



Feed Outlook: September 2023

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Total U.S. Feed Grain Production Is Lifted Slightly on Gains for Corn

The U.S. feed grain production forecast for 2023 elevated modestly this month at 398.7 million metric tons, capturing near offsetting changes in corn and sorghum output. Reflecting the net effects of a forecasted decrease in yields to 173.8 bushels per acre and an increase in harvested acreage (raised to 87.1 million acres), U.S. corn production rose 23.1 million bushels this month to 15.1 billion. Competing changes to the back-year corn balance sheet result in lower beginning stocks for 2023/24, slightly counteracting production gains, bringing total supply to 16.6 billion bushels. Total corn use remains unchanged, resulting in an increase in 2023/24 ending stocks to 2.22 billion bushels from 2.2 billion.

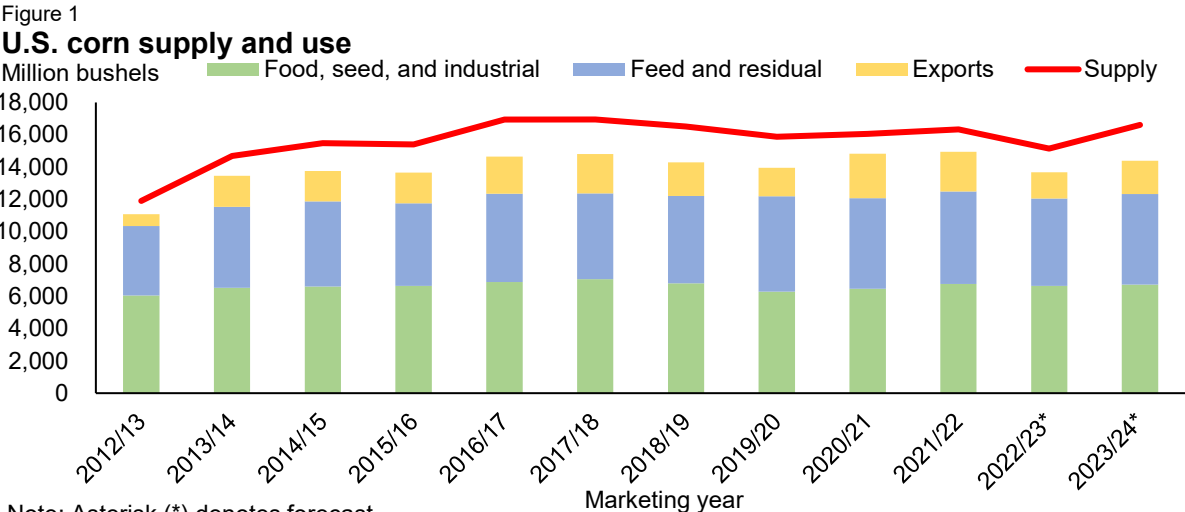
Global coarse grain production in 2023/24 is projected down 0.8 million tons this month at 1,496 million tons. Foreign coarse grain production (global minus U.S. output) for 2023/24 is projected 1 million tons lower—driven by reduced barley and oat output—but higher foreign corn production slightly offset those reductions. Barley production in **Canada** (which is down 1.2 million tons) is a major contributor to the decline of global production. Global coarse grain trade and global domestic use are each down for 2023/24, reflecting the projected lower production.

Domestic Outlook

2023/24 Corn Production Is Slightly Raised, as Higher Harvested Area Offsets Lower Yields in Key States

The USDA, National Agricultural Statistics Service (NASS) September *Crop Production* report forecasts the national corn yield at 173.8 bushels per acre. This forecast is 1.3 bushels per acre lower than last month’s projection, which is largely driven by reduced corn yield forecasts in Illinois, Iowa, Minnesota, and Nebraska. This reduction is further supported by diminishing crop conditions. As of September 10, the percent of the 2023/24 corn crop rated good to excellent fell by 7 percentage points from the same time last month, to 52 percent. However, losses in corn yields are more than offset by gains in acreage. Although major corn producing States of Illinois and Iowa are both expected to harvest 300,000 less acres than anticipated—gains in Kansas, Louisiana, Minnesota, Missouri, and Nebraska contribute to the overall increase in total corn area for 2023/24.

