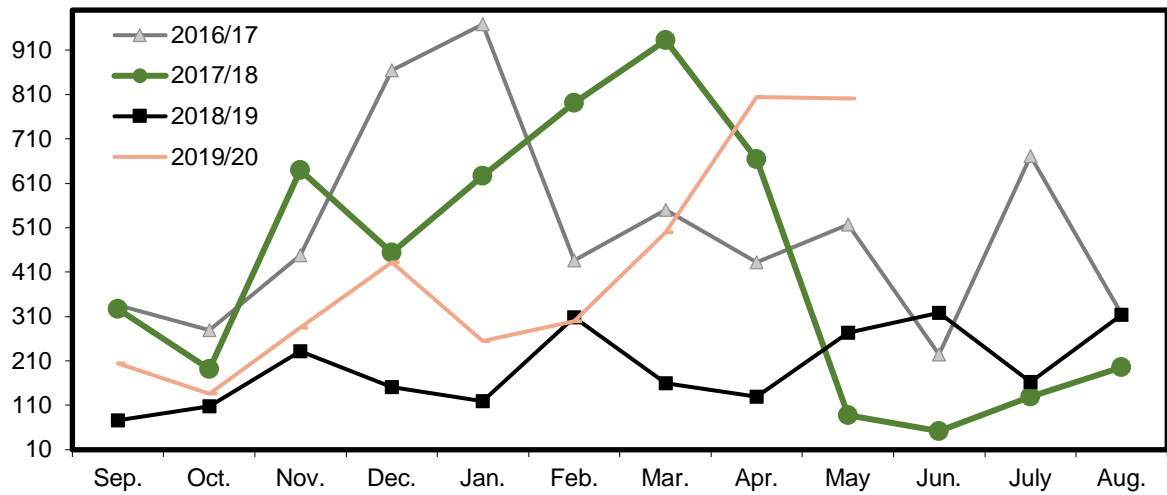
Figure 11
Long run historical yields of feed grains



Source: USDA, Economic Research Service *Feed Grain Database*.

Projected oat supply for 2019/20 is increased 3 million bushels on larger imports from Canada, bringing supplies to 185.0 million bushels. The increase in supply is offset by a 3-million bushel increase in feed and residual use to 73 million bushels. Total use is now projected at 156.0 million bushels, leaving ending stocks unchanged. The projected season average price received by farmers for oats is unchanged at \$2.85 per bushel and \$2.50 per bushel in 2019/20 and 2020/21 respectively.

Figure 12
Monthly U.S. sorghum exports
 Thousand metric tons



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, January 2020 Grain Inspections.

International Outlook

Coarse Grain Production Getting Larger

World coarse grain production is projected to reach 1,484.6 million tons in 2020/21, an increase of 3.2 million from last month's forecast. The largest increases are for **European Union (EU)** and **Australian** barley, and **Brazilian** corn. Partly offsetting is projected lower barley output in **Ukraine, Russia** and **India**. For a summary of changes to the production of coarse grains, see **table A1**; for information on production changes by country and by crop, see [table A2 below](#).

Table A1 - World and U.S. coarse grain production at a glance (2020/21), June 2020				
Region or country	Production	Change from previous month ¹	YoY Change ²	Comments
Million tons				
Coarse grain production (total)				
↑ World	1,484.6	+3.2	+78.1	
↑ Foreign	1,064.1	+3.2	+16.9	Coarse grain production for both 2019/20 and 2020/21 is projected higher. See table A2 below for details.
United States	420.5	No change	+61.2	See section on U.S. domestic output.
World production of coarse grains by type of grain				
CORN				
↑ World	1,188.5	+1.6	+75.0	
↑ Foreign	782.2	+1.6	+14.6	Corn production is projected higher for Brazil and Zambia. For 2019/20, corn output is revised for South Africa, Paraguay, and India. See table A2 below.
United States	406.3	No change	+60.4	See section on U.S. domestic output.
BARLEY				
↑ World	155.3	+1.1	+1.0	
↑ Foreign	151.3	+1.1	+0.7	Higher projected barley production in Australia and the EU, partly offset by declines in Russia, Ukraine, and India. See table A2 below.
United States	4.0	No change	+0.3	See section on U.S. domestic output.
OATS				
↑ World	24.8	+0.5	+2.4	
↑ Foreign	23.8	+0.5	+2.1	Higher projected production in Australia. See table A2 below.
United States	1.0	No change	+0.3	See section on U.S. domestic output.
¹ Change from previous month. No production changes are made for sorghum, rye, millet, and mixed grains this month.				
² YoY: year over year changes. For changes and notes by country, see table A2 below.				
Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.				

