



# U.S. 2012/13 Wheat Year in Review: Total Use Rose More Than Supplies, Lowering Ending Stocks

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## Abstract

Total U.S. wheat supplies for the 2012/13 marketing year (June 1, 2012 to May 31, 2013) surpassed those of the previous year, as lower beginning stocks were more than offset by higher production and imports. Total domestic use was up year to year with a sharp increase in feed and residual use as wheat replaced high-priced corn in livestock rations. Corn prices were high because a severe drought reduced U.S. corn production in 2012. Other domestic uses were nearly unchanged. Exports were down slightly from the previous year. The season-average price for 2012/13 was record high at \$7.77 per bushel, supported mostly by high corn prices.

**Keywords:** Wheat, United States, world, production, feed, consumption, supply, use, stocks, price

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## Summary

The Economic Research Service's wheat situation and outlook program publishes 12 monthly reports each year detailing the factors underlying the month-to-month changes in the U.S. Department of Agriculture's wheat supply and demand projections as published in the *World Agricultural Supply and Demand Estimates (WASDE)*. This report provides an annual year-in-review discussion of the 2012/13 domestic marketing year (June 1, 2012-May 31, 2013), covering supply, use, ending stocks, and prices.

The defining feature of the 2012/13 U.S. wheat marketing year was the severe drought in the United States that caused large production losses of corn and soybeans in 2012. Though parts of the Central and Southern Plains wheat-producing areas suffered from a shortage of rainfall, the impact of the 2012 drought was concentrated in the U.S. Corn Belt States. The wheat crop elsewhere in the United States, including the Northern Plains, was unaffected, and the yield for the 2012 wheat crop equaled the record yield of the 2010 crop.

With the reduced U.S. corn and soybean production, the prices of these commodities rose sharply, pulling U.S. wheat prices along with them. The initial effect of rising corn prices was to sharply increase wheat feeding during the summer quarter of the 2012/13 marketing year. However, wheat prices eventually rose high enough to limit wheat's use in feed rations in the fall of 2012 and also limit U.S. export competitiveness relative to lower-priced wheat from the Black Sea region (Russia, Kazakhstan, and Ukraine) despite that region's reduced output due to freeze damage and an especially severe drought.

**Supplies.** Total U.S. supplies for 2012/13, at 3,131 million bushels, were up 157 million bushels from the previous year, as much higher production and slightly higher imports more than offset lower carryin stocks. Beginning stocks for 2012/13 were 743 million bushels, 119 million bushels less than in 2011/12.

All-wheat production was estimated at 2,266 million bushels for 2012, up 267 million bushels from 2011. All-wheat harvested area for 2012 was 48.9 million acres, up 3.2 million acres from the previous year. The U.S. all-wheat yield was 46.3 bushels per acre, equaling the record 46.3 bushels for 2010. The 2012 yield was up 2.6 bushels from 2011.

**Use.** Domestic use of wheat in 2012/13 was up year-over-year by 226 million bushels to 1,406 million bushels because of sharply higher feed and residual use as wheat replaced high-priced corn in livestock rations. Feed and residual use was up 226 million bushels from the previous marketing year to 388 million bushels. Other domestic uses were nearly unchanged. Increased flour use due to population growth and a slight increase in per capita flour use were partially offset by a modestly higher extraction rate than in the previous year. This resulted in a small increase in bushels of wheat milled compared with the year before. U.S. exports for 2012/13 were down 44 million bushels from 2011/12 to 1,007 million bushels as high U.S. wheat prices reduced foreign demand for U.S. wheat.

**Ending stocks.** Total U.S. ending stocks for 2012/13, at 718 million bushels, were down 25 million bushels from those of 2011/12. Though slightly lower than in 2011/12, ending stocks for 2012/13 were the fourth-highest of the past decade and

still 412 million bushels above 2007/08 ending stocks. Ending stocks for 2007/08 were the lowest since the late 1940s.

**Price.** The all-wheat season-average price (SAP) for 2012/13 was a record \$7.77 per bushel. This high SAP was supported mostly by high corn prices. The previous record high was \$7.24 per bushel in 2011/12.

### *U.S. Wheat Production and Exports in a Global Perspective*

U.S. wheat production and exports for 2012/13 were up year to year, while global production and exports were down. Hence, U.S. share of global production and trade increased slightly year to year.

Global production for 2012/13, at 656 million metric tons (mmt) was down 41 mmt from 2011/12. The 2011/12 production was record high until the 2013/14 production of 711 mmt. Among the principal wheat-exporting countries, two countries had higher production in 2012/13 compared to 2011/12: United States, up 7.26 mmt, and Canada, up 1.92 mmt.

Many countries contributed to the lower global output. The largest decrease was 37.82 mmt in the Former Soviet Union (FSU) countries: Russia, down 18.52 mmt; Kazakhstan, down 12.89 mmt; and Ukraine, down 6.56 mmt. Output was also down in Australia (7.44 mmt), Argentina (6.00 mmt), and the European Union (4.30 mmt). The adverse weather causing these losses is discussed in the section of this report covering U.S. exports for 2012/13.

These production losses led to lower exports for 2012/13 for most of these exporters. Exports from the FSU countries were down 13.84 mmt: Russia, down 10.34 mmt, and Kazakhstan, down 5.14 mmt. Ukraine was up slightly, 1.75 mmt. Argentine and Australian exports were down 9.38 mmt and 6.00 mmt, respectively. European Union exports were up 5.93 mmt. The exports of the other key exporter, Canada, were up 1.62 mmt.

Despite the fact that U.S. exports were down 1.19 mmt to 27.42 mmt, the U.S. share of world exports increased 2 percent year to year, from 18 percent in 2011/12 to 20 percent in 2012/13, because global exports dropped so sharply. Global exports for 2012/13 were down 19.81 mmt from 2011/12 to 137.97 mmt.

Total global use of wheat in 2012/13 was 679 mmt, down from the record 697 mmt in 2011/12. Reduced wheat feeding from 2011/12 accounted for 11 mmt of the lower use in 2012/13.

