Wheat Outlook: September 2022

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Russian 2022/23 Production and Exports Forecast at a Record

Russia has continued to increase its role in international wheat markets over the years. Since 2012/13, Russia has more than doubled its production through increasing area and yields. In 2022/23, Russia is projected to produce 91 million metric tons (MMT) and export 42 MMT, both records (figure 1). Russia gained competitiveness on the global market by being able to supply low-cost wheat to price-sensitive markets in the Middle East and North Africa. Despite its recent reoccurring export restrictions (tax and quota), Russia’s exports have more than tripled since 2012/13. While the initial pace of Russian exports has been slow in the current marketing year, its export tax and domestic prices declined in August, making its supplies more competitive with other major exporters.

Figure 1
Russian production and exports, 2012/13–2022/23

Domestic Outlook

Domestic Changes at a Glance:

- U.S. wheat production 2022/23 is unchanged from the August forecast at 1.783 billion bushels (table 1). USDA’s National Agricultural Statistics Service (NASS) will provide updated all-wheat and by-class production statistics when it publishes its September 30 Small Grains Annual Summary.
- 2022/23 wheat exports are unchanged from the previous month at 825 million bushels and there are no by-class changes.
- U.S. wheat exports for June and July 2022 reached a total of 117 million bushels, down 23 percent from the same period last year. Official U.S. wheat trade statistics for June and July are calculated based on data from the U.S. Department of Commerce, Bureau of the Census. However, data from the USDA, Federal Grain Inspections Service (FGIS) indicate much stronger wheat exports for August.
- U.S. wheat imports are unchanged at 110 million bushels, up from 95 million in 2021/22. U.S. wheat imports for June and July 2022 totaled 23 million bushels, up 50 percent from the same period in 2021.
- The 2022/23 season-average farm price (SAFP) is projected at $9.00 per bushel, down $0.25 from the previous month, but would still be a record. Futures markets remain volatile on a daily basis, underscored by uncertainty regarding the continuity of shipments from the Black Sea region. However, recently reported data suggests that prices received may be lower than previously expected in the coming months. The July 2022 all-wheat price received was estimated at $8.69 per bushel in the August 31 USDA, NASS publication Agricultural Prices, down from $9.55 in June 2022, but up substantially from $6.26 in July 2021.
### Table 1
U.S. wheat supply and use at a glance 2022/23 (in million bushels)

<table>
<thead>
<tr>
<th>Balance sheet item</th>
<th>2021/22 September</th>
<th>2022/23 August</th>
<th>2022/23 September</th>
<th>Month-to-month change</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning stocks</td>
<td>845</td>
<td>660</td>
<td>660</td>
<td>0</td>
<td></td>
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<tr>
<td>Production</td>
<td>1,646</td>
<td>1,783</td>
<td>1,783</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Imports</td>
<td>95</td>
<td>110</td>
<td>110</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Supply, total</td>
<td>2,586</td>
<td>2,553</td>
<td>2,553</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Demand</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>972</td>
<td>970</td>
<td>970</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Seed</td>
<td>60</td>
<td>68</td>
<td>68</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Feed and residual</td>
<td>94</td>
<td>80</td>
<td>80</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Domestic, total</td>
<td>1,126</td>
<td>1,118</td>
<td>1,118</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Exports</td>
<td>800</td>
<td>825</td>
<td>825</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Use, total</td>
<td>1,926</td>
<td>1,943</td>
<td>1,943</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Ending stocks</td>
<td>660</td>
<td>610</td>
<td>610</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Season-average farm price</td>
<td>$7.63</td>
<td>$9.25</td>
<td>$9.00</td>
<td>-0.25</td>
<td>Lower reported prices to date and expectations for cash and futures prices in the coming months</td>
</tr>
</tbody>
</table>


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**Spring Wheat Harvest Delayed, but Nearly Complete**

The U.S. spring wheat crop was delayed in planting due to wet conditions, with a large portion of the crop seeded in mid- to late-June (figure 2). This resulted in delayed development of the crop overall, with emergence and heading also lagging the normal pace. These developmental delays appear to be somewhat mitigated due to warm weather, which accelerated crop development in recent months and permitted rapid progress of harvesting. According to the USDA, NASS *Crop Progress* report, 85 percent of spring wheat is harvested as of September 11, down from 95 percent last year and the 5-year (2017–21) average of 89 percent.
Consumer Prices Rising for Wheat-based Products

