



# Wheat Outlook: October 2022

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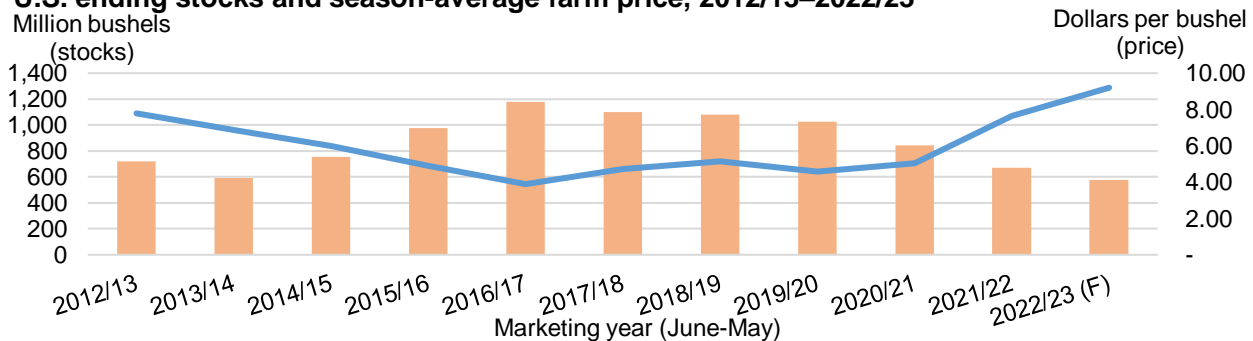
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## U.S. Wheat Ending Stocks Tightening and Price Forecast at Record-High

U.S. wheat ending stocks for 2022/23 are forecast down 34 million bushels this month to 576 million bushels, which would be the smallest in 15 years. This lower stock level is driven by smaller production as reported in the USDA, National Agricultural Statistics Service *Small Grains Summary* report. The U.S. wheat crop is now estimated at 1.650 billion bushels, down 133 million from last month. This is only slightly up from last year and is the second lowest in 20 years. Higher estimated beginning stocks and larger projected imports offset only a small part of the crop reduction. With supplies tight and prices historically high, projected exports and feed and residual are both lowered. Futures prices have surged in recent weeks in response to both tight U.S. supplies and international uncertainty about the continuity of Black Sea wheat shipments. Consequent to these factors, the projected U.S. season-average farm price, which was already record high, is further raised \$0.20 this month to \$9.20.

Figure 1  
**U.S. ending stocks and season-average farm price, 2012/13–2022/23**



(F) denotes a forecast.

U.S. ending stocks U.S. season-average farm price

Source: USDA, National Agricultural Statistics Service; USDA, World Agricultural Outlook Board.

# Domestic Outlook

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## Domestic Changes at a Glance:

- The 2022/23 U.S. wheat production estimate is lowered 133 million bushels to 1.650 billion bushels based on updated data from the USDA, National Agricultural Statistics Service (NASS) September 30 *Small Grains Annual Summary*. This report showed lower area for all five classes of wheat, with yield down for all but Durum.
  - Hard Red Winter (HRW) wheat is projected down 45 million bushels to 531 million, which is down 29 percent from last year and the smallest crop since 1957/58.
  - Soft Red Winter (SRW) is forecast down 45 million bushels to 337 million, down 7 percent from the previous year, but still the second-largest crop since 2016/17.
  - Hard Red Spring (HRS) is reduced 17 million bushels to 446 million, but is still up 50 percent from last year's drought-stricken crop.
  - White wheat is lowered 17 million bushels to 272 million, a 36-percent increase year-over-year.
  - Durum is lowered 10 million bushels to 64 million based on lower area, which more than offsets the impact of marginally higher yield.
- U.S. all-wheat feed and residual for 2022/23 is forecast 30 million bushels lower at 50 million. Feed and residual use for both HRW and SRW are reduced 10 million bushels to 10 million and 40 million, respectively. White and Durum are each down 5 million bushels to -5 million bushels, while HRS is projected to remain at 10 million bushels.
- The smaller feed and residual is related to the reduced size of the U.S. crop as well as a lower-than-expected pace of domestic use during the first quarter of the June-May marketing year. Based on the latest *Grain Stocks* report published by USDA, NASS, U.S. all-wheat stocks as of September 1 are estimated at 1.776 million bushels, which implies total domestic disappearance during the June through August quarter at 365 million bushels, which would be the smallest since 1983/84. The continued high price of U.S. wheat relative to feed grains (especially corn) is a further reason for the smaller feed and residual use. USDA will provide updated food and seed use estimates in the November *World Agricultural Supply and Demand Estimates (WASDE)* report following the release of the USDA, NASS *Flour Milling Products* report.
- 2022/23 wheat exports are reduced 50 million bushels from the previous month to 775 million bushels on uncompetitive prices and a slow pace of new sales, as reported in the

USDA, Foreign Agricultural Service (FAS) in its *U.S. Export Sales* report (details in later section). With consideration of export pace and competitiveness of each class, the by-class exports are now projected as follows:

- HRW exports are down 25 million bushels to 220 million.
  - HRS exports are lowered 10 million bushels to 225 million.
  - White exports are reduced 10 million bushels to 170 million.
  - Durum exports are trimmed 5 million bushels to 25 million.
  - SRW exports remain at 135 million bushels.
- U.S. wheat exports for June through August 2022 reached a total of 211 million bushels, down 16 percent from the same period last year. Official U.S. wheat trade statistics for June through August are calculated based on data from the U.S. Department of Commerce, Bureau of the Census. However, September exports are likely to be stronger based on export inspections data from the USDA, Federal Grain Inspections Service (FGIS) as well as export sales data reported by USDA, FAS.
  - U.S. wheat imports are raised 10 million bushels at 120 million, up from 95 million in 2021/22. U.S. wheat imports for June through August 2022 totaled 33 million bushels, up 31 percent from the same period last year. The full import increase is allocated to HRS, which is now projected at 60 million bushels (table 1). Trade to-date is now on pace with the revised import projection.
  - The 2022/23 season-average farm price (SAFP) is projected at a record \$9.20 per bushel, up \$0.20 from last month. Futures markets have risen substantially in recent weeks in volatile trading, underpinned by uncertainty regarding the continuity of shipments from the Black Sea region. The August farm price reported in the USDA, NASS *Agricultural Prices* publication was \$8.55, down from \$8.69 in the previous month and higher than \$7.14 in August 2021.
  - Table 2 presents details for the U.S. all-wheat supply and distribution.

Table 1						
<b>Pace of imports of all-wheat grain and products (1,000 bushels)</b>						
Marketing year	June–August imports				Marketing year imports	Percent of total
	Grain	Flour	Products	Total		
3-year avg 1/	20,830	4,324	6,105	31,259	112,868	28
2021/22	15,778	4,050	5,413	25,242	95,227	27
2022/23	19,999	5,748	7,209	32,957	120,000	27

1/ Average of 2018/19–2020/21.  
Sources: USDA, Economic Research Service calculations; U.S. Department of Commerce, U.S. Census Bureau.