While **2019/20** harvests in the Northern Hemisphere were generally completed months ago, in the Southern Hemisphere crops are still growing and being harvested. **Brazil's** second-crop corn harvest for **2019/20** starts in late May and continues through August 2020. Considering the in-country and in-state area estimates, as well as high domestic corn prices at the time of

planting, corn area for the second crop in Brazil is projected 0.2 million hectares higher this month. The region produces on average two thirds of the country's second-crop corn. Average corn yields for the country are reduced this month. Brazil is a vast country with a mixed bag of weather conditions this year. Prolonged dryness hurt yields in the southern part of the country, especially in the state of Parana. However, good to excellent conditions in the Center-West (Mato Grosso), with rains extended into May, were beneficial for the crop. With higher area and yields, the Center-West corn output is projected to offset the reductions in the South. The Brazilian 2019/20 corn production estimate remains unchanged this month at 101.0 million tons.

Planting for the **2020/21** second-crop corn in Brazil is still half a year away. However, Brazil has been expanding second-crop corn area more recently at an average rate of 2-3 percent a year. With no shortage of land for further expansion in the Center-West, combined with generally favorable local currency prices, an increase in 2019/20 triggers a higher corn area estimate for next year, up 0.2 million hectares. With higher area and trend yield (unchanged month-to-month), corn output for 2020/21 is projected up 1.0 million from the previous month at 107.0 million, and 6.0 million tons above 2019/20 crop.

Corn yields in **Paraguay** for **2019/20** are projected lower this month, with corn output trimmed 0.6 million tons to 3.8 million. The country is located next to the southern Brazilian states of Parana and Santa Catarina, that went through pronounced dryness during the crop reproductive period from March through May.

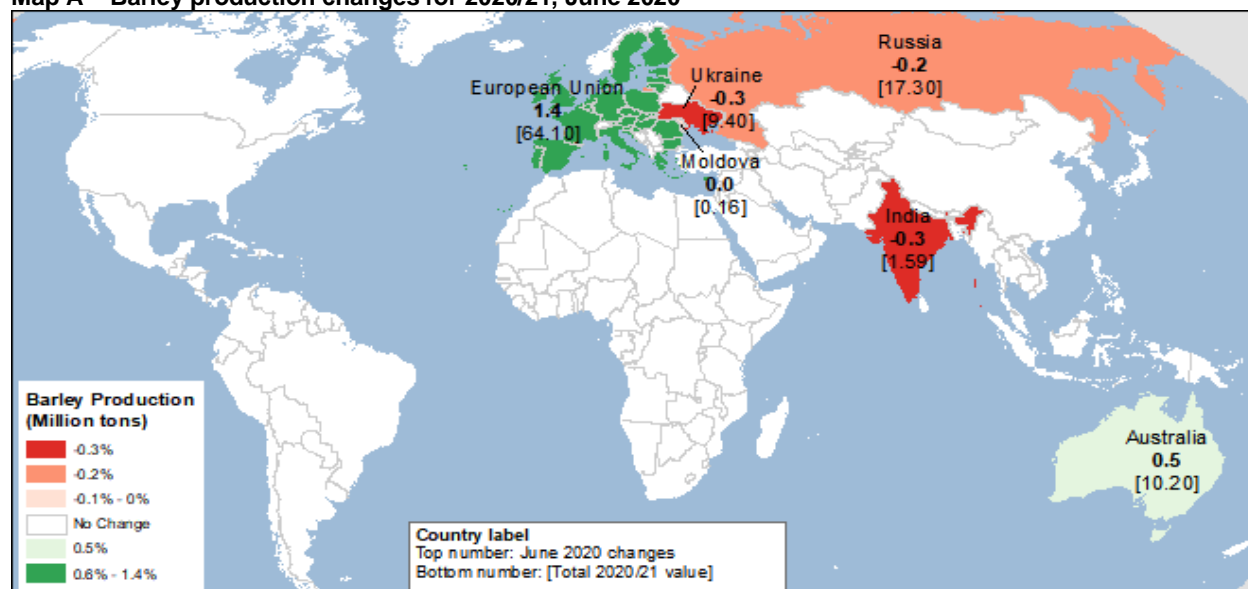
South African 2019/20 corn production is projected 0.3 million tons higher at 16.3 million, based on data published by the Crop Estimates Committee of the Department of Agriculture (CEC). After dry conditions at the time of planting, crop conditions recovered beautifully. Exceptional rains in the western part of the country's corn belt, and good-to-average conditions in the east, point to excellent yields, just below the all-time record of 2016/17.