### *U.S. Supplies for 2012/13*

Total U.S. supplies for 2012/13, at 3,131 million bushels, were up 157 million bushels from the previous year (table 1). Much higher production and slightly higher imports more than offset lower carryin stocks.

**Beginning Stocks.** Beginning stocks for 2012/13 were 743 million bushels and were down 119 million bushels from 2011/12.

**Imports.** Imports for 2012/13, at 123 million bushels, were up 11 million bushels from 2011/12.

**Production.** All-wheat production was estimated at 2,266 million bushels for 2012, up 267 million bushels from 2011. All-wheat harvested area for 2012 was 48.9 million acres, up 3.2 million acres from that of the previous year. The U.S. all-

wheat yield was 46.3 bushels per acre, equaling the record 46.3 bushels for 2010. The 2012 yield was up 2.6 bushels from 2011.

U.S. planted area for 2012/13, at 55.7 million acres, was up 1.3 million acres from the 2011 acreage of 54.4 million, as both winter and spring seedings were up year to year. The increased winter wheat seedings occurred because higher hard red winter (HRW) seedings more than offset smaller soft red winter (SRW) seedings and white winter seedings. Rainfall returning to the Southern Plains was part of the reason for expanded HRW seedings. Also, because of the severe drought the previous year, the HRW production areas in the Central and Southern Plains were short of forage. Some growers planted wheat in hopes of getting some wheat for fall and winter grazing. Finally, HRW seedings were up because high revenue insurance guarantees provided protection in case of loss due to adverse conditions. SRW seedings were down because a late row crop harvest resulted in late seedings and prevented plantings. Hard red spring (HRS) and durum seedings were up from the previous year when excessive moisture and cool temperatures in the Northern Plains resulted in substantial prevented plantings.

Though wheat seeded area has increased 2 years in a row, this does not reverse the 30-year downward trend for wheat area in the United States. In 1981 and 1982, wheat planted area was 88.3 million acres and 86.2 million acres, respectively (fig. 1). With the enhanced planting flexibility in the 1996 and succeeding Farm Acts, relatively low returns led to the substitution of competing crops for wheat, particularly on the Plains. For information about the long-term forces behind this large decline in wheat area in the United States, follow the link in the box, “USDA Wheat Baseline, 2013-22.”

### **USDA Wheat Baseline, 2013-22**

Each year, USDA updates its 10-year projections of supply and utilization for major field crops grown in the United States, including wheat. (See Overview of the USDA Baseline Process for more information.) One key use of the projections is as a “baseline” from which to analyze the impacts of potential policy changes affecting U.S. agriculture.

This discussion summarizes analysis underlying the wheat projections for 2013-22. Details about projections for the U.S. macroeconomy, other U.S. crops, U.S. livestock, farm income and food prices, and U.S. and global agricultural trade, which are critical components of this analysis, can be found in the Agricultural Baseline Projections topic page.

The U.S. wheat sector faces many long-term challenges:

- The long-term projections point to smaller U.S. wheat planted area, a continuation of a long-term trend as profitability relative to other crops—particularly corn and soybeans—has declined.

- The sharp decline in domestic food use of wheat since 2000—resulting from changing consumer preferences—appears to have ended. Future growth is likely to correspond with population growth.
- Internationally, in addition to traditional global competitors (Canada, Argentina, Australia, and the European Union), Ukraine, and Russia have emerged as new competitors with the United States in foreign markets in years when their production is high. The overall result in the projections is a smaller U.S. share of an expanding world wheat trade market.

For more information on USDA's 10-year baseline projections for wheat, see <http://www.ers.usda.gov/topics/farm-economy/agricultural-baseline-projections.aspx>

U.S. all-wheat harvested area for 2012 increased more than planted area because of recovery from the severe drought in the Central and Southern Plains that led to high abandonment rates for the 2011 crop. While the all-wheat planted area was up 1.3 million acres, the all wheat-harvested area was up 3.2 million acres, mostly because of fewer abandoned HRW acres in the Central and Southern Plains. The 2012 HRW harvest-to-planted (h-to-p) ratio was 0.826, substantially better than the 2011 ratio of 0.753. For comparison, the 2012 SRW and spring wheat h-to-p ratios were 0.858 and 0.982, respectively. The abandonment rate for HRW is highly variable because of the frequent occurrence of drought in the Central and Southern Plains. Over the 10 years previous to 2011, the abandonment rate range has been as low as 0.663 in 2002 and as high as 0.842 in 2010.

Record equaling yields for the 2012 crop were the result of higher HRW and much higher HRS yields. Improved weather conditions year to year in the Central and Southern Plains led to a 4.3-bushel-per-acre increase for HRW wheat and improved growing conditions in the Northern Plains resulted in an 8.8-bushel-per-acre increase for HRS wheat. These large yield increases more the offset lower SRW and white wheat yields year to year. Durum yields were slightly higher from the previous year.

Table 1--Wheat: U.S. market year supply and disappearance

Item and unit		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
<b>Area:</b>							
Planted	Million acres	60.5	63.2	59.2	53.6	54.4	55.7
Harvested	Million acres	51.0	55.7	49.9	47.6	45.7	48.9
Yield	Bushels per acre	40.2	44.9	44.5	46.3	43.7	46.3
<b>Supply:</b>							
Beginning stocks	Million bushels	456	306	657	976	862	743
Production	Million bushels	2,051	2,499	2,218	2,207	1,999	2,266
Imports <sup>1</sup>	Million bushels	113	127	119	97	112	123
Total supply	Million bushels	2,620	2,932	2,993	3,279	2,974	3,131
<b>Disappearance:</b>							
Food use	Million bushels	948	927	919	926	941	945
Seed use	Million bushels	88	78	69	71	76	73
Feed and residual use	Million bushels	16	255	150	129	162	388
Total domestic use	Million bushels	1,051	1,260	1,138	1,126	1,180	1,406
Exports <sup>1</sup>	Million bushels	1,263	1,015	879	1,291	1,051	1,007
Total disappearance	Million bushels	2,314	2,275	2,018	2,417	2,231	2,414
Ending stocks	Million bushels	306	657	976	862	743	718
CCC inventory <sup>2</sup>	Million bushels	0	0	0	0	0	0
Stocks-to-use ratio, %		13.2	28.9	48.4	35.7	33.2	29.7
Loan rate	Dollars per bushel	2.75	2.75	2.75	2.94	2.94	2.94
Direct payment rate	Dollars per bushel	0.52	0.52	0.52	0.52	0.52	0.52
Farm price <sup>3</sup>	Dollars per bushel	6.48	6.78	4.87	5.70	7.24	7.77

Notes: Totals may not add due to rounding.