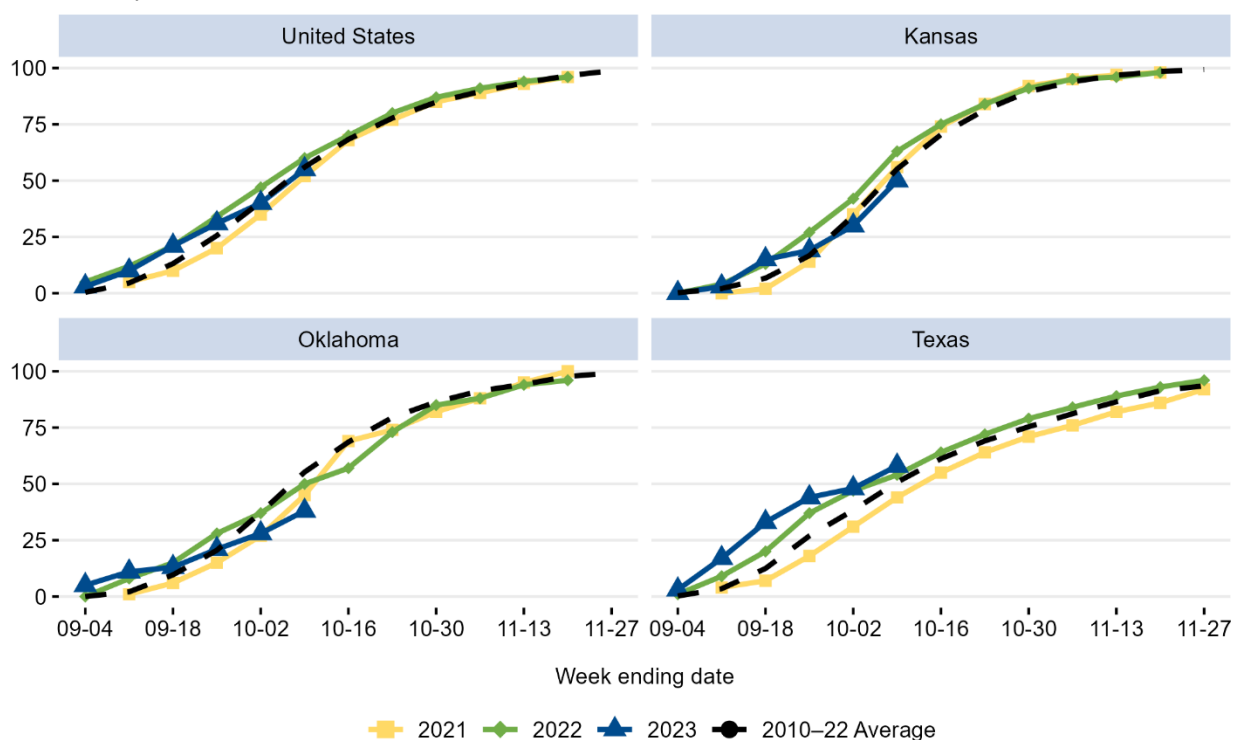
**Table 2**  
**U.S. wheat supply and use at a glance 2022/23 (in million bushels)**

Balance sheet item	2021/22 October	2022/23 September	2022/23 October	Month-to-month change	Comments
<b>Supply</b>					<b>June-May marketing year</b>
Beginning stocks	845	660	669	+9	Updated stocks data from USDA, National Agricultural Statistics Service (NASS).
Production	1,646	1,783	1,650	-133	Revised production data from USDA, NASS showing lower production for all five classes
Imports	95	110	120	+10	Strong pace in recent months and tighter domestic supplies
Supply, total	2,587	2,553	2,439	-114	
<b>Demand</b>					
Food	972	970	970	0	
Seed	60	68	68	0	
Feed and residual	86	80	50	-30	Smaller domestic supplies, low first quarter implied disappearance, and high prices for wheat relative to other feed grains
Domestic, total	1,117	1,118	1,088	-30	
Exports	800	825	775	-50	U.S. exports uncompetitively priced with key suppliers and sales lagging pace
Use, total	1,917	1,943	1,863	-80	
Ending stocks	669	610	576	-34	Smallest ending stocks since 2007/08
Season-average farm price	\$7.63	\$9.00	\$9.20	+\$0.20	Rising futures prices and tighter domestic supplies
Source: USDA, World Agricultural Outlook Board, <i>World Agricultural Supply and Demand Estimates</i> .					

## 2023/24 Winter Wheat Planting Underway

According to the USDA, NASS *Crop Progress* report, 55 percent of U.S. winter wheat has been planted as of October 9, 2022. This is slightly behind last year and the 5-year average (both 58 percent). Key HRW-producing States Kansas and Oklahoma are slightly behind an average planting pace, while Texas is slightly ahead (figure 2). Producers face several factors in deciding how much acreage to plant. While high wheat prices provide some incentive to expand plantings, producers also face elevated prices for alternative crops and high input costs.

Figure 2  
**Winter wheat percent planted, by State and week**  
 Percent complete



Source: USDA, Economic Research Service; USDA, National Agricultural Statistics Service.

Another factor looming large in the consideration of planted acreage is the ongoing drought. As of October 11, approximately 66 percent of U.S. winter wheat areas are in drought (figure 3), well above 42 percent at the same time last year. This drought is particularly centered in the primary HRW-producing States of Kansas, Oklahoma, and Texas. Production in these areas was already affected by significant drought during the 2022/23 marketing year, and these conditions continue during planting of the 2023/24 crop. The USDA, NASS *Crop Progress* data so far suggests that producers have been willing to plant in spite of dry conditions.

Planting is also slightly behind schedule in some Eastern growing areas where SRW is planted. For instance, winter wheat in Illinois is 16 percent complete (5-year average 29 percent), while planting in Indiana is 27 percent complete (33 percent average) and Ohio is 37 percent done (48 percent average). One factor influencing planting in some of these States is that SRW wheat is sometimes planted after soybeans. This year, soybean harvest in several of those States is slightly behind an average pace, which has contributed to some delays in planting wheat.