The net result of these changes reflects a 2023/24 corn production forecast that is slightly higher than last month’s forecast of 15.11 billion bushels to 15.13 billion bushels. After accounting for adjustments to 2022/23 corn supply and use forecasts, a slight reduction in 2023/24 beginning stocks brings the total corn supply projection up to 16.6 billion bushels (figure 1). No changes are made this month to corn use, resulting in an ending stocks forecast that is 18.1 million bushels higher than the previous forecast at 2.22 billion bushels. The season average price received by farmers remains at \$4.90 per bushel.



Note: Asterisk (*) denotes forecast.
 Source: USDA, Economic Research Service using data from USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates*.

Year-to-date corn exports are more than 30 percent behind the July 2022 cumulative total, however, July 2023 export volumes were higher than anticipated based on export inspections data. In conjunction with a boost in net sales during the final week of August and the aforementioned relationship between realized U.S. Bureau of the Census export volumes and inspection totals for July, the 2022/23 corn export forecast is raised by 40 million bushels this month to 1.67 billion.

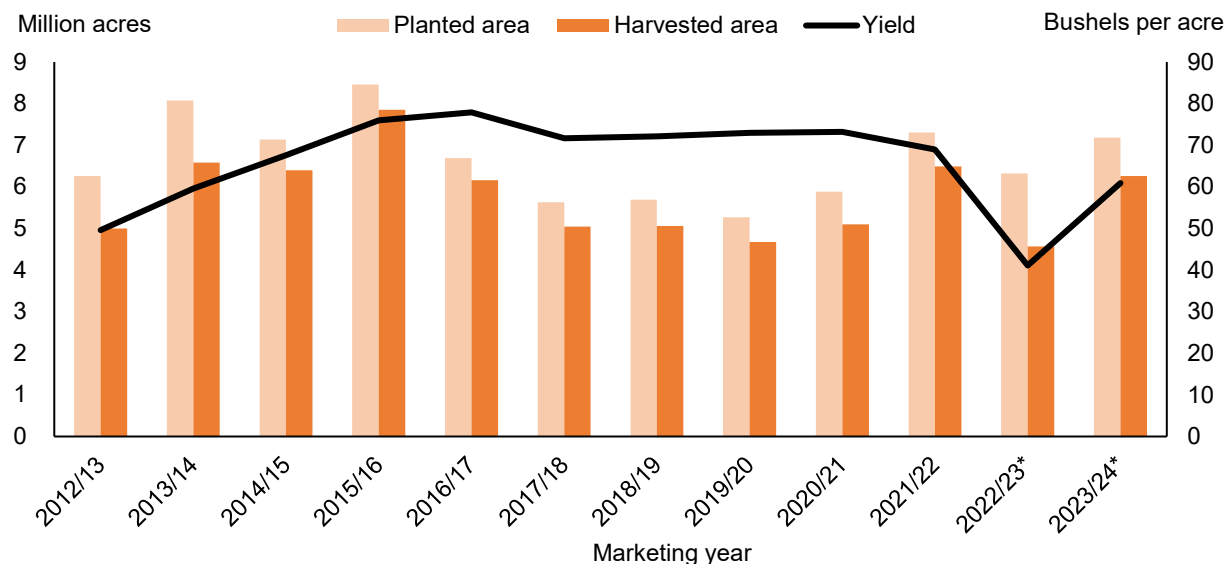
The *Grain Crushings and Co-Production Annual Summary*, published by NASS on September 1, contained lower corn use for ethanol revisions affecting the 2021/22 and 2022/23 marketing years. In fact, corn use for ethanol use continues to weaken in the last quarter of the 2022/23 marketing year, on strong implied conversion ratios of corn to ethanol. Consequently, the 2022/23 corn ethanol for fuel-use forecast is revised down by 30 million bushels to 5.195 billion. Ultimately, this results in a 10-billion-bushel bump to the 2022/23 total corn-use forecast that now sits at nearly 13.7 billion bushels. Offset by strong imports, which are raised to 40 million bushels, ending stocks are lowered by 5 million bushels.