Consumer prices for wheat-based products are up substantially in 2022 relative to 2021, as indicated by the Consumer Price Index (CPI) data published by the U.S. Department of Labor, Bureau of Labor Statistics. During January-August, prices for the “Cereal and bakery products” category are up 11.4 percent from the same period last year, compared to 9.5 percent for the overall “food” category. Consumer prices across a spectrum of cereal-based food products have risen substantially year over year (figure 3). For all the categories noted in figure 3, the year-to-year increase in CPI is more than twice as large as any year in the last decade. Factors contributing to these large increases include elevated input, labor, and energy costs as well as high prices for wheat and other commodities.
Figure 3
Year-to-year change in CPI categories, January–August average, 2012–22

Notes: CPI = Consumer Price Index.
International Outlook

Production in Black Sea Countries is Forecasted Higher

Global wheat production in 2022/23 is revised up 4.3 million metric tons (MMT) to 783.9 as Russia and Ukraine are both revised higher. Production in Russia is forecast at a record 91.0 MMT as winter wheat harvest results continue to exceed expectations. Winter wheat is forecast at a record 68.0 MMT while spring wheat is a near-record 23.0 MMT. While 2022/23 production for Ukraine has been impacted by the ongoing war, wheat production is revised up 1.0 MMT to 20.5 MMT based on recent harvest results, but still down 38 percent from its record production in 2021/22. See this month’s World Agricultural Production report by the USDA, Foreign Agricultural Service for more information.

Other changes this month were for Morocco (+0.5 MMT to 2.7 MMT), Mexico (+0.3 MMT to 3.6 MMT), and Syria (-0.4 MMT to 2.1 MMT). Morocco’s production is still down significantly from 2021/22 (-4.8 MMT) as it was hit with a severe drought, but updated harvest results show 2022/23 yields to be better than expected. Updated harvest data for Mexico displayed higher area harvested and a record yield (6.05 metric tons/hectare). Drastic drought conditions have limited Syria’s yield potential (-0.17 metric tons/hectare to 1.75) and decreased harvested area (-0.1 million hectares to 1.2 million).

2022/23 Global Consumption Revised Higher

2022/23 global consumption is revised up 2.4 MMT to 786.3 MMT with all the increase going into feed and residual use (155.2 MMT). With a bumper crop, Russia’s feed and residual use is revised up 1.0 MMT to 21.0 MMT. Higher residual use in Ukraine is expected (+0.5 MMT to 5.5 MMT) because of higher production and the continued impacts of the war. In the European Union wheat prices have moved to a discount to corn resulting in higher expected wheat feeding (+1.0 MMT to 44.0 MMT). While both crops have been impacted by the heatwave, corn crop conditions have continued to diminish resulting in an increase in prices whereas wheat prices declined in August (figure 4).

To match the World Agricultural Supply and Demand Estimates, consumption is adjusted based on the local marketing year (MY) trade adjustments for 2022/23. Unaccounted trade remains steady at 4.8 MMT resulting in an adjusted consumption of 791.0 MMT, up 2.4 MMT from August.
Trade for 2022/23 Remains at a Record

2022/23 trade year (July/June) exports and imports remain at a record with upward revisions for both. Trade year (TY) exports are revised up 0.2 MMT to 208.4 MMT driven by Brazil (+0.2 MMT to 3.2 MMT). TY imports are up 0.3 MMT to 204.1 MMT with partially offsetting revisions for Mexico (-0.2 MMT to 5.0 MMT) and Syria (+0.4 MMT to 2.0 MMT) because of production changes.

2021/22 TY exports and imports were revised up 0.7 million MT and 0.5 million MT to 205.3 MMT and 199.8 MMT, respectively. This is based on final trade data for most of the countries. The most notable TY import revisions are for Ethiopia (+0.3 MMT to 1.7 MMT), Morocco (+0.2 MMT to 4.7 MMT), and Bangladesh (-0.2 MMT to 6.3 MMT). TY exports are revised up for India (+0.2 MMT to 10.6 MMT) and the European Union (+0.2 MMT to 31.9 MMT) as their export pace was strong in the latter half of the trade year.