Figure 3

### Large portions of winter wheat area in drought

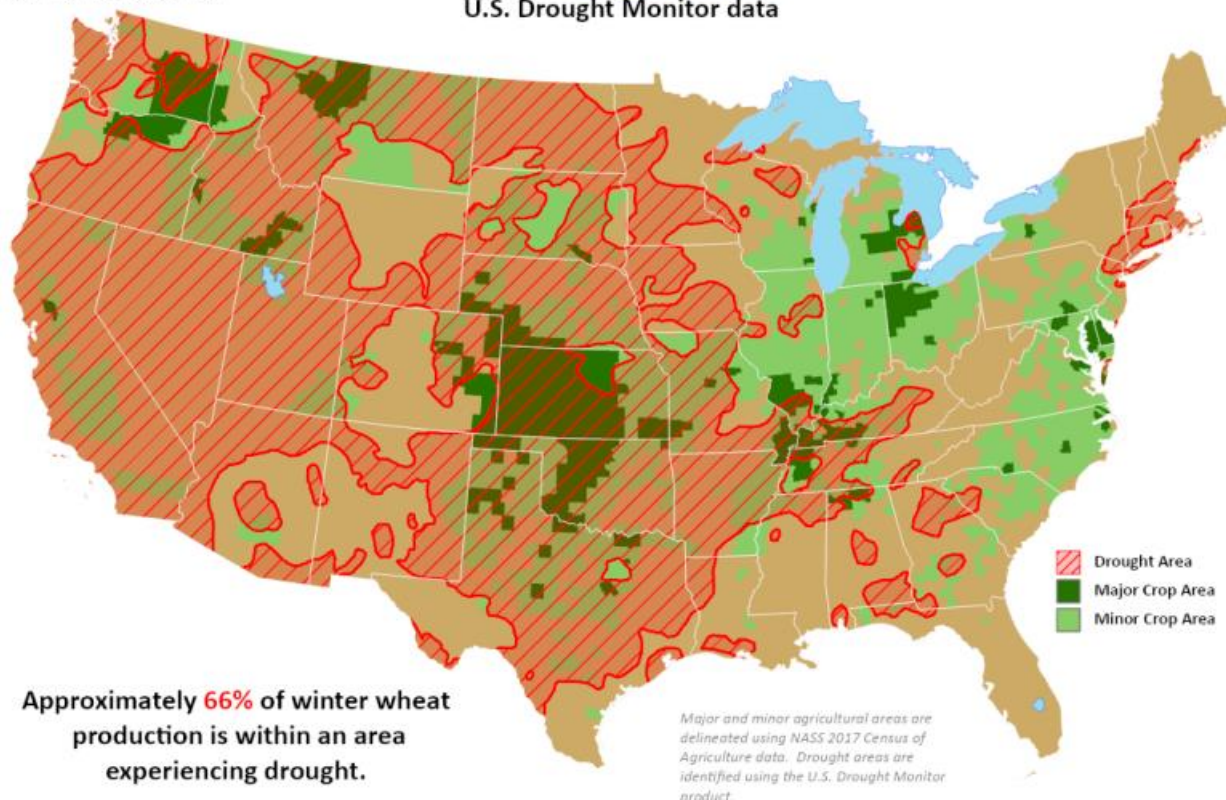


This product was prepared by the  
USDA Office of the Chief Economist (OCE)  
World Agricultural Outlook Board (WAOB)

## Winter Wheat Areas in Drought

Reflects **October 11, 2022**

U.S. Drought Monitor data



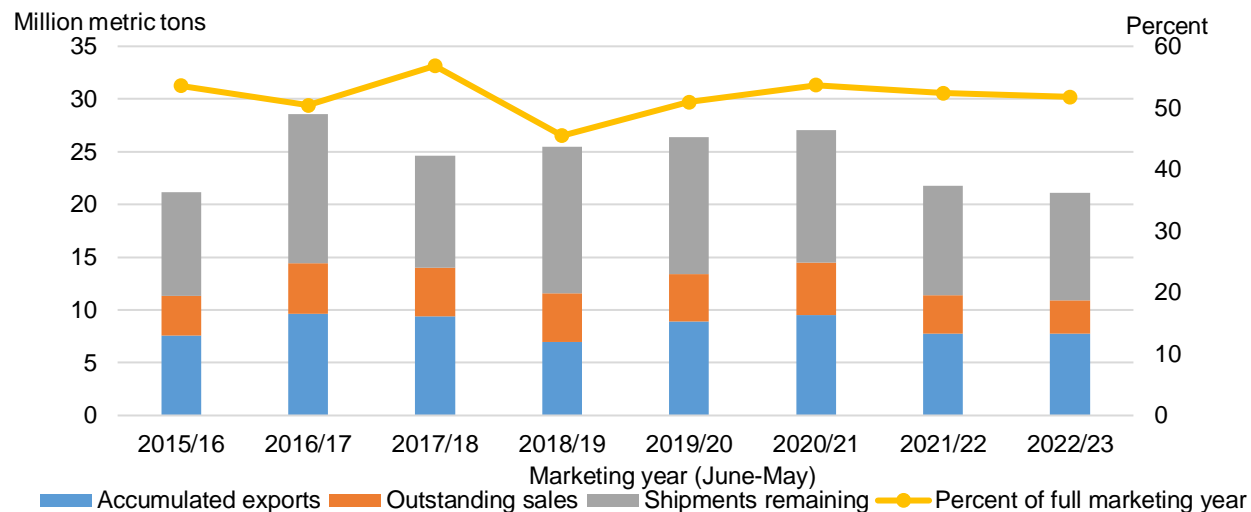
Notes: This product was prepared by the USDA, Office of the Chief Economist (OCE), World Agricultural Outlook Board (WAOB). Major and minor agricultural areas are delineated using National Agricultural Statistics Service (NASS) 2017 Census of Agriculture data. Drought areas are identified using the U.S. Drought Monitor product.  
Source: USDA, World Agricultural Outlook Board, Agricultural Weather and Assessments Group.

## U.S. Export Projection Reduced Substantially

U.S. exports are reduced on a slow pace of export sales and uncompetitive pricing. U.S. export sales, as reported in the USDA, FAS *U.S. Export Sales* report, show that U.S. exports are running behind last year's pace. Total U.S. commitments (the sum of accumulated exports and outstanding sales) are 10.9 million metric tons (MMT) as of September 29, 4 percent behind the same week last year. The full marketing year export forecast, now reduced 50 million bushels to 775, is 3 percent below the full year total for 2021/22. Total commitments to date now represent 52 percent of the revised marketing year projection (figure 4), which is on par with the average of the most recent 5 years. While the volume of accumulated exports is similar to this point last year, outstanding commitments are 14 percent lower. Sales were particularly slow during the month of September, primarily due to significantly smaller HRW sales.