Sorghum Yields Continue To Fall

As of September 10, 37 percent of the sorghum crop was rated as mature, slightly ahead of the 5-year average. Moreover, 44 percent of the 2023/24 sorghum crop was rated as good to excellent, lagging the 5-year average for the same marketing year period by 5 percentage points. This rating highlights the impact of drought affecting close to 60 percent of this year's sorghum crop. Sorghum production for 2023/24 is projected to fall by 12 million bushels to 381.2 million. This change in output can be attributed to a lower yield forecast, reduced by 5.3 bushels per acre to 60.9 bushels per acre, and a 320,000-acre bump in harvested area that now sits at 6.26 million acres (see figure 2). Consequently, new crop feed and residual sorghum use is reduced by 10 million bushels to 65 million. With no other components of the balance sheet adjusted this month, the 2023/24 sorghum ending stocks forecast sits at 31.4 million bushels.

Figure 2

U.S. sorghum acreage and yield



Note: Asterisk (*) denotes forecast.

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

Changes to the 2022/23 sorghum balance sheet this month are offsetting, resulting in unchanged ending stocks. Specifically, July sorghum exports and August export inspection data were stronger than anticipated, resulting in a 10-million-bushel increase in the forecast to 110 million bushels. With foreign demand for U.S. sorghum exceeding expectations, feed and residual use is expected to fall proportionately, totaling 40 million bushels.

International Outlook

World Coarse Grain Production Is Slightly Reduced

Global **2023/24** coarse grain production is projected at 1,496.5 million tons, down 0.8 million tons from last month and up 40.6 million tons from last year. The decline is led by reduced coarse grain prospects of 1.2 million tons in **Canada**—followed by **Australia** and the **European Union**, with reductions of 0.4 and 0.3 million tons, respectively—and a small reduction from **Thailand** of 0.1 million tons. Coarse grain reductions are partly offset this month with higher production from **Ukraine** and **Russia** of 0.5 and 0.4 million tons, respectively, and additional smaller increases in **Ecuador** and **South Africa**.

Corn production for **Ukraine** is projected higher by 0.5 million tons this month to 28.0 million for 2023/24. Generally favorable August weather and improved moisture levels in **Ukraine** contributed to above-average crop conditions and increased projected yields. **U.S.** corn production is projected 0.6 million tons higher, with increased area more than offsetting lower yield. Corn output is projected lower for the **European Union** this month, down 0.3 million tons to 59.4 million, mostly on lower yields. Corn production for **Ecuador** was raised by 0.1 million tons, while **Thailand** was lowered by 0.1 million tons, to leave foreign corn production up 0.2 million tons for September.

Global barley production is lowered 0.8 million tons this month. The largest change in barley prospects is a 1.2-million-ton reduction for **Canada**, with yields projected 13 percent lower than last month and down 22 percent from last year, based on crop reports and in line with reports by Statistics Canada. **Russia's** barley output is projected 0.4 million tons higher for September. Barley harvest is currently underway in **Russia** and based on harvest reports with about 73 percent of the crop already harvested, yields are reported higher than expected.

Oats production for **Australia** for 2023/24 is lowered by 0.4 million tons for September, with lower projected area and yield. The **European Union** also has production lowered by 0.1 million tons, with slightly higher yields offset by lower area. The changes leave global oats output down 0.5 million tons this month.

For information and a visual display of this month's changes in coarse grain production, see tables A1 and A2 below.

Table A1 - World and U.S. coarse grain production at a glance (2023/24), September 2023