Russia Projected To Be Top Exporter

For the 2022/23 trade year, Russia is projected to be the top exporter for the third consecutive year with about 20 percent of estimated global exports. Its bumper crop and proximity to major importers in the Middle East and North Africa has allowed it to increase its market share over the years (figure 5). Over the last three years, the European Union (EU) share of exports has remained steady. While the EU is usually one of the lower-priced options (figure 6), Russia has been able to take some market share in periods where it has large domestic supplies. Large
domestic crops in **Australia** have also allowed it to increase their market share since 2019/20 (+7 percentage points to 12 percent). Australia’s market prices in July 2019 were the highest out of these five countries but declined as its production became available making it more price competitive in recent years (figure 6). Australia is currently tied with **Canada** as the third and fourth major exporters. Canada has been able to recover its market share from its drought-restricted crop last year. The **United States** is slightly up from 2021/22, but continued high prices might continue to restrict its ability to expand its market share. Since 2012/13, the United States share of total exports has dropped 8 percentage points from 19 to 11 percent in 2022/23.

The Russia-Ukraine war caused prices of these major exporters to be very volatile. While prices were already elevated through 2021/22, they spiked at the start of the war (figure 6). These prices declined in recent months and are almost back at pre-war levels. Russia and the EU remain some of the lower-priced options on the market. Canada’s prices have cooled off significantly as its spring wheat crops recover substantially from the 2021/22 drought-restricted production. U.S. prices have also fallen with the onset of this year’s winter wheat harvest and expectations for a strong spring wheat harvest in both the United States and Canada.
Slight Relief for 2022/23 Global Ending Stocks

Global 2022/23 ending stocks see some relief with an upward revision of 1.2 MMT to 268.6 MMT (figure 7) but are still the tightest since 2016/17. Major exporters’ ending stocks are revised up 1.1 MMT to 56.4 MMT with larger stocks for Russia, Canada, Ukraine, and Australia. The European Union partially offsets these revisions. Argentina, the United States, and Kazakhstan remain unchanged. Other notable revisions are for Morocco (+0.4 MMT to 1.6 MMT) and Brazil (-0.2 MMT to 1.2 MMT). Morocco is result of higher domestic production and Brazil is due to higher projected exports as it has ample supplies available to ship.

Figure 7

Month-to-month changes in 2022/23 wheat ending stocks, September 2022

<table>
<thead>
<tr>
<th>Country/region</th>
<th>2022/23 August</th>
<th>2022/23 September</th>
<th>Month-to-month change (million tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>1.3</td>
<td>1.2</td>
<td>(0.2)</td>
</tr>
<tr>
<td>Canada</td>
<td>3.9</td>
<td>4.2</td>
<td>0.3</td>
</tr>
<tr>
<td>European Union</td>
<td>10.2</td>
<td>9.5</td>
<td>(0.6)</td>
</tr>
<tr>
<td>Morocco</td>
<td>1.2</td>
<td>1.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Russia</td>
<td>14.4</td>
<td>15.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Serbia</td>
<td>0.7</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Ukraine</td>
<td>4.2</td>
<td>4.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Vietnam</td>
<td>0.9</td>
<td>0.8</td>
<td>(0.1)</td>
</tr>
<tr>
<td>World total</td>
<td>267.3</td>
<td>268.6</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Note: Changes less than 100,000 metric tons are not included.
Special Article: Factors Influencing Prevented Planting for Spring Wheat

Dylan Turner, Andrew Sowell, Bryn Swearingen, and Francis Tsiboe

Large Share of U.S. Wheat Crop Prevented from Timely Planting

High input costs, elevated (and volatile) commodity prices, and weather-related constraints have all affected the wheat market this year. Producers had to consider a wide variety of local and global conditions when making planting decisions. Ultimately, wheat producers chose to plant a larger acreage to wheat, but adverse weather conditions led to a historically high proportion of spring wheat acreage being planted late.

Background on Wheat Market Pricing in 2022

U.S. producers in the 2022/23 June–May marketing year (MY) were expected to plant more acres to wheat given the expectation of continued high prices. In September 2021, as the bulk of winter wheat planting was starting, Kansas City Hard Red Winter (HRW) ordinary protein wheat prices were already elevated 41 percent over the previous year, influenced by drought in major U.S. production areas which constrained domestic supplies. With prices elevated during the critical sowing period, winter wheat plantings were up 1 percent from the previous year to the highest level in 6 years. In February 2022, both domestic and global wheat prices surged to much higher levels, mainly attributed to global supply disruptions in the wake of Russia’s invasion of Ukraine. Notably, the previously mentioned HRW price was up 79 percent in May 2022, compared with May 2021. This price rise came too late in the production cycle to influence planting decisions for winter wheat, which represented 72 percent of the total U.S. area planted for the year. However, the higher prices in the springtime did have the potential to influence producer decision-making in planting spring wheat and durum, which are primarily planted between April and June.
Weather Constraints