Indian production of the coarse grain summer crops of corn, sorghum, and millet is projected 2.1 million tons higher for **2019/20** this month, following the third Government advance estimates. **Australian** coarse grain production for **2019/20** is also adjusted this month, with the new estimates by ABARES—Australian Bureau of Agricultural and Resource Economics and Sciences—down 0.1 million tons, with small partly offsetting changes to barley, sorghum, and oats. See **table A2** for information on this month's production changes by country and by crop. See **map A** below for a visual display of this month's barley production changes.

Table A2 - Coarse grain production by country at a glance, June 2020

Type of crop	Crop year	Production	Change in forecast ¹	YoY ² change	Comments
<i>Million tons</i>					
Coarse grain production by country and by type of grain (2020/21)					
BRAZIL					
↑ Corn	Mar-Feb	107.0	+1.0	+5.0	Although corn planting for the 2020/21 is months away, corn area is projected 0.2 million hectares higher based on the increase in 2019/20 (see below) and on the average rate for yearly area expansion.
ZAMBIA					
↑ Corn	May-Apr	3.4	+0.7	+1.4	Record-high corn area is projected this month, 0.3 million hectares higher than expected.
EUROPEAN UNION (EU)					
↑ Barley	July-June	64.1	+1.4	+1.1	Improved weather resulted in dramatic year-over-year increase in spring barley area in the United Kingdom (UK).
AUSTRALIA					
↑ Barley	Nov-Oct	10.2	+1.0	+1.4	Barley area in Australia is projected higher this month in line with recent ABARES ³ estimates.
↑ Oats	Nov-Oct	1.6	+0.5	+0.7	Oats area in Australia is projected higher this month in line with the recent ABARES ³ report.
UKRAINE					
↓ Barley	July-June	4.6	-0.3	-0.1	Crop conditions deteriorated and dryness persisted in May in the parts of the country (Odessa, Nikolayev, and Crimea) where most Ukrainian winter barley is grown.
RUSSIA					
↓ Barley	July-June	17.3	-0.2	-2.6	Unfavorable conditions during crop emergence and development are expected to hurt winter barley yields (a small part of the total barley grown in Russia) in the Southern District of the country.
INDIA					
↓ Barley	Apr-Mar	1.6	-0.3	Small change	This winter crop is already harvested, and production is adjusted based on the third Government advance estimate.
Coarse grain production by country and by type of grain (2019/20)					
PARAGUAY					
↓ Corn	June-May	3.8	-0.6	+0.1	Located next to the southern Brazilian states of Parana and Santa Catarina, Paraguayan production of second crop corn also experienced extensive dryness during its reproductive period, and corn yields are expected to be hurt.
SOUTH AFRICA					
↑ Corn	May-Apr	16.3	+0.3	+4.4	Harvest of the 2019/20 corn crop is on the way, with expectation of record-high yields in the west of the corn belt, where rains during pollination and grain fill boosted yields. In the eastern part of the corn belt, yields are mostly average. The analysis points to an excellent crop, with yields just below the record of 2016/17.
INDIA					
↑ Corn	Nov-Oct	28.9	+0.4	+1.2	Based on the third advance Government estimates, corn production for 2019/20 is increased.
↑ Sorghum	Nov-Oct	4.6	+0.2	+1.2	Based on the third advance Government estimates, sorghum production for 2019/20 is increased.
↑ Millet	Jan-Dec	12.3	+1.4	+2.1	Based on the third advance Government estimates, corn production for 2019/20 is increased. India is by far the top millet producer in the world.
¹ Change from previous month. Smaller changes for coarse grain output are made for several countries, see map A for changes in barley .					
² YoY: year over year changes. ³ ABARES - Australian Bureau of Agricultural and Resource Economics and Sciences.					
Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.					