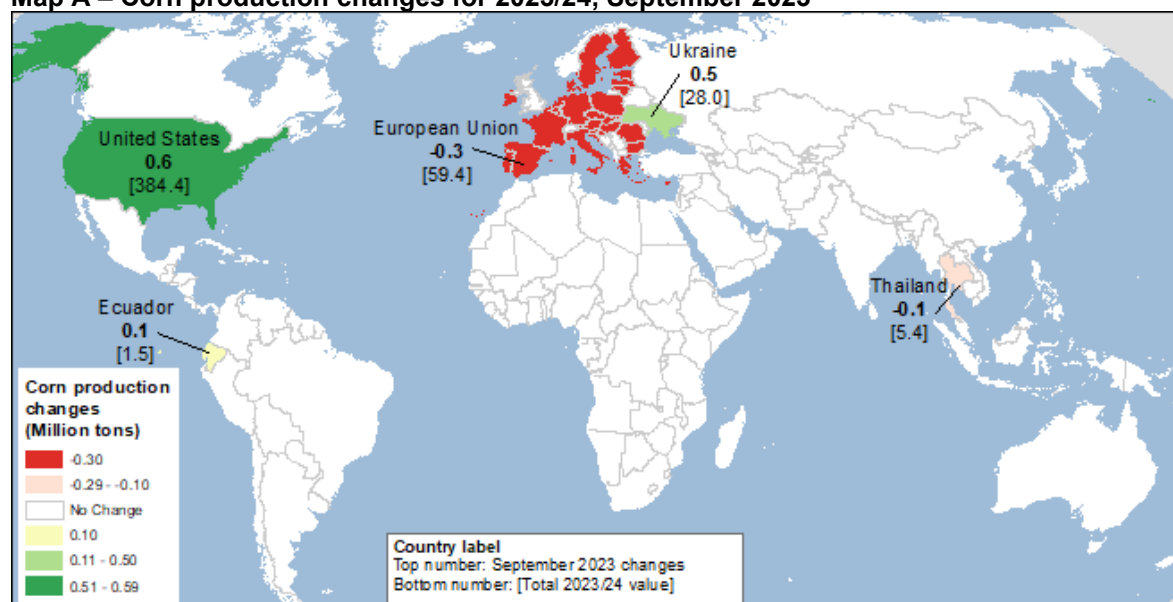
Region or country	Production	Change from previous month ¹	YoY Change ²	Comments
<i>Million tons</i>				
Coarse grain production (total)				
↓ World	1,496.5	-0.8	+40.6	
↓ Foreign	1,097.4	-1.0	+9.5	Partly offsetting changes are made for a number of countries and commodities. See table A2.
↑ United States	399.1	+0.3	+50.2	See section on U.S. domestic output.
World production of coarse grains by type of grain				
CORN				
↑ World	1,214.3	+0.8	58.7	
↑ Foreign	829.9	+0.2	+23.0	Higher corn output for Ukraine and Ecuador are partly offset by reductions in the European Union and Thailand. See table A2.
↑ United States	384.4	+0.6	+35.1	See section on U.S. domestic output.
BARLEY				
↓ World	141.9	-0.8	-9.8	
↓ Foreign	138.0	-0.8	-9.9	Lower projected barley production in Canada and fractional reduction in Moldova are partly offset by increased prospects in Russia and the European Union. See Table A2.
United States	3.9	No change	No change	
SORGHUM				
↑ World	62.3	+0.3	+6.2	
Foreign	52.7	No change	+1.3	
↑ United States	9.7	+0.3	+4.9	See section on U.S. domestic output.
OATS				
↓ World	20.6	-0.5	-4.7	
↓ Foreign	19.8	-0.5	-4.6	Lower production is projected for Australia and the European Union. See table A2.
United States	0.7	No change	-0.1	
¹ Change from previous month. ² YoY: year-over-year changes. ³ Totals may not add due to rounding. Fractional changes are made for Mixed Grain and Rye. For changes and notes by country, see table A2. Source: USDA, Economic Research Service calculations based on USDA, Foreign Agricultural Service, <i>Production, Supply, and Distribution</i> database.				

Table A2 - Coarse grain foreign production for 2023/24 at a glance, September 2023

Type of crop	Crop year	Production	Change in forecast ¹	YoY ² change	Comments	
<i>Million tons</i>						
2023/24 Crop year						
UKRAINE						
↑	Corn	Oct-Sep	28.0	0.5	1.0	Ukraine's corn production is projected higher, based on higher yields from favorable weather that contributes to above average crop conditions.
EUROPEAN UNION (EU)						
↓	Corn	Oct-Sep	59.4	-0.3	7.2	Lower corn production is projected for Bulgaria and France and is partly offset by higher corn prospects in Germany.
↑	Barley	Jul-Jun	48.4	0.1	-3.2	Partly offsetting revisions are made for a number of countries in the region, resulting in slightly higher yield and lower area.
↓	Oats	Jul-Jun	6.7	-0.1	-0.9	Fractional revisions are made for Portugal, France and the Czech Republic.
THAILAND						
↓	Corn	Jul-Jun	5.4	-0.1	0.2	A revision, based on lower yield due to below average rainfall that has impacted corn yield prospects.
CANADA						
↓	Barley	Aug-Jul	8.0	-1.2	-2.0	Barley yields are projected lower, in line with Statistics Canada report.
RUSSIA						
↑	Barley	Jul-Jun	19.5	0.4	-2.0	Higher projected barley yields are based on harvest reports, with about 73 percent of area harvested.
ECUADOR						
↑	Corn	May-Apr	1.5	0.1	-0.1	A revision, based on projected increase in area and yields.
AUSTRALIA						
↓	Oats	Nov-Oct	1.1	-0.4	-0.5	Area and yields are projected lower this month.
¹ Change from previous month. See map A for changes in corn production.						
² YoY: year-over-year changes.						
Source: USDA, Economic Research Service calculations based on USDA, Foreign Agricultural Service, <i>Production</i> , <i>Supply</i> , and <i>Distribution</i> database.						