<sup>1</sup> Includes flour and selected other products expressed in grain-equivalent bushels.

<sup>2</sup> Stocks owned by USDA's Commodity Credit Corporation (CCC). CCC-owned inventory held in the Bill Emerson Humanitarian Trust was liquidated in 2007/2008 when world wheat stocks fell to a 26-year low.

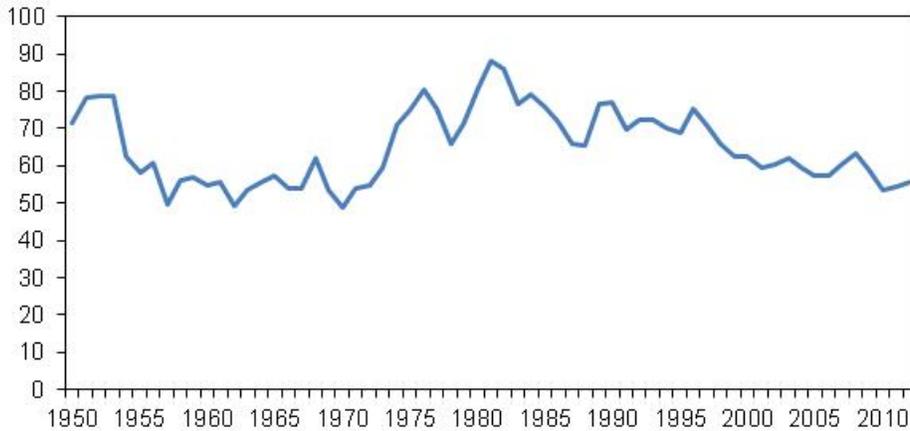
<sup>3</sup> U.S. season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand*

Figure 1

**U.S. wheat planted area, 1950-2012<sup>1</sup>**

Million acres



Notes: <sup>1</sup>Includes winter wheat area planted in the preceding fall.

Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

### ***Domestic Demand Exceeds Foreign Demand for U.S. Wheat in 2012/13***

U.S. domestic use for 2012/13 increased 19 percent year to year and was 399 million bushels greater than exports. For comparison, domestic use exceeded exports in 3 of the previous 5 marketing years, but not by as large of margin in any of those years as in 2012/13. Total domestic use in 2012/13, at 1,406 million bushels, was up 226 million bushels from 2011/12, almost entirely because of sharply higher feed and residual use. This level of domestic use is the highest in ERS data going back to 1910/11. U.S. exports, at 1,007 million bushels for 2012/13, were down modestly from 2011/12 by 44 million bushels.

**Feed and Residual Use.** Feed and residual use for 2012/13 was up 226 million bushels from 2011/12 to 388 million bushels. The sharp increase in feed and residual use was the result of a severe U.S. drought that caused large corn and soybean production losses in 2012. Though parts of the Central and Southern Plains wheat-producing areas suffered from a shortage of rainfall, the impact of the 2012 drought was concentrated in the U.S. Corn Belt States. The wheat crop elsewhere in the United States, including the Northern Plains, was unaffected, and the yield for the 2012 wheat crop equaled the record yield of the 2010 crop.

With reduced U.S. corn and soybean production, the prices of these commodities rose sharply, pulling U.S. wheat prices along with them. The initial effect of rising corn prices was to sharply increase wheat feeding during the summer quarter of the 2012/13 marketing year. However, wheat prices eventually rose high enough to price wheat out of feed rations in the fall of 2012 and also limit U.S. export competitiveness with the lower-priced wheat from the Black Sea region (Russia, Kazakhstan, and Ukraine) despite that region's output losses to freeze damage and to an especially severe drought.

**Total Food Use.** Total domestic food use of wheat, at 945 million bushels, was up 4 million bushels from 2011/12. Increased flour use with a rising population and a slightly higher per capita flour use were partially offset by a slightly higher extraction rate than in previous year, resulting in only a slight increase in bushels of wheat milled compared with the year before.

The flour extraction rate varies partly with the plumpness of the grain kernels and with the diligence with which mills optimize flour extraction. Plumpness is greater when the wheat crop is not stressed by moisture shortages or high temperatures during the grain-filling production stage. With very high wheat prices, there is a greater incentive for mill managers to frequently adjust their mills to maximize flour extraction.

The 2012/13 flour extraction rate continued at a very high level, by historical standards. High flour extraction rates mean that fewer bushels of wheat need to be milled to produce a given quantity of flour. At 76.7 percent, the 2012/13 rate was up slightly from the 76.3-percent rate for the 2011/12 marketing year, but down from the really high extraction rates of 77.1 percent and 77.0 percent for 2009/10 and 2008/09, respectively. The average monthly flour extraction rate from 1990/91 to 2007/08 was 74.6 percent. During this 18-year period, the highest rate was 75.9 percent in 1996/97, the marketing year of with the second highest average wheat prices of the 1990s.

**Per Capita Flour Use.** Per capita all-wheat flour use for 2012 is estimated at 134.4 pounds, up 1.9 pounds from the 2011 estimate but down 3.9 pounds from 2007, a recent peak. The 2012 per capita food use is down 11.9 pounds from the 2000 level when flour use started dropping sharply, apparently due to increased consumer interest in low-carbohydrate diets.