Map A – Barley production changes for 2020/21, June 2020

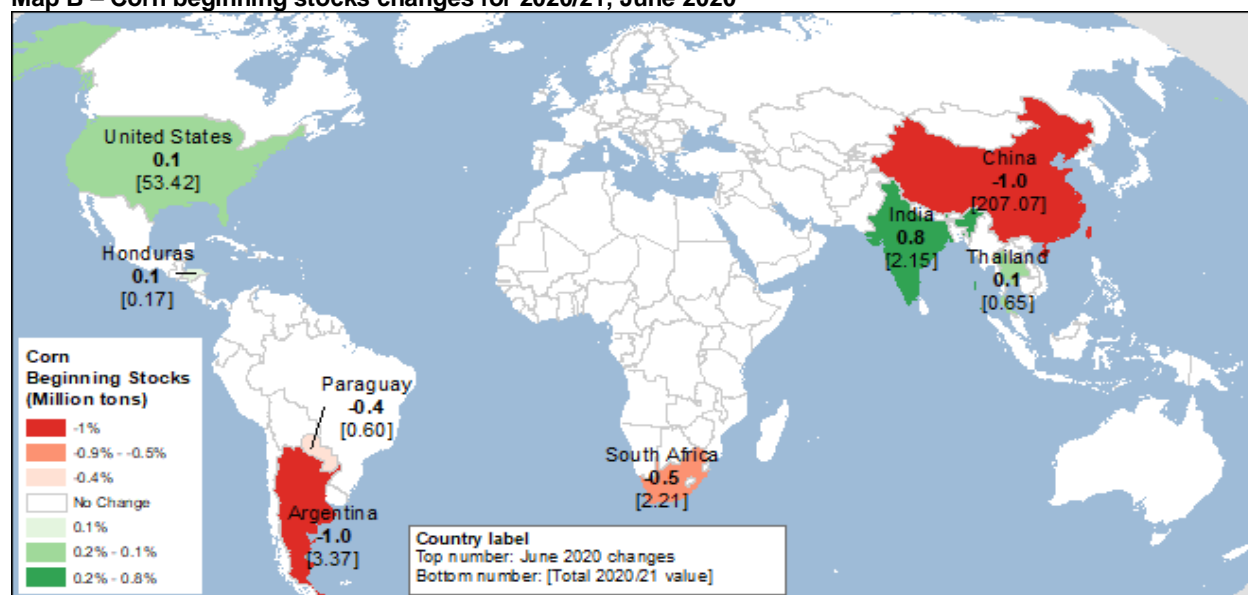


Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

Coarse Grain Use Higher, Stocks Down for 2020/21

The revisions to 2019/20 supply and demand reduce 2020/21 foreign coarse grain beginning stocks by 2.1 million tons, leaving foreign supplies of coarse grain just 1.0 million tons higher. For a visual display of this month's changes in **corn** beginning stocks, see **map B**.