Figure 4  
**Cumulative exports sales through September 29 and full marketing year exports**



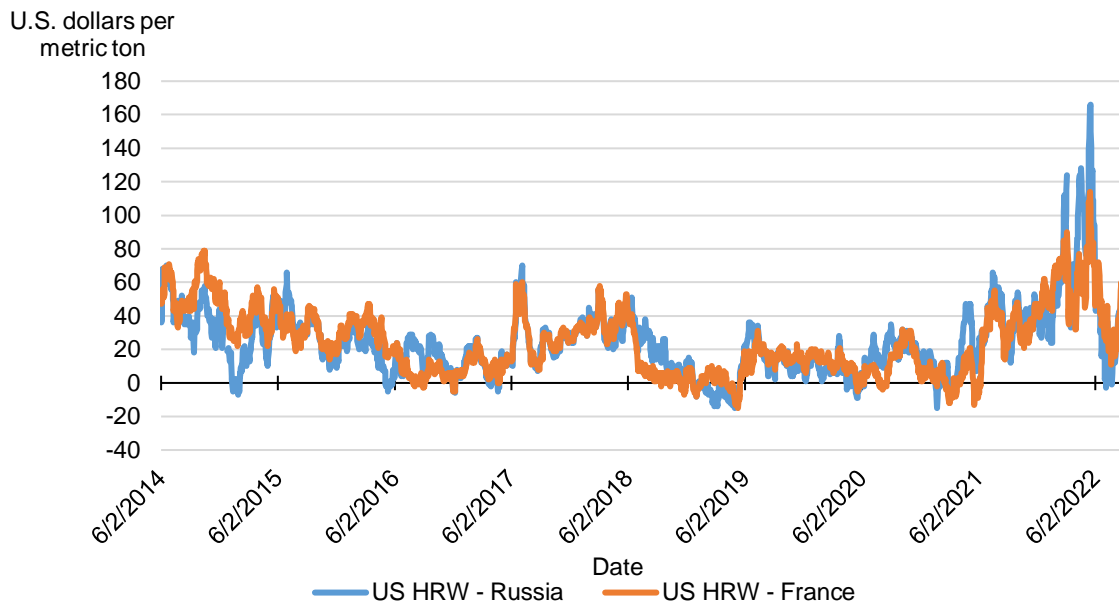
Notes: Accumulated exports and outstanding sales are as of week 18, exact dates vary by year. Shipments remaining is the difference between total commitments as of that date and the full marketing year exports.

Source: USDA, Economic Research Service calculations; USDA, Foreign Agricultural Service, Export Sales Reporting.

Pricing with key competitors also poses a challenge as U.S. quotes remain elevated well above other major exporters. The small size of the U.S. crop, rising barge rates and logistical challenges, and the ongoing strength of the U.S. dollar are continued headwinds to U.S. competitiveness in international wheat markets. In analyzing the pace chart above, note that in figure 4, the only years with a lower percentage of export sales accounted for at this point in the year were 2016/17 and 2018/19. In both of those seasons, U.S. HRW exports were priced more competitively with other key exporters such as Russia and France (figure 5). With U.S. export sales already behind on pace, the uncompetitive pricing of U.S. supplies makes it more difficult to assume an increase in future sales. See the latest USDA, FAS *Grain: World Markets and Trade* publication for further details on U.S. pricing with key competitors.

Figure 5

**Price spread between U.S. Hard Red Winter and key competitors**



HRW = Hard Red Winter.

Notes: This chart depicts the freight-on-board (FOB) price difference between U.S. HRW and Russian wheat. The quotes utilized are U.S. Hard Red Winter, 11.5 percent protein, Gulf of Mexico; Black Sea 11.5 percent protein; and France, Grade 1, Rouen. Quotes are daily.

Source: USDA, Economic Research Service calculations using data from the International Grains Council.

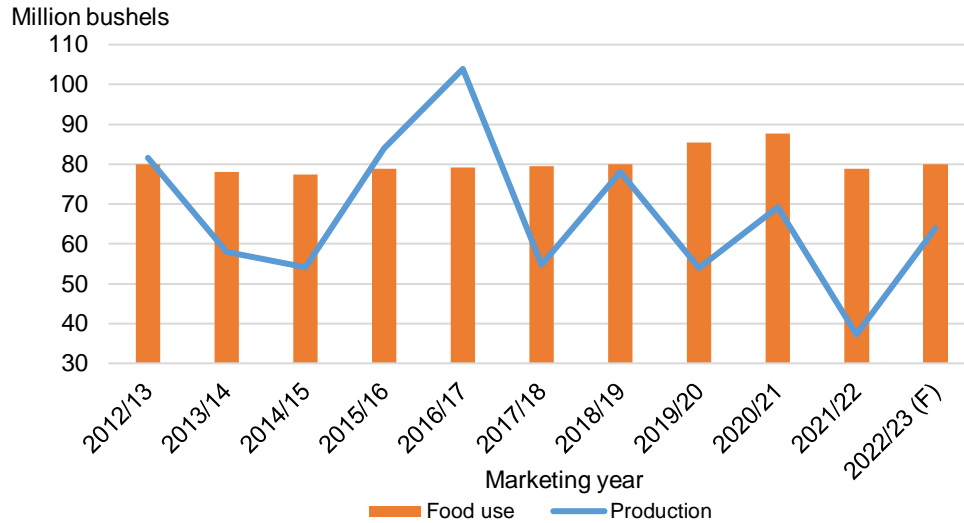
## Durum Crop Lowered, But Still Up From Last Year

U.S. production of Durum—the primary class of wheat used to produce pasta—is lowered 13 percent from the previous month’s estimate based on updated data from USDA, NASS. However, the crop is still dramatically larger than last year’s drought-stricken crop, which was the lowest since 1961/62. Production in 2022/23 is forecast at 64 million bushels, up 70 percent from the previous marketing year (2021/22) and slightly above the recent 5-year average (2017/18–2021/22). Durum used for food in the 2022/23 marketing year is estimated at 80 million bushels, close to the historical average and slightly above 2021/22 (figure 6). Durum for food use was elevated in marketing years 2019/20 and 2020/21, fueled by surging consumer demand during the Coronavirus (COVID-19) pandemic, when shoppers stocked up on pasta while in quarantine. While the surge in demand has since subsided, consumer prices for wheat-based products, including pasta, are up substantially in 2022. This year’s larger Durum crop and larger Canadian production has eased some supply pressure; however, high



commodity prices and elevated input, labor, and energy costs have each contributed to higher prices for the manufactured products of wheat, including pasta. The United States imports and exports durum every year, with imports typically larger. Net imports rise in years when production is tighter.

Figure 6  
**U.S. durum production and food use**



Note: (F) denotes a forecast.  
 Source: USDA, Economic Research Service.