Time series data of flour consumption can be found in Table 29 at <http://www.ers.usda.gov/data-products/wheat-data.aspx>.

Figure 2  
**U.S. per capita wheat flour use, 1964 to 2012**



Source: USDA, Economic Research Service.

From the early 1970s until the late 1990s, U.S. wheat producers could count on rising per capita food use to expand the domestic market for their crop. The growth of the domestic market during this time period reflected changes that included the boom in away-from-home eating, consumers' desire for greater variety and more convenience in food products, promotion of wheat flour and pasta products by industry organizations, and wider recognition of the health benefits of eating high-fiber, grain-based foods.

**Exports.** U.S. wheat exports for 2012/13 totaled 1,007 million bushels, down from 1,051 million bushels for 2011/12. Exports rose year to year for SRW and durum. Exports decline from 2011/12 for the other three classes of wheat.

**Chronology of weather conditions affecting the global 2012 wheat crop.** In the early spring of 2012, there were concerns about freeze damage in parts of the Black Sea region (Russia, Kazakhstan, and Ukraine) and in Europe (Germany and France). By late spring, the lack of moisture in the Black Sea countries was stressing the wheat crop, and forecasters were reducing their projections of wheat output and exports for the region compared to the previous year.

Partially offsetting the Black Sea losses was the expectation that India would be exporting substantial quantities of wheat because the country was carrying larger than usual stocks.

The United States then suffered a severe early summer drought that sharply reduced the production of corn and soybeans. Sharply rising corn prices strongly supported high U.S. wheat prices. Black Sea wheat was priced below the high U.S. wheat prices during the summer and early fall. The result was that U.S. exports lagged behind the early expected pace.

Early in the fall of 2012, rising concerns about the lack of rainfall in Australia were leading to lower forecasts of that country's output and exports compared to the previous year. Lower yields due to the dry weather reduced Australian wheat production from the previous year. The previous year, the country produced a record-large crop, though part of the crop was damaged by late-season rains and was exported as low-cost feed-quality wheat.

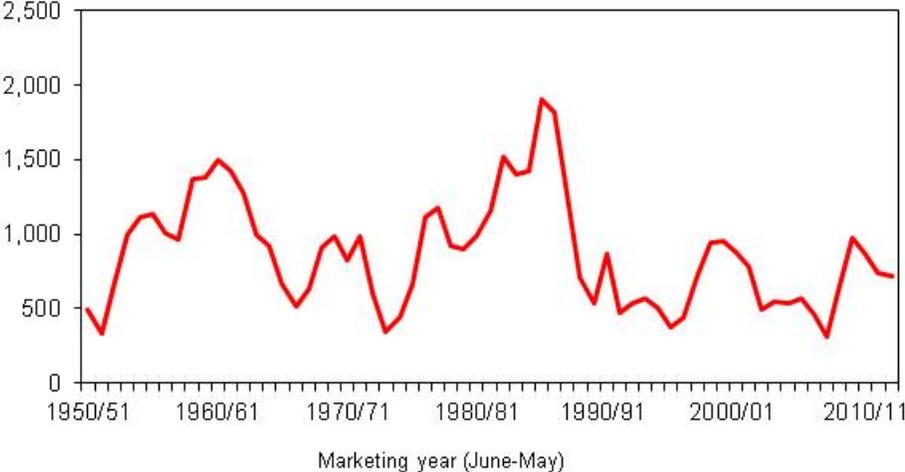
In Argentina, farmers planted a very small wheat crop, the lowest in 40 years, because of concerns about the adverse impact of the Government's wheat export policies on domestic wheat prices. Heavy rainfall then led to additional losses due to disease (fusarium) and light test weight. These disease losses further reduced potential Argentine exports.

**Ending Stocks.** Total U.S. ending stocks for 2012/13, at 718 million bushels, were down 25 million bushels from those of 2011/12. Though slightly lower than 2011/12, ending stocks for 2012/13 were the fourth-highest of the past decade and still 412 million bushels above 2007/08 ending stocks. Ending stocks for 2007/08 were the lowest since the late 1940s (fig. 3).

The U.S. stocks-to-use ratio for 2012/13 was 30 percent, less than the 33 percent and 36 percent for 2011/12 and 2010/11, respectively. The 2012/13 ratio is much lower than the 48 percent for 2009/10, which was very high by recent historical standards. The U.S. stocks-to-use ratio averaged 24 percent in the 3 years before the

2007/08 price spike. In 2007/08, the U.S. stocks-to-use ratio dropped to 13 percent as world demand for U.S. wheat exports rose to a 15-year high.

Figure 3  
**U.S. wheat ending stocks, 1950/51-2012/13**  
Millions of bushels



Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

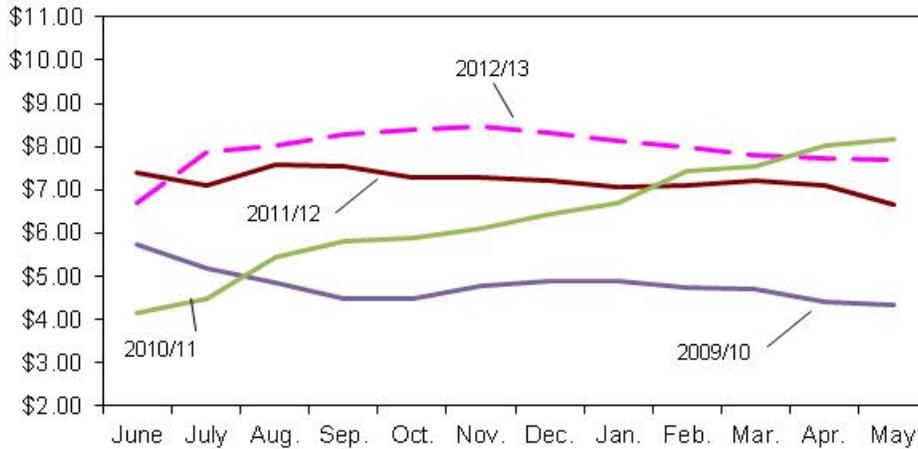
**Monthly Wheat Prices**

In 2012/13, U.S. monthly wheat prices were very high historically, supported by high corn prices. The monthly price dropped to a harvest time low of \$6.70 per bushel in June and rose to a marketing-year high of \$8.47 in November (fig. 4). The monthly prices began dropping thereafter for the rest of the marketing year to near \$7.70 per bushel. The season-average price (SAP) was a record high of \$7.77 per bushel. The previous record high SAP was \$7.24 per bushel in 2011/12.