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

Map A – Corn production changes for 2023/24, September 2023



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

The extension of table A2 below presents changes in coarse grain production for the crop year 2022/23.

Table A2 (continued) - Coarse grain foreign production for 2022/23 at a glance, September 2023

	Type of crop	Crop year	Production	Change in forecast ¹	YoY ² change	Comments
<i>Million tons</i>						
2022/23 Crop year						
BRAZIL						
↑	Corn	Mar-Feb	137.0	+2.0	+21.0	Production is increased 21 million tons from the previous year. With 89 percent of safrinha corn harvest completed, yield expectations remain favorable.
MEXICO						
↑	Corn	Oct-Sep	28.0	+1.5	+1.2	Higher projected yield is in line with official data.
ECUADOR						
↑	Corn	May-Apr	1.6	+0.2	-0.1	A revision, based on higher area and yields reported by the National Institute of Statistics and Census (INEC).
SOUTH AFRICA						
↑	Corn	May-Apr	17.1	+0.1	+1.0	A revision, based on higher yields and slightly lower area.
¹ Change from previous month.						
² YoY: year-over-year changes.						
Source: USDA, Economic Research Service calculations based on USDA, Foreign Agricultural Service, <i>Production, Supply, and Distribution</i> database.						

Global Coarse Grain Trade Is Down for September

World coarse grain trade is projected slightly lower for September. World coarse grain exports in 2023/24 (October-September international year) are forecast down 0.2 million tons this month, with reductions of 0.3 million tons for **Canada** and 0.2 million tons for **Australia** partly offset by an increase of 0.3 million tons in exports for **Russia**. Global coarse grain imports are down just over 0.1 million tons for September, with a 0.1-million-ton decrease in imports for **Colombia** and a fractional decrease for **Mexico's** coarse grain imports.

Lower Coarse Grain Consumption and Higher Stocks for 2023/24

Global coarse grain use in 2023/24 is projected down 1.5 million tons this month to 1,485.1 million. The change is driven primarily by a decrease of 1.5 million tons in global feed—in combination with a slight increase in food, seed, and industrial use. **Canada** leads all countries with a 1.0-million-ton reduction in consumption, followed reductions of 0.4 million tons for the **European Union**, 0.3 million tons for the **United States**, and 0.1 million tons for **China**. **Mexico** and **Australia** also have fractional coarse grain production reductions. Globally, these reductions are partly offset by increases in coarse grain use for **Argentina** of 0.1 million tons and **Russia** of 0.2 million tons. **South Africa** and **Columbia** are increased fractionally this month as well.

Corn consumption in **Canada** is projected 0.5 million tons lower this month, with most of the reduction attributed to a 0.4-million-ton decrease in corn feed use. Corn consumption is also reduced by 0.3 million tons for the **European Union**. Lower corn grain consumption in 2023/24 for **Canada** and the **European Union** are partly offset by increases of 0.1 million tons in corn consumption for **Argentina** and **Ecuador** and a fractional increase for **El Salvador**, to leave global corn consumption down 0.6 million tons for this month.

Global barley consumption for 2023/24 is lowered 0.5 million tons this month to 143.7 million tons. With lower projected production, barley consumption is reduced 0.7 million tons for **Canada**, with barley feed use cut by the same amount. The decrease is partly offset by an increase of 0.2 million tons in domestic barley consumption for **Russia** and 0.1 million tons for **Australia**, as well as fractional changes for a number of other countries.

Oats consumption is also projected down 0.1 million tons this month, with offsetting changes in a number of countries. For example, domestic consumption in **Canada** is expected to increase 0.2 million tons in 2023/24.

This is more than offset by projected decreases of 0.2 million tons for **Australia** and 0.1 million tons for **China**. Fractional changes are also made for the **European Union**, **Mexico**, and **South Africa**.