Map B – Corn beginning stocks changes for 2020/21, June 2020

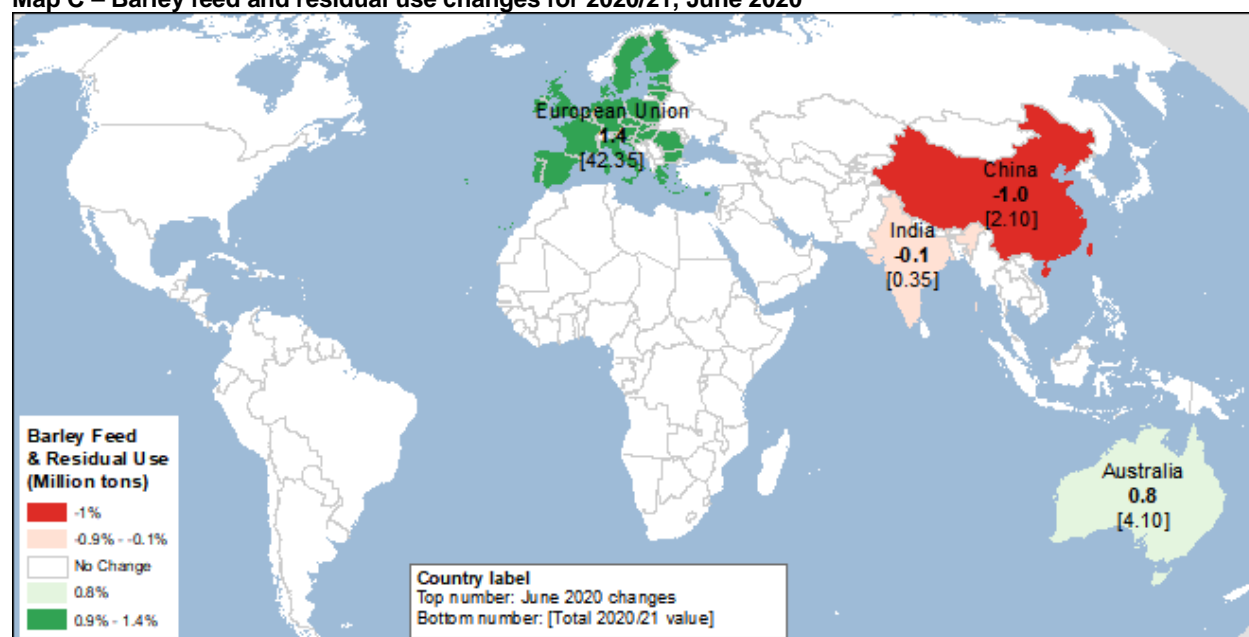


Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

The forecast for 2020/21 foreign coarse grain use is increased this month by 3.4 million tons, with the major part of the rise going to feed and residual use. Due to improved production prospects and low relative prices for barley feeding, higher feed use for barley is projected in the **EU** and **Australia**, and for corn in **Zambia**. Coarse grain use is projected higher in **Thailand**, which is expected to import more attractively low-priced corn for feeding from neighboring **Burma** and **Laos** and barley from Australia. In **China**, a shift in feeding is expected for both 2019/20 and 2020/21. Barley consumption is reduced by 1.0 million tons for both years, with an offsetting change for corn feeding. China is expected to feed less imported barley from Australia ([see the trade section below](#)) for two years in a row, while offsetting the decline in feeding by dipping into its massive corn stocks. China is also expected to enhance its feed use by using more sorghum and oats while boosting imports of these crops. A number of fractional changes in coarse grain use are made this month for several countries.

For a visual display of the changes in **barley** feed and residual use, see **map C**.

Map C – Barley feed and residual use changes for 2020/21, June 2020

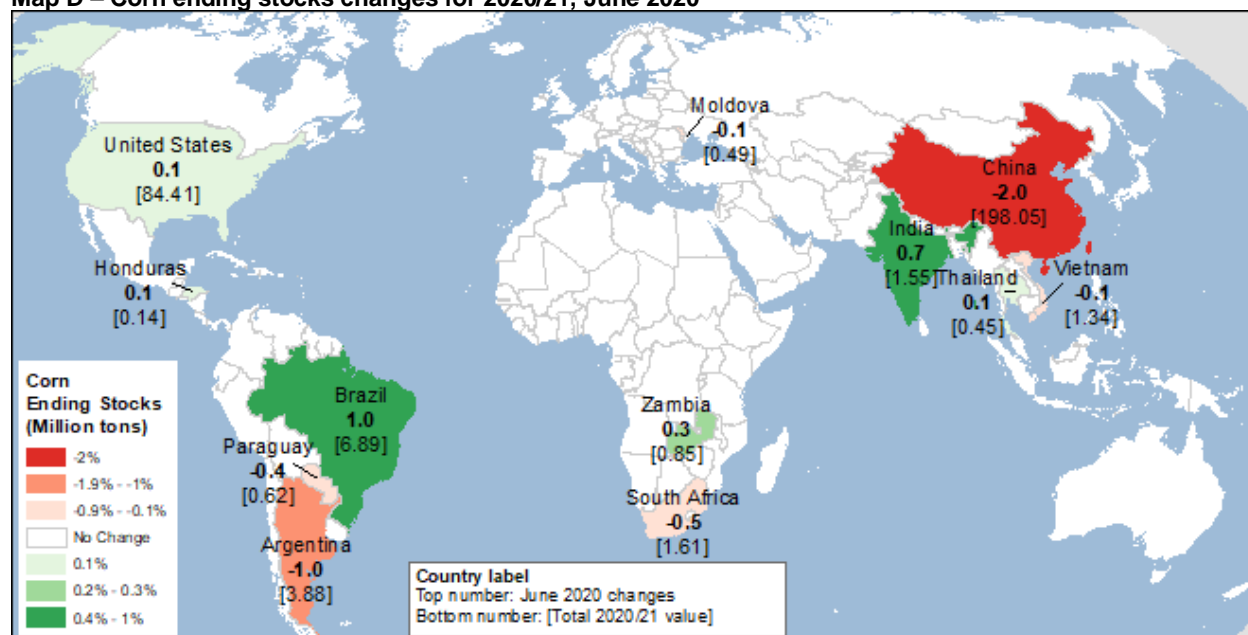


Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution online database.