Figure 4

**Monthly 2012/13 all-wheat prices were high compared to previous years**

Dollars/bushel



Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

**High Prices Result in Low Farm-Program Expenditures for 2012 Wheat**

The U.S. wheat sector is eligible for various forms of Government assistance, including marketing assistance loans, direct and countercyclical payments, crop insurance, and export assistance through credit guarantees and food donation programs. Some payments are dependent on market prices, so when prices are high, those payments are relatively low.

**Marketing Loans.** Nonrecourse marketing assistance loans provide benefits to producers when market prices are low. Farmers can get these benefits through the loan program and market loan gains, or equivalently, through loan deficiency payments (LDP).

With high prices, 2012 crop marketing loan activity for wheat was very low. Marketing loans were made on only 27.5 million bushels (1 percent of production). Marketing loans have been very limited in recent years: 36.0 million bushels in 2011; 66.5 million bushels for 2010; and 102.5 million bushels for 2009. Marketing loan benefits (including marketing loan gains, LDPs, and eLDPs (electronic LDPs)) were zero for the 2012 crop year. Benefits were also zero for 2011.

**Direct Payments (DP).** DPs are decoupled (separated) from current production and prices, providing farmers with a predetermined payment that does not depend on market conditions. DP expenditures related to wheat base acres have averaged \$1.1 billion annually under the 2002 and 2008 Farm Acts.

**Counter-cyclical Payments (CCP).** CCPs are decoupled from current production, but linked inversely to season-average farm prices. CCP rates rise as the season-average market price falls below certain levels. With the 2012/13 season average at \$7.77 per bushel, no CCPs were made for wheat base acres for the 2012 crop. The CCP price trigger is \$3.65 per bushel.

**Crop Insurance Subsidies.** In the 2012 crop year, about 46 million acres or more than 80 percent of planted wheat acres were insured under the Federal crop insurance program, including both yield and revenue products. Total crop insurance premiums paid for wheat were about \$1.8 billion, of which about \$1.1 billion were premium subsidies paid by the Government. About \$755 million were paid to wheat producers in crop insurance indemnities on the 2012 crop. Participation in revenue insurance in 2012 was about 80 percent of wheat-insured acres.

**Export Assistance and Food Aid.** U.S. food assistance programs provide agricultural products to individual countries with food aid needs through direct donations and through loans at concessional rates. The United States provides food assistance through Public Law (P.L.) 480 (Food for Peace) and the Food for Progress Program. Title I of P.L. 480 finances sales of commodities under long-term credit arrangements to developing countries that are deemed to have insufficient foreign exchange. Title II provides for donations for emergency food relief and nonemergency humanitarian assistance to international organizations, such as the World Food.

**Program and to recipient Governments.** Section 416(b) of the Agricultural Act of 1949, as amended, provides for donations of Commodity Credit Corporation (CCC)-owned surplus commodities to developing countries.

Food for Progress authorizes the donation or sale of food aid commodities to assist developing countries that are implementing market-oriented policy reform. However, by the end of the 2007/08 marketing year, the U.S. Department of Agriculture had sold all CCC-owned stocks that were in the Bill Emerson Humanitarian Trust (formerly the Food Security Commodity Reserve). Instead, the Trust currently has \$310.7 million in funding, which may be drawn from the Treasury to purchase wheat, corn, sorghum, and/or rice. The McGovern-Dole International Food for Education and Child Nutrition Program was authorized by the 2002 Farm Act to provide donations of U.S. agricultural products and technical assistance for school feeding projects in low-income countries. The amount appropriated for this program for FY 2013 is \$187.7 million.

The share of U.S. wheat exports under Section 416 donations and other food assistance programs dropped sharply in the middle of the past decade before recovering toward the end of the decade. In 2000/01, the food-assistance share of total wheat exports was 28 percent. Food assistance's share fell to only 7 percent in 2006/07 and 2007/08 as U.S. exports expanded and food assistance declined. Food assistance's share partially recovered toward the end of the decade as the volume of wheat shipped under these programs increased while total U.S. wheat exports declined. The average share is 11 percent for the 3 years ending with 2011/12. For levels by program see table 27 at <http://www.ers.usda.gov/data-products/wheat-data.aspx>.

<sup>1</sup>For more information on these programs, see <http://www.ers.usda.gov/topics/farm-economy/farm-commodity-policy.aspx>

## Wheat Situation by Class 2012/13

### *HRW, HRS, and Durum Have Large Year-to-Year Increases in Production*

Three classes of wheat had relatively large production increases in 2012/13. Year-to-year production increases were: durum, +65 percent; HRW, +28 percent; and HRS, +27 percent. Production was down for the other two classes: white, -18 percent; and SRW, -8 percent.

### *HRW Production Up in 2012 with Partial Recovery from Drought Conditions*

HRW **production** for 2012, at 1,000 million bushels, was up 220 million bushels from 2011 with larger harvested area and higher yields due, in part, to the partial recovery from the severe drought on the Central and Southern Plains (table 2).

Rainfall returning to the Southern Plains was only part of the reason for expanded HRW seedings in the fall of 2011. Also, because of the severe drought the previous year, the HRW production areas in the Central and Southern Plains were short of forage. Some growers planted wheat for grazing. Finally, revenue insurance guarantees provided protection in case of loss due to adverse conditions.