Global coarse grain stocks are projected 2.0 million tons higher for 2022/23 and 2.8 million tons higher for 2023/24. The largest changes in 2023/24 coarse grain ending stocks are a 1.3-million-ton increase in stocks for **Brazil**, followed by a 0.8-million-ton increase in **Mexico**, a 0.6-million-ton increase for **Ukraine**, and a 0.5-million-ton increase for **China**. Ending stocks for the **United States** were also revised 0.4 million tons higher. These increases are partly offset by decreases of 0.2 million tons for **Australia**, **Canada**, and **Pakistan** and decreases of 0.1 million tons for **Thailand** and the **United States**.

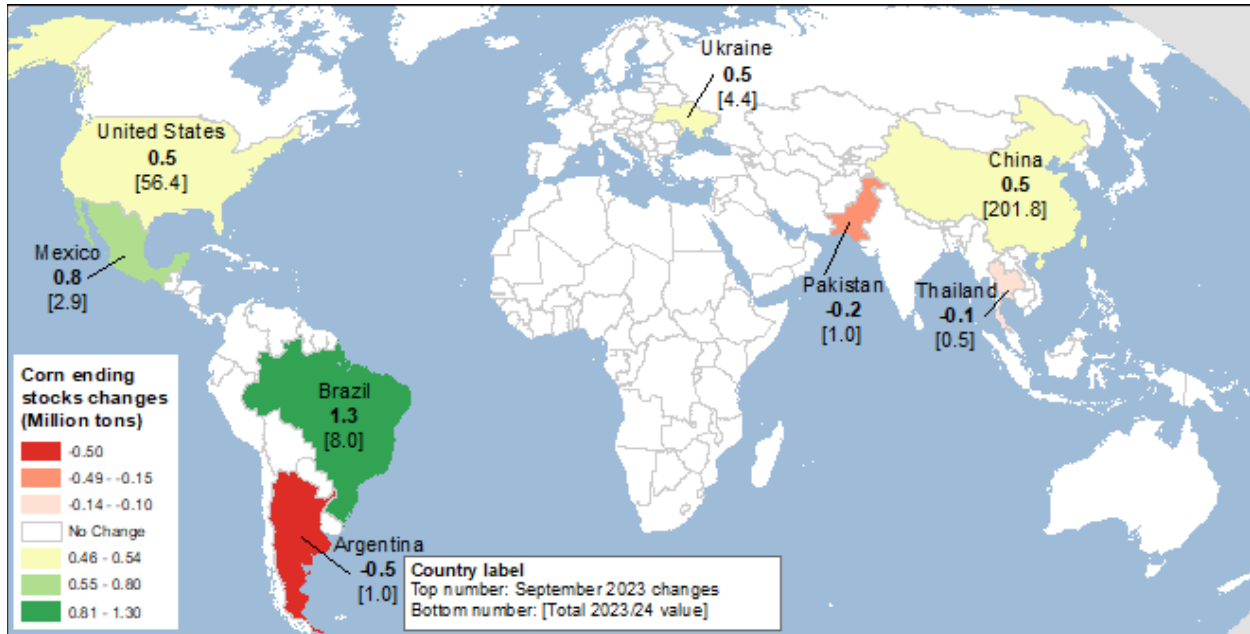
Global corn stocks for 2023/24 are projected 2.9 million tons higher for this month. The most notable changes in global corn stocks are increases of 1.3 million tons for **Brazil**, 0.8 million tons for **Mexico**, and 0.5 million tons for **Ukraine**, **China**, and the **United States**. The increases are partly offset by decreases of 0.2 million tons for **Pakistan** and 0.1 million tons for **Thailand**. Several fractional changes are also made this month.

Global barley stocks are lowered 0.2 million tons for 2023/24. The changes are led by a decrease of 0.4 million tons for **Canada** and a decrease of 0.1 million tons for **Australia**. Increases in ending stocks of 0.1 million tons for the **European Union** and **Ukraine**, as well as fractional changes in a number of other countries, partly offset the declines.

A number of offsetting changes are made for 2023/24 oats ending stocks. A decrease in ending stocks of 0.1 million tons for **Australia** is offset by a 0.1-million-ton increase for **Canada**. Several other fractional changes are also made to leave global oats ending stocks fractionally lower.

For a visual display of this month's country changes in corn ending stocks, see map B below.

Map B – Corn ending stocks changes for 2023/24, September 2023



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

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