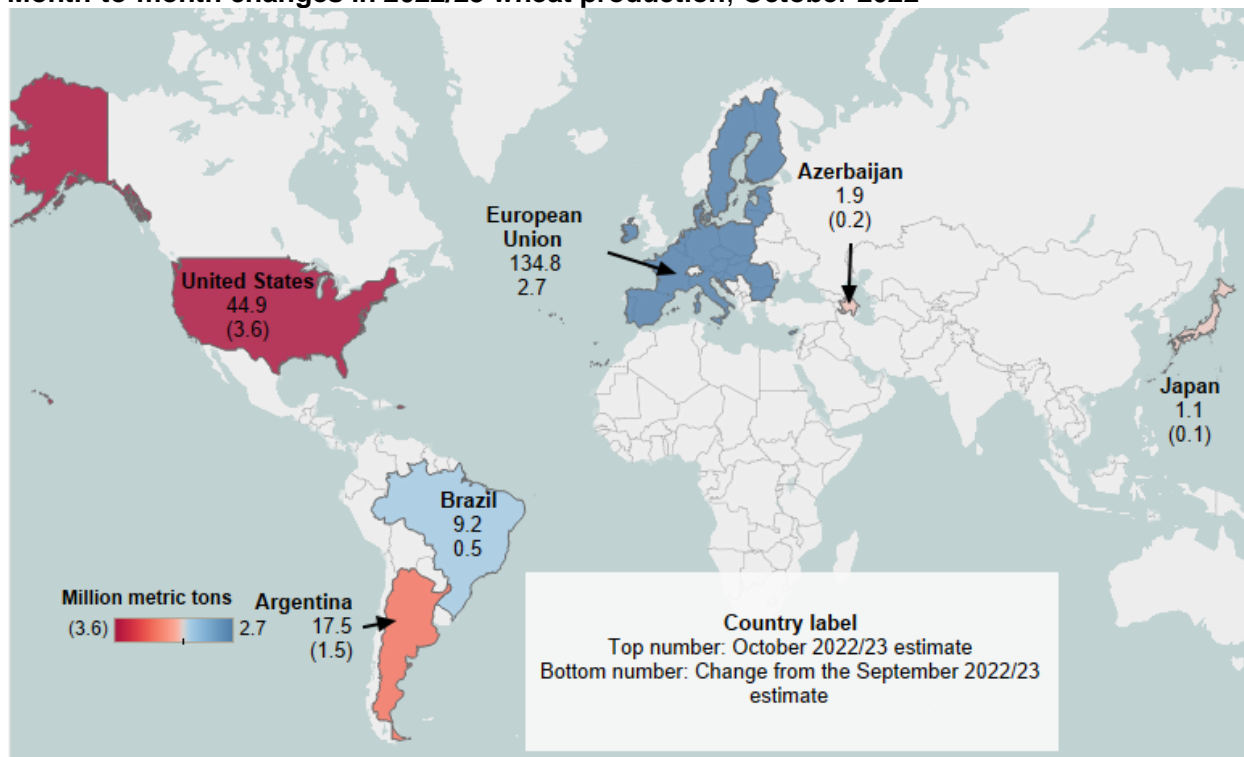
# International Outlook

## Global Production Remains a Record Despite Decline

Global wheat production in 2022/23 is revised down 2.2 million metric tons (MMT) to 781.7 MMT as a higher projected production for the **European Union** is not able to overcome lower crops for the **United States** and **Argentina**. Production in **France**, **Germany**, **Poland**, and **Slovakia** were revised higher based on higher-than-expected yields and larger area harvested. Production for the United States was cut 3.6 MMT based on the September 30 *Small Grains Summary* report from USDA, NASS. Argentina continues to experience dry conditions during key development phases resulting in a slight decrease in yields and a larger reduction area harvested on projected larger abandonment (-0.3 million hectares to 5.8 million). **Brazil** production is revised up 0.5 MMT to 9.2 MMT as yields are better than anticipated (+0.25 metric ton/hectare to 2.97). Other production changes are displayed in figure 7.

Figure 7

### Month-to-month changes in 2022/23 wheat production, October 2022



Note: Changes less than 100,000 metric tons are not included.

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

## 2022/23 Global Consumption Projected Down From 2021/22

2022/23 global consumption is revised down 0.6 MMT to 785.7 MMT driven by a decline in food, seed, and industrial use (-0.9 MMT to 630.2 MMT). Partially offsetting this reduction is an upward revision in feed and residual use (+0.3 MMT to 155.5 MMT). The European Union continues to have a disastrous corn crop, and wheat remains competitive as a feed ration, resulting in higher feed and residual use (+1.0 MMT to 45.0 MMT). U.S. production was cut significantly, resulting in less availability of feed quality wheat (-0.8 MMT to 1.4 MMT).

To match the *WASDE* estimate, consumption is adjusted based on the local marketing year (MY) trade adjustments for 2022/23. Unaccounted trade is revised down 0.3 MMT to 4.5 MMT as MY exports are reduced more than MY imports. This results in an adjusted consumption of 790.2 MMT, down 0.8 MMT from the September estimate.

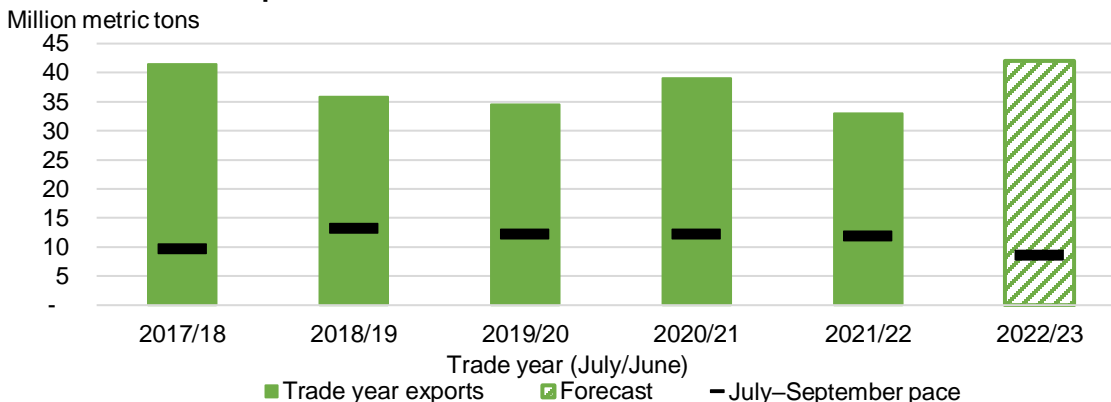
## Global 2022/23 Trade is Lowered but Remains Record

2022/23 trade year (July/June) exports and imports remain at a record, but imports and exports are both lowered this month. Trade year (TY) exports are revised down 0.7 MMT to 207.7 MMT with cuts for the **United States** and **Argentina** offsetting an upward revision for the **European Union**. Lower domestic production and uncompetitive prices result in a decline for both the United States and Argentina, while higher forecasted production for the European Union allows for more exportable supplies. For more information on Argentina see this month's *Grain: World Markets and Trade* by the USDA, Foreign Agricultural Service.

While the pace of exports for Russia has started off slowly, the country's estimate remains unchanged at a record 42.0 MMT. In the 2017/18 TY, Russia's pace also started off slow, but was able to recover with a fast pace of shipments late in the TY (figure 8). The floating export tax has also decreased to about \$31 per metric ton, the lowest level since June 2021, providing additional relief. In the past three years, Russia has placed an export quota in the latter half of the TY to secure domestic supplies. The 2017/18 TY showcases that without an export quota in place, the country can meet the export projection given the record domestic production in 2022/23 (91.0 MMT).