Year to year, the planted area for the 2012 crop was larger than 2010 by 1.3 million acres. Because the rate of abandonment was down sharply from the previous year's drought, harvested area was up 3.1 million acres.

HRW planted area for 2012 was 29.8 million acres, and the harvested area was 24.6 million acres. The planted and harvested areas for 2011 were 28.5 and 21.4, respectively. The h-to-p ratio for 2012 was 0.826, higher than the 0.753 ratio for 2011. The h-to-p ratio averaged 0.842 for the 5 years prior to 2011.

The recovery in 2012 from the drought in 2011 resulted in higher HRW wheat yields than in 2011. HRW wheat yields averaged 40.7 bushels per acre in 2012, up from 36.4 bushels in 2011.

HRW supplies in 2012/13, at 1,335 million bushels, were up 169 million bushels from the previous marketing year. Imports were also up, while carryin stocks were down. Total use, at 992 million bushels, was 143 million bushels higher than the previous year (fig. 5). Total domestic use was up 160 million bushels from 2011/12 because of higher feed and residual use as wheat substituted for corn in cattle rations in the Plains. Food and seed use were nearly unchanged. Exports were down 17 million bushels (fig. 6).

Table 2--Hard red winter wheat supply and demand<sup>1</sup>

Item	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Million acres										
Area:										
Planted	32.6	30.8	30.0	29.3	33.0	31.3	31.7	28.6	28.5	29.8
Harvested	25.6	23.4	24.6	21.3	25.7	25.9	24.1	24.0	21.4	24.6
Bushel per harvested acre										
Yield	41.7	36.6	37.8	32.0	37.2	39.9	38.1	42.4	36.4	40.7
Million bushels										
Supply:										
Beginning stocks	188	227	193	215	165	138	254	385	386	317
Production	1,071	856	930	682	956	1,035	920	1,018	780	1,000
Imports	0	1	0	1	1	2	2	1	0	18
Total supply	1,260	1,084	1,123	898	1,121	1,174	1,176	1,404	1,166	1,335
Domestic use:										
Food	378	382	370	366	397	385	361	359	404	400
Seed	35	33	33	37	35	35	32	32	34	33
Feed & residual	109	86	77	50	15	52	28	10	15	179
Total domestic	522	502	481	453	448	472	421	402	452	612
Exports	510	389	428	280	536	447	370	617	397	380
Total use	1,033	891	908	733	984	919	791	1,018	849	992
Ending stocks	227	193	215	165	138	254	385	386	317	343
Stocks-to-use ratio, %	22	22	24	23	14	28	49	38	37	35
Dollars per bushel										
Farm price <sup>2</sup>	\$3.23	\$3.29	\$3.38	\$4.53	\$6.15	\$6.90	\$4.84	\$6.49	\$6.92	\$7.56

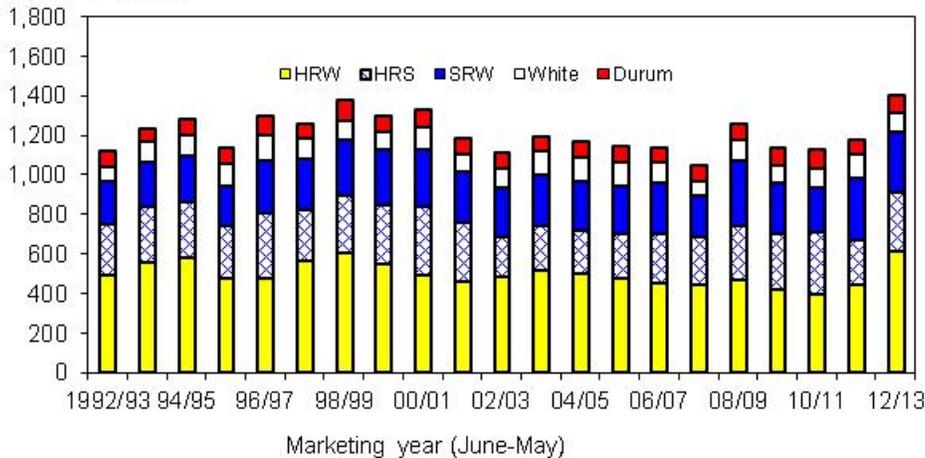
Notes: <sup>1</sup>ERS estimates of area, yield, and domestic use.

<sup>2</sup> Season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, Economic Research Service, *Wheat Outlook*.

Figure 5  
**U.S. domestic wheat use for 2012/13 higher than previous years**

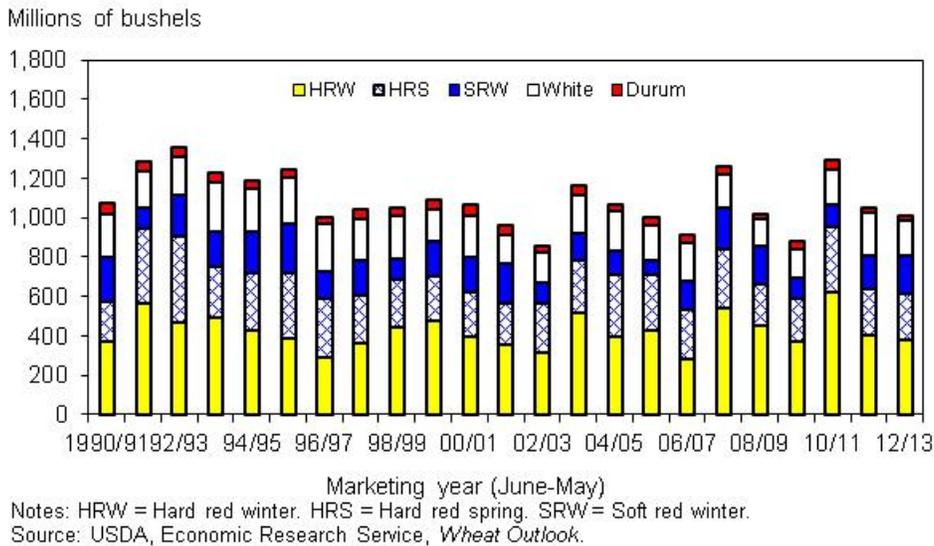
Millions of bushels



Notes: HRW = Hard red winter. HRS = Hard red spring. SRW = Soft red winter.