With higher projected use more than offsetting the marginal increase in supplies, foreign coarse grain ending stocks are projected down 2.3 million tons this month to 283.4 million (the lowest foreign stocks since 2014/15). Stocks are projected lower for **China** (because of higher corn use), **Argentina** (as increased export prospects for 2019/20 reduce corn supplies and stocks in 2020/21), the **EU** (low relative barley prices support higher feeding, more than offsetting increased supplies), and **Paraguay** (lower corn production prospects). Partly offsetting these

reductions are higher projected stocks for **Brazil** (due to boosted corn production and lower 2019/20 exports) and **India** (higher projected crops for 2019/20 and therefore supplies for 2020/21). For a visual display of the changes in **corn** ending stocks, see **map D**.

Map D – Corn ending stocks changes for 2020/21, June 2020



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

Small Trade Changes and Export Shares Shift This Month, U.S Exports Unchanged

The June forecast for world coarse grain exports for the 2020/21 October-September international trade year is virtually unchanged from the May forecast at 218.5 million tons, with an increase of less than 0.1 million, and several offsetting changes across crops and countries. Corn and oats exports are up by 0.25 and 0.15 million tons, respectively, while barley exports (**Australia**) are reduced by 0.3 million tons.

Corn exports are projected higher for Zambia, which saw its crop projections grow; while oats exports are adjusted for Australia in line with production changes. A reduction of Australian barley exports is addressed [below](#).

Changes in projected corn exports for the 2019/20 international trade year (that will end in September) involve two offsetting changes. **Brazilian** corn exports have been waning, with a major shift to soybean exports. Although corn exports by Brazil are expected to resume along

with the second-crop corn harvest, the projected exports for the year are trimmed by 1.0 million tons to reach 37.0 million. On the contrary, the rapid current pace of **Argentine** corn exports, with record-high volumes exported in April and May, calls for an increase. Argentina is expected to export 1.0 million more corn and push its record for the October-September trade year further to 36.0 million.

The **U.S. 2019/20** corn exports forecast is unchanged this month at 47.0 million tons (1.775 billion bushels for the September-August local marketing year). A decline in domestic prices—the side effect of this year’s COVID-19 pandemic, with a rapid reduction in gasoline use and corn ethanol production that left the United States awash in low priced corn—gave the U.S. a window of opportunity to export more than five million tons in April and May. U.S. corn exports are expected to slow down in coming months just as competitors—corn producers in the Southern Hemisphere and Ukraine where crops become readily available – enter the market. This leaves U.S. corn exports on track to reach the forecast.

China’s Punitive Tariffs Affect Barley Markets

Following lengthy investigation, the Chinese Government imposed a punitive 85 percent tariff on barley imports of Australian origin starting May 19, accusing the country of dumping and claiming unmerited state support. **China** typically imports more than half of its barley from **Australia** and accounts for a quarter of global trade of this crop. This month, China’s barley imports are forecast 1.0 million tons lower for both 2019/20 and 2020/21, leaving Australia with higher barley supplies, which adds to the expected crop expansion and drives barley prices down. In 2019/20 the **European Union** (mainly **France** and **Germany**) is expected to export 0.7 million more tons of barley to China and other destinations, partly offsetting a 0.8-million-ton of lower Australian barley exports. On the import side of barley trade, **Thailand** is the country to benefit from importing more Australian low-priced barley (up 0.3 million tons), while **Saudi Arabia**, **Algeria**, and **Tunisia** are expected to get some additional barley from multiple destinations. China, on the other hand, is expected to partly offset lower barley imports by buying more sorghum in 2019/20 (up 0.3 million tons), mainly from the **U.S.**, and extra oats in 2020/21 from Australia (up 0.1 million tons).

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