Figure 8

### Pace of Russian exports from 2017/18–2022/23



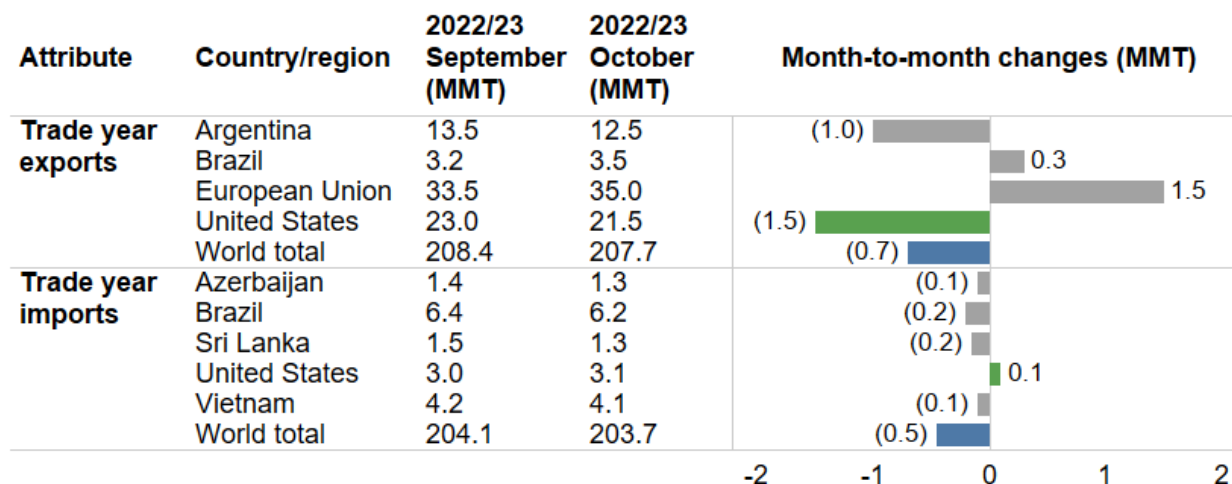
Notes: Data for 2017/18 through 2021/22 is calculated using official trade data; 2022/23 depicts estimated pace with vessel loading data as of October 6, 2022.

Sources: USDA, Economic Research Service calculations using data from USDA, World Agricultural Outlook Board, Trade Data Monitor, and Reuters Refinitiv Eikon.

2022/23 TY imports are reduced 0.5 MMT to 203.7 MMT. Higher domestic production for **Brazil** and **Azerbaijan** and high prices will decrease the countries' desire to import this year. Brazil primarily imports from Argentina, and Argentina is experiencing drought concerns that will limit its ability to export. **Sri Lanka's** imports are also lowered as high prices and current economic conditions limit its ability to import. Food, seed, and industrial use in **Vietnam** is projected lower, based on reduced flour milling, resulting in a decreased need for imports. Figure 9 shows all trade changes for the 2022/23 trade year.

Figure 9

### Month-to-month change in 2022/23 wheat trade, October 2022



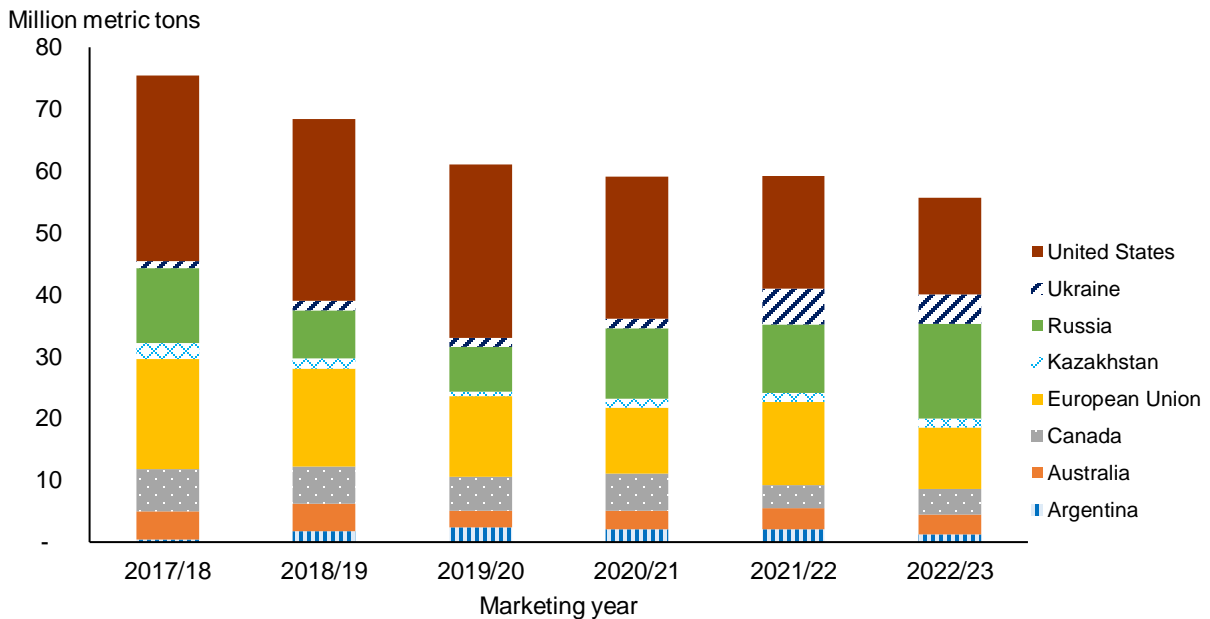
Notes: MMT = million metric tons; changes less than 100,000 metric tons are not included; month-to-month change is the difference between October 2022 and September 2022 estimates.

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

## 2022/23 Global Ending Stocks Lowered

2022/23 global ending stocks are lowered 1.0 MMT to 267.5 MMT with cuts for the **United States** (-0.9 MMT to 15.7 MMT) and **Argentina** (-0.2 MMT to 1.3 MMT) partially offset with an increase for the **European Union** (+0.4 MMT to 9.9 MMT). Major exporters' ending stocks are revised down 0.7 MMT to 55.7 MMT, the lowest since 2012/13 (figure 10). The majority of the major exporters' ending stocks are held within the United States (28.1 percent) and **Russia** (27.6 percent). With lower production compared with 2021/22, the European Union holds 9.9 MMT in stocks, down 3.5 MMT from 2021/22, and accounts for 17.8 percent of the major exporters' ending stocks. Argentina is projected to have the lowest stocks since 2017/18 at 1.3 MMT and accounts for only 2.3 percent of major exporters' ending stocks. **Australia's**, **Canada's**, **Kazakhstan's**, and **Ukraine's** endings stocks remain unchanged from the previous month and account for a total of 24.1 percent.

Figure 10  
**Major exporters' ending stocks, 2017/18 to 2022/23**



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

# Special Article: Wheat By-Class Trade Estimation Methods

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The USDA wheat Interagency Commodity Estimates Committee (ICEC) is comprised of members from the USDA World Agricultural Outlook Board, Foreign Agricultural Service, Farm Service Agency, and Economic Research Service (ERS). The Food Grain chairperson, along with WAOB leadership, approves monthly wheat supply and demand forecasts proposed by the ICEC committee for major countries, as well as a price estimate for the United States. The chairman also approves the all-wheat supply and demand estimates that are presented in the wheat balance sheet published in the *World Agricultural Supply and Demand Estimate (WASDE)* monthly report as well as separate balance sheets for each of five classes of wheat: Hard Red Winter (HRW), Hard Red Spring (HRS), Soft Red Winter (SRW), White wheat (WW), and Durum.