While the price rise in the spring was largely predicated on the war between Russia and Ukraine, issues with U.S. winter wheat production also became a major concern. Drought beset the major Hard Red Winter producing States of Texas, Oklahoma, and Kansas, which resulted in tighter projected supplies and contributed to higher prices. Furthermore, overly wet conditions in parts of North Dakota and Minnesota delayed planting of Hard Red Spring (HRS) wheat. Facing the prospect of high prices and limited time to plant before crop insurance planting deadlines, producers had to weigh the benefits of filing a prevented planting claim or attempting to plant wheat beyond the deadline and continuing the season with lower crop insurance protection guarantees. The major crop insurance planting deadlines for North Dakota are May 31 and June 5 for the Northern and Southern regions of the State, respectively (figure 8). However, many producers were unable to plant by these deadlines due to adverse conditions.

Figure 8
USDA, Risk Management Agency final planting dates for spring wheat (2022 crop year)

Notes: NA = Not Applicable. Final planting dates plotted are those for USDA’s Risk Management Agency’s COMBO insurance products that include individual yield protection (YP), individual revenue protection (RP), and individual revenue protection with harvest price exclusion (RP-HPE).
This led to a notably high number of prevented planting acres according to the September 12 crop acreage data released by USDA’s Farm Service Agency (FSA) (figure 9). Just over 6 percent of spring wheat acreage that was reported to FSA was classified as being prevented from planting before the relevant final planting date (693,000 acres). This is more than double the 10-year average (304,000 acres) and only one other year, 2013, had more prevented planting acreage for spring wheat in the last decade (1,288,000 acres). The vast majority (91 percent) of spring wheat prevented acres were concentrated among North Dakota and Minnesota which had approximately 514,000 and 114,000 prevented acres respectively. This represented over 8 percent of total planted spring wheat acres for both States – well above the 5-year average prevented acres for both States (figure 10).

Figure 9
Spring wheat prevented acres reported to USDA, Farm Service Agency

![Graph showing spring wheat prevented acres from 2012 to 2022](image)

Notes: USDA’s Farm Service Agency’s (FSA) Acreage and Compliance Determinations Handbook defines prevented planting as the inability to plant the intended crop acreage with proper equipment by the final planting date for the crop type because of a natural disaster. Data are from FSA’s crop acreage data files which represents reported acres to FSA as of September 12, 2022. Source: USDA, Economic Research Service using data from the USDA, Farm Service Agency.

1 USDA Farm Service Agency will continue to update its crop acreage data files over the next several months before a final release is issued in January 2023.
Notes: PP = prevented plant. FSA = Farm Service Agency. The top 10 spring wheat-producing States for 2022, as measured by FSA planted acres, are displayed in the plot. Total acres are defined as the sum of prevented acres, failed acres, and planted acres in the FSA Crop Acreage data files which represent acres reported to FSA as of September 12, 2022. FSA’s Acreage and Compliance Determinations Handbook defines prevented planting as the inability to plant the intended crop acreage with proper equipment by the final planting date for the crop type because of a natural disaster. Failed acreage is defined as acreage that was timely planted with the intent to harvest, but because of disaster related conditions, the crop failed before it could be brought to harvest.
Source: USDA, Economic Research Service, using data from USDA, Farm Service Agency.

Insurance Decisions

Not being able to plant due to eligible causes (which includes overly wet planting conditions) opens several options for the remainder of the season for most farmers with crop insurance policies. Generally, farmers must decide whether to take a prevented planting payment and forgo planting any other crops for harvest or plant a second crop and take a reduced prevented

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USDA, Economic Research Service
plant payment. Farmers may also choose to plant the originally intended crop after the final planting date, but typically will have to continue the season with reduced insurance protection guarantees\(^2\) that reflect the lower yield potential of a late planted crop.