Source: USDA, Economic Research Service, *Wheat Outlook*.

Figure 6  
**Wheat exports down slightly in 2012/13**



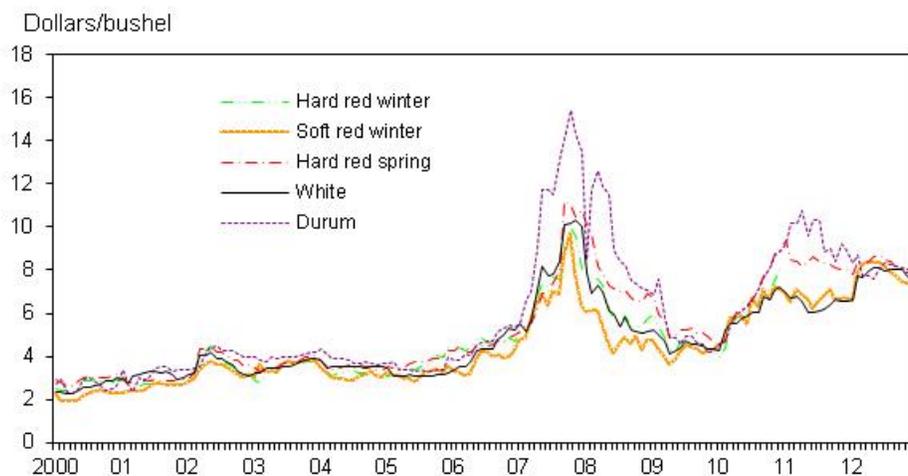
The net result of the supply and use changes from 2011/12 to 2012/13 was that HRW ending stocks were up 26 million bushels year to year. The **HRW ending stocks** for 2012/13 were 343 million bushels, with a stocks-to-use ratio of 35 percent, down slightly from 37 percent for 2011/12. The stocks-to-use ratio was 38 percent and 49 percent for 2010/11 and 2009/10, respectively. For comparison, the HRW ending stocks-to-use ratio was 14 percent in 2007/08, the year of the global wheat shortage. The HRW stocks-to-use ratio averaged 23 percent over the 5 years before 2007/08.

Monthly farmgate prices for HRW rose from a market year low of \$6.53 in June to their peak of \$8.49 in November. HRW prices then dropped to around \$7.50 per bushel for the final 3 months of the marketing year (fig. 7). The season-average price (SAP) at the farmgate for 2012/13 HRW was a record \$7.56 per bushel, up from \$6.92 and \$6.49 per bushel for 2011/12 and 2010/11, respectively.

### ***HRS Production Up from 2011 With More Favorable Weather and Expanded Area***

HRS production for 2012, at 505 million bushels, was up 107 million bushels from 2011, mostly because of sharply higher yields (up 8.8 bushels per acre) and slightly higher harvested area (table 3). Favorable spring weather on the Northern Plains allowed for early seeding and germination. The early start, adequate moisture, and favorable temperatures enhanced the crop's yield potential. These conditions reversed those of the previous year when excessive moisture and cool temperatures on the Northern Plains resulted in late seeding and prevented plantings. HRS plantings, at 11.7 million acres were up slightly from the 11.6 million acres in 2011. The h-to-p ratio, at 0.982, was slightly higher than the previous year's ratio of 0.975. Harvested area was up 0.2 million acres to equal 11.5 million acres.

Figure 7  
**Average monthly prices received by wheat farmers, June 2000-May 2013**



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*.

Table 3--Hard red spring wheat supply and demand<sup>1</sup>

Item	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Million acres										
Area:										
Planted	13.1	13.0	13.3	14.4	12.7	13.5	12.6	13.0	11.6	11.7
Harvested	12.7	12.5	12.9	13.4	12.4	12.8	12.3	12.6	11.3	11.5
Bushels per harvested acre										
Yield	39.2	42.2	36.0	32.2	36.3	39.9	44.5	45.1	35.2	44
Million bushels										
Supply:										
Beginning stocks	145	157	159	132	117	68	142	234	185	151
Production	500	525	467	432	450	512	548	570	398	505
Imports	9	8	12	50	48	45	41	28	35	44
Total supply	654	690	638	614	615	625	731	832	618	699
Domestic use:										
Food	223	228	227	236	233	224	239	247	223	228
Seed	19	21	21	19	20	17	17	14	19	13
Feed & residual	-17	-33	-22	-6	-11	32	27	46	-17	62
Total domestic	225	216	226	248	243	273	283	307	224	303
Exports	272	315	280	248	304	210	214	340	243	232
Total use	497	531	506	497	547	483	497	647	467	534
Ending stocks	157	159	132	117	68	142	234	185	151	165
Stocks-to-use ratio, %	32	30	26	24	12	29	47	29	32	31
Dollars per bushel										
Farm price 2/	\$3.63	\$3.51	\$3.70	\$4.48	\$7.16	\$7.39	\$5.26	\$6.54	\$8.38	\$8.27

Notes: <sup>1</sup>ERS estimates of area, yield, and domestic use.

<sup>2</sup>Season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, Economic Research Service, *Wheat Outlook*.

HRS **supplies** in 2012/13, at 699 million bushels, were up by 81 million bushels from the previous marketing year with higher production more than offsetting lower carryin stocks Imports were also higher. **Total use**, at 534 million bushels, was up 67 million bushels from 2011/12. Domestic use was up year to year while exports were below the previous marketing year.