Harmonized Tariff Schedule (HTS)<sup>1</sup> codes provided by the U.S. Department of Commerce, Bureau of the Census are not uniformly reported by class outside of Durum, making it necessary to develop methods to convert the all-wheat data into by-class wheat data that are appropriate for inclusion in the associated balance sheets. This special article summarizes and gives examples of methods for estimating by-class wheat imports and exports. This feature article is an updated version of an article published in the April 2019 *Wheat Outlook* publication. This provides updates such as new import HTS codes added in January 2022 as well as additional details on export calculation methodology.

## Converting Census Bureau Data to Grain-Equivalent Bushels

The monthly estimates of U.S. wheat exports and imports are each the sum of associated wheat grain, wheat flour, and selected wheat products. The flour and wheat products include both food and animal feed items. The Census Bureau trade data for grain, flour, and selected products are reported in metric tons (grain imports and exports) or kilograms (flour and products). Volume data for flour and selected products are converted to grain-equivalent kilograms—i.e., the

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<sup>1</sup> Harmonized Tariff Schedule refers to trade codes that are up to 10-digits in length and are specific to U.S. imports. Exports at this level of detail are officially designated as “Schedule B,” but for the purposes of this article, detailed trade codes for both imports and exports will be referenced as HTS codes. These country-specific trade codes are derived from the 6-digit internationally standardized “Harmonized System” or “HS” codes.



quantity of wheat grain that would have to be milled to produce 1 kilogram of that flour or wheat product. Then, the grain and grain-equivalent data are converted to bushels. See table 1 for more details on the calculation of wheat imports and table 2 for details on the calculation of wheat exports.

Categories and HTS codes 1/	Description	Unit	Grain-equivalent factor	Pounds per kilogram	Pounds per bushel
<b>Grain</b>	All wheat grain codes, including seeds 2/	kilogram	1	2.204622	60
<b>Flour</b>					
1101000010	Hard spring wheat flour	kilogram	1.36986	2.204622	60
1101000020	Durum wheat flour	kilogram	1.72414	2.204622	60
1101000030	White winter wheat flour	kilogram	1.36986	2.204622	60
1101000050	Wheat or meslin flour, certified organic	kilogram	1.36986	2.204622	60
1101000060	Wheat or meslin flour, not elsewhere specified	kilogram	1.36986	2.204622	60
1103110020	Groats and meal of wheat, semolina	kilogram	1.72414	2.204622	60
1103110040	Groats and meal of wheat, not elsewhere specified	kilogram	1.01010	2.204622	60
<b>Products</b>					
1103200010	Wheat pellets 3/	kilogram	1.92308	2.204622	60
1902112010	Pasta with eggs 3/	kilogram	1.33200	2.204622	60
1902112020	Pasta with eggs 3/	kilogram	1.33200	2.204622	60
1902112030	Pasta with eggs 3/	kilogram	1.33200	2.204622	60
1902112090	Pasta with eggs 3/	kilogram	1.33200	2.204622	60
1902114000	Pasta with eggs and sauce 3/	kilogram	1.33200	2.204622	60
1902192010	Pasta without eggs 3/	kilogram	1.42200	2.204622	60
1902192020	Pasta without eggs 3/	kilogram	1.42200	2.204622	60
1902192030	Pasta without eggs 3/	kilogram	1.42200	2.204622	60
1902192090	Pasta without eggs 3/	kilogram	1.42200	2.204622	60
1902194000	Pasta without eggs, but with sauce 3/	kilogram	1.42200	2.204622	60
1902400000	Couscous 3/	kilogram	1.01010	2.204622	60
1904300000	Bulgur 3/	kilogram	1.01010	2.204622	60

1/ HTS = Harmonized Tariff Schedule.  
2/ A detailed accounting of the grain import codes is shown in table 3.  
3/ Simplified explanation of the code; a full description is shown in table 4.  
Sources: USDA, Economic Research Service; U.S. Department of Commerce, Bureau of the Census.

Below is an example calculation converting 1.0 million kilograms of Hard spring wheat flour (HTS code 1001000010) to grain-equivalent bushels:

**Step 1.** Converting kilograms of flour to grain-equivalent kilograms:

1,000,000 kilograms of flour × 1.36986 = 1,369,860 grain equivalent kilograms.

**Step 2.** Converting grain-equivalent kilograms to grain-equivalent pounds:

1,369,860 kilograms × 2.204622 pounds/kilogram = 3,020,023.493 pounds.

**Step 3.** Converting grain-equivalent pounds to grain-equivalent bushels:

3,020,023.493 pounds × 1 bushel/60 pounds = 50,334 bushels.

Categories and HTS codes 1/	Description	Unit	Grain equivalent factor	Pounds per kilogram	Pounds per bushel
<b>Grain</b>					
1001110000	Durum wheat seed	kilogram	1	2.204622	60
1001190000	Durum wheat, other than seed	kilogram	1	2.204622	60
1001910000	Wheat seed (except Durum)	kilogram	1	2.204622	60
1001992015	White wheat (except seed)	kilogram	1	2.204622	60
1001992055	Wheat and meslin, not elsewhere specified	kilogram	1	2.204622	60
<b>Flour</b>					
1101000000	Wheat or meslin flour	kilogram	1.36986	2.204622	60
1103110020	Groats and meal of wheat, semolina	kilogram	1.72414	2.204622	60
1103110040	Groats and meal of wheat, not elsewhere specified	kilogram	1.0101	2.204622	60
<b>Products</b>					
1103200010	Pellets of wheat	kilogram	1.92308	2.204622	60
1902112000	Pasta with eggs, but no sauce	kilogram	1.332	2.204622	60
1902114000	Pasta with eggs and sauce	kilogram	1.332	2.204622	60
1902192000	Pasta without eggs or sauce	kilogram	1.422	2.204622	60
1902194000	Pasta without eggs, but with sauce	kilogram	1.422	2.204622	60
1902400000	Couscous	kilogram	1.0101	2.204622	60
1904300000	Bulgur	kilogram	1.0101	2.204622	60

1/ HTS = Harmonized Tariff Schedule. Officially, export codes at this level are designated as "Schedule B".  
Notes: This table contains the export HTS codes currently in use. For previously used codes, see the April 2019 *Wheat Outlook*. "Not elsewhere specified" or "not elsewhere specified or indicated" (NESOI). Specific definition varies by context of the code.  
Sources: USDA, Economic Research Service; U.S. Department of Commerce, Bureau of the Census.