Like USDA’s Farm Service Agency (FSA), USDA’s Risk Management Agency (RMA) also reports data pertaining to prevented acres, however, the information presented by each data source is slightly different and not directly comparable. First, RMA data in general only represents insured producers while FSA acreage only represents producers participating in USDA farm programs. Generally, the overlap between insured producers and producers participating in farm programs is large meaning similar year-over-year changes in prevented plant acres are generally observed between the two sources. Second, the prevented acreage reported by RMA only represents insured acres that also had valid prevented plant claims while the FSA data represents acres that were unable to be planted before the final planting date regardless if they were insured and eligible for prevent plant payment. However, even among insured producers, it is possible that acres that were not able to be planted on time did not receive a prevented plant payment.

Acres eligible for prevented plant payments are calculated based on a producer’s planted acreage over the last four years. For producers who intended to devote more acreage to spring wheat than they have in the recent past, the acres in excess of their typical planted acreage may not have been eligible for prevented plant payments regardless of if they were able to plant on time or not. In such a case, acres not planted on time may not appear as acreage receiving a prevented plant indemnity payment.

Figure 11 shows acres with prevented plant claims on spring wheat since 2012 with 2022 acres being based on preliminary data from USDA’s Risk Management Agency’s (RMA) summary of business files as of September 12, 2022. The available data show 2022 prevented plant claims are not particularly high relative to the last several years, despite total insured spring wheat acreage being up 12.5 percent over 2021 (12.78 million vs 11.36 million acres). However, RMA data for 2022 spring crops is not final and is subject to change as approved insurance providers (i.e. insurance companies that are authorized to sell and service Federal crop insurance policies) report additional information to RMA\(^3\). In addition to ineligible acreage being a potential

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\(^2\) The late planting period is generally 25 days, and the production guarantee is reduced one percent per day planting is delayed after that final planting date.

\(^3\) USDA, Risk Management Agency (RMA) updates the summary of business data files weekly for the 5 most recent years based on any data accepted through its Policy Acceptance and Storage System from the week prior. Data for the most recent five years are thus subject to change weekly if additional information from approved insurance providers reports to RMA.
reason to preclude receipt of a prevented plant payment, producers who are unable to plant on time may also opt to plant after the final cutoff date rather than take a prevented plant payment – an option that planting progress reports suggest may have been utilized by some producers of 2022 spring wheat (figure 12).

Figure 11
U.S. acres with prevented plant claims according to USDA, Risk Management Agency

Figure 12 shows 2022 planting progress for spring wheat relative to 2019 and the average from 2010–21. Both Minnesota and North Dakota planting progress for MY 2022/23 notably lagged behind MY 2019/20 – which was another year where the spring wheat belt saw delayed plantings and higher prevented plant acres. For the purposes of this analysis, the last of the final crop insurance planting dates for both Minnesota and North Dakota is provided as June 5 – i.e. the date at which any planted spring wheat is considered late planted, regardless of a particular providers (AIPs) becomes available. Data for 2022 are preliminary and only represents information provided by AIPs to RMA in time to be included in the September 10 update of RMA’s summary of business files.
county’s cutoff date (which could be before, but no later than June 5). Within Minnesota, 35 percent of 2022/23 spring wheat was planted after June 5 (average is about 3 percent) while North Dakota as characterized by 26 percent being planted after June 5 (average is about 9 percent).

One reason for the apparent willingness to plant late during 2022/23, as opposed to taking a prevented plant payment, may be elevated wheat prices at planting. Prices reached historic highs which may have enticed farmers to forgo prevented planting payments (which are designed to primarily cover costs associated with planting) in favor of receiving market prices on their late planted crop. RMA’s 2022 average projected price for spring wheat was $8.89 per bushel – the highest level seen in the last decade (figure 13).
Conclusion

Overall, spring wheat producers were forced to navigate a series of abnormal, but interrelated, factors as they made decisions going into the 2022 planting season. Producers were initially expected to plant more acreage due to high commodity prices, however planting was delayed past the final planting dates for many due to adverse weather conditions – a condition that typically prompts some insured producers to forgo planting and receive a prevented planting indemnity payment. However, high commodity prices seem to have coaxed producers into planting a notably high amount of spring wheat after the final planting deadlines. Taken together, many prevented spring wheat acres coupled with high prices seemed to have resulted in a modest overall effect on spring wheat planting for 2022. USDA, National Agricultural Statistics Service reports that total planted area for spring wheat (excluding Durum) in 2022 is down 3 percent from the previous year. However, projected area harvested is up 5 percent year over year because drought conditions in 2021 resulted in a smaller share of acreage being harvested.