## Estimating By-Class Wheat Imports

Wheat and wheat-product imports are allocated by Census Bureau category (HTS code) across the five classes using a fixed set of proportions (table 3). These proportions by category were developed by USDA, ERS in consultation with industry representatives. For example, the allocation of imports of bulgur (HTS code 1904300000) is made after converting the import data to grain-equivalent bushels. Then, 25 percent of these bushels are allocated to the HRW wheat class and 75 percent to the HRS wheat class.

Table 3 <b>Wheat grain import trade codes: description and weights by class</b>						
HTS code	Commodity description	HRW	HRS	SRW	White	Durum
<i>Grain</i>						
1001110000	Durum wheat seed					1
1001190025	Durum wheat, certified organic, except seed					1
1001190051	Durum wheat, grade 1, other than seed or certified organic					1
1001190053	Durum wheat, grade 2, other than seed, other than certified organic					1
1001190069	Durum wheat, other than certified organic, except seed, not elsewhere specified					1
1001910000	Wheat and meslin seed (except Durum)	0.25	0.5	0	0.25	
1001990005	Canadian western extra strong hard red spring (CWEA/HRS) wheat*		1			
1001990007	Red spring wheat, certified organic		1			
1001990009	Wheat or meslin, certified organic, except seed, not elsewhere specified		0.75	0.25		
1001990010	Red spring wheat, grade 1, having a specified protein content not exceeding 12.9 percent by weight, except seed, not elsewhere specified		1			
1001990017	Red spring wheat, grade 1, having a specified protein content exceeding 12.9 percent, but not exceeding 13.9 percent by weight, except seed, not elsewhere specified		1			
1001990018	Red spring wheat, grade 1, having a specified protein content exceeding 13.9 percent by weight, except seed, not elsewhere specified		1			
1001990027	Red spring wheat, grade 2, having specified protein content not exceeding 12.9 percent by weight, except seed, not elsewhere specified		1			
1001990030	Red spring wheat, grade 2, having a specified protein content exceeding 12.9 percent, but not exceeding 13.9 percent by weight, except seed, not elsewhere specified		1			
1001990033	Red spring wheat, grade 2, having a specified protein content exceeding 13.9 percent by weight, except seed, not elsewhere specified		1			
1001990036	Red spring wheat, except seed, not elsewhere specified		1			
1001990045	White winter wheat, except seed, not elsewhere specified				1	
1001990055	Canadian western red winter wheat, except seed, not elsewhere specified	1				
1001990065	Soft white spring wheat, except seed, not elsewhere specified				1	
1001990097	Wheat or meslin, except seed, not elsewhere specified		0.75	0.25		

HTS = Harmonized Tariff Schedule; HRW = Hard Red Winter; HRS = Hard Red Spring; SRW = Soft Red Winter.  
Notes: "Not elsewhere specified" or "not elsewhere specified or indicated" (NESOI). Specific definition varies by context of the code.  
This table displays the wheat grain HTS codes currently in use. To access by-class allocation data for previously used codes, see the April 2019 *Wheat Outlook*.  
Source: USDA, Economic Research Service; U.S. Department of Commerce, Bureau of the Census.

Table 4

**Wheat flour and product import trade codes: description and weights by class***Flour*

HTS code	Commodity description	HRW	HRS	SRW	White	Durum
1101000010	Hard spring wheat flour		1			
1101000020	Durum wheat flour					1
1101000030	White winter wheat flour				1	
1101000050	Wheat or meslin flour, certified organic	1				
1101000060	Wheat or meslin flour, not elsewhere specified		1			
1103110020	Groats and meal of wheat, semolina					1
1103110040	Groats and meal of wheat, not elsewhere specified		1			

*Products*

1103200010	Pellets of wheat		1			
1902112010	Pasta, uncooked, not stuffed, containing eggs, product of a European Union country, subject to the inward processing regime (IPR)				1	
1902112020	Pasta, uncooked, not stuffed, containing eggs, product of a European Union country, subject to the European Union reduced export refund				1	
1902112030	Pasta, uncooked, not stuffed, containing eggs, other, product of a European union country				1	
1902112090	Pasta, uncooked, not stuffed, containing eggs, product of a country other than a European Union country				1	
1902114000	Pasta with egg, not elsewhere specified sauce not stuffed or otherwise prepped				1	
1902192010	Pasta, uncooked, not stuffed, no eggs, product of a European Union country, subject to the inward processing regime				0.2	0.8
1902192020	Pasta, uncooked, not stuffed, no eggs, product of a European Union country subject to the reduced export refund				0.2	0.8
1902192030	Pasta, uncooked, not stuffed, no eggs, other, product of a European Union country				0.2	0.8
1902192090	Pasta, uncooked, not stuffed, no eggs, product of a country other than a European Union country				0.2	0.8
1902194000	Pasta no egg not elsewhere specified incl sauce not stuffed or otherwise prepped				0.2	0.8
1902400000	Couscous, whether or not prepared					1
1904300000	Bulgur wheat, pre-cooked or otherwise prepared	0.25	0.75			

HTS = Harmonized Tariff Schedule; HRW = Hard Red Winter; HRS = Hard Red Spring; SRW = Soft Red Winter.

Notes: "Not elsewhere specified" or "not elsewhere specified or indicated" (NESOI). Specific definition varies by context of the code. This table displays the wheat flour and product HTS codes currently in use. To access by-class allocation data for previously used codes, see the April 2019 *Wheat Outlook*.

Sources: USDA, Economic Research Service; U.S. Department of Commerce, Bureau of the Census.

## Estimating By-Class Wheat Exports

Wheat exports are calculated differently than imports. Census Bureau export data is less detailed than import data, necessitating the use of proportional weights to determine wheat by-class exports for non-Durum wheat. Detailed export codes are available for Durum; therefore, the grain and product export allocations for this class are taken directly from the converted Census Bureau data. The following export codes are fully allocated to Durum: 1001100010, 1001100090, 1103110020, 1902192000, 1902194000, and 1902400000. Below is an example of the methodology used to allocate non-Durum exports by class:

**Step 1.** Sum all the Census non-Durum grain and converted non-Durum flour and products (in grain-equivalent bushels). For example: 242 million bushels of non-durum grain + 6 million grain-equivalent bushels of non-Durum flour + 2 million grain-equivalent bushels of non-Durum products = 250 million bushels.

**Step 2.** Sum export sales and donations for the four non-Durum classes and then calculate the proportion each class composes of this total.

Non-Durum class	Export sales and donations	Share of 234 million bushels
Hard Red Winter	120 million bushels	51 percent
Hard Red Spring	56 million bushels	24 percent
Soft Red Winter	30 million bushels	13 percent
White	28 million bushels	12 percent
Total	234 million bushels	100 percent

**Step 3.** Multiply the sum from Step 1 by the proportions calculated in Step 2 to estimate the bushels exported for each of the four classes of wheat.

Hard Red Winter	$250 \times 0.51$	= 128 million bushels
Hard Red Spring	$250 \times 0.24$	= 60 million bushels
Soft Red Winter	$250 \times 0.13$	= 32 million bushels
White	$250 \times 0.12$	= 30 million bushels

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