The net result was higher HRS **ending stocks** for 2012/13. Ending stocks for 2012/13 were up 14 million bushels from 2011/12 to 165 million bushels. The HRS ending stocks-to-use ratio of 31 percent was nearly unchanged from 32 percent for 2011/12 and 29 percent for 2010/11. The ratios for these 3 years are less than the 47 percent for 2009/10. For comparison, the stocks-to-use ratio was 12 percent for the price-spike year of 2007/08. The average stocks-to-use ratio over the 5 years prior to 2007/08 was 29 percent.

Monthly **farmgate prices** for HRS began the marketing year with a low of \$7.81 per bushel. HRS prices then rose to a season high of \$8.69 per bushel by November before dropping back to the \$7.90 level at the end of the marketing year (fig. 7). The 2012/13 SAP at the farmgate for HRS was \$8.27 per bushel, down slightly from the record \$8.38 in 2011/12, but substantially higher than the \$6.54 in 2010/11.

### **SRW Production Down in 2012**

SRW **production** for 2012, at 420 million bushels, was down 38 million bushels from 2011 (table 4). The 2012 harvested area was down 0.4 million acres from 2011 to 7.0 million acres, as a result of reduced plantings. SRW seedings were down 0.5 million acres because a late row crop harvest resulted in late seedings and prevented plantings.

SRW **yields** were down 1.4 bushels per acre in 2012 because growing conditions were not as favorable as in 2011 when record high yields were set in Alabama, Louisiana, Michigan, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia. The average 2012 SRW yield was 60.3 bushels per acre.

SRW **supplies** for 2012/13, at 623 million bushels, were down 38 million bushels from those of 2011/12, as lower production and imports more than offset higher carryin stocks.

**Total SRW use**, at 499 million bushels, was up 23 million bushels compared with the previous marketing year, as higher exports more than offset lower domestic use.

SRW **ending stocks** for 2012/13, at 124 million bushels, were down 61 million bushels from those of 2011/12. The ending stocks-to-use ratio for 2012/13 was 25 percent, sharply less than the 39 percent for 2011/12. The 2012/13 ratio was also less than the 2010/11 and 2009/10 levels of 51 percent and 66 percent, respectively. The stocks-to-use ratio for 2007/08, the price-spike year, was 13 percent, much less than the average of the previous 5 years of 23 percent.

Monthly **farmgate prices** received by SRW producers began with a harvest-time low of \$6.59 per bushel and rose to a season high of \$8.38 in September. SRW prices then slipped lower during the remainder of the marketing year to end at 7.31 per bushel in May (fig. 7). The 2012/13 SAP at the farmgate for SRW was a record

\$7.26 per bushel, significantly higher than the 2011/12 and 2010/11 prices of \$6.78 and \$5.16, respectively.

Table 4--Soft red winter wheat supply and demand<sup>1</sup>

Item	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Million acres										
Area:										
Planted	8.3	8.2	6.1	7.4	8.6	11.2	8.3	5.3	8.6	8.1
Harvested	6.8	7.0	5.1	6.2	7.0	10.1	7.2	4.4	7.4	7.0
Bushels per harvested acre										
Yield	55.6	54.2	59.9	63.2	50.0	60.9	56.1	54.3	61.7	60.3
Million bushels										
Supply:										
Beginning stocks	55	64	88	106	109	55	171	242	171	185
Production	380	380	308	390	352	614	404	237	458	420
Imports	22	22	26	20	14	34	32	29	32	18
Total supply	457	466	423	515	475	702	607	508	661	623
Domestic use:										
Food	153	155	155	165	150	155	156	150	155	152
Seed	16	12	14	16	21	16	10	16	16	19
Feed & residual	87	89	71	80	41	161	90	61	140	135
Total domestic	256	255	241	261	212	332	256	228	310	306
Exports	138	122	76	145	208	199	109	109	165	193
Total use	393	378	317	406	420	531	365	337	476	499
Ending stocks	64	88	106	109	55	171	242	171	185	124
Stocks-to-use ratio, %	16	23	33	27	13	32	66	51	39	25
Dollars per bushel										
Farm price 2/	\$3.17	\$3.21	\$3.19	\$3.38	\$5.20	\$5.78	\$4.35	\$5.16	\$6.78	\$7.26

Notes: <sup>1</sup>ERS estimates of area, yield, and domestic use.

<sup>2</sup>Season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, Economic Research Service, *Wheat Outlook*.

### White Wheat Production Down for 2012

Total white wheat **production** for 2012, at 259 million bushels, was down 55 million bushels from 2011 (table 5). Total white wheat planted and harvested areas were 3.9 million acres and 3.8 million acres, respectively. Both planted and harvested areas were down 0.5 million acres from 2011. The all-white wheat yield for 2012 was 68.6 bushels per acre, down 5.4 bushels per acre from 2011, as hot and dry conditions occurred during kernel development in the Pacific Northwest.

The planted and harvested areas, production, and yield for white winter wheat were as follows (hard white winter = HWW and soft white winter = SWW):

2012	HWW	SWW
Planted area (million acres)	0.33	3.01
Harvested area (million acres)	0.29	2.91
Yield (bushels/acre)	46.1	71.6
Production (million bushels)	13.2	208.3

2011	HWW	SWW
Planted area (million acres)	0.32	3.28
Harvested area (million acres)	0.27	3.18
Yield (bushels/acre)	45.5	76.6
Production (million bushels)	12.4	243.7

The planted and harvested areas, production, and yield for white spring wheat were as follows (hard white spring = HWS and soft white spring = SWS):

2012	HWS	SWS
Planted area (million acres)	0.12	0.48
Harvested area (million acres)	0.11	0.46
Yield (bushels/acre)	74.3	62.7
Production (million bushels)	8.5	29.0

2011	HWS	SWS
Planted area (million acres)	0.15	0.66
Harvested area (million acres)	0.14	0.64
Yield (bushels/acre)	82.5	71.3
Production (million bushels)	11.9	45.6

Total 2012/13 white wheat **supplies**, at 330 million bushels, were down 76 million bushels from those of 2011/12 because of both lower beginning stocks and production. Imports were nearly unchanged. **Total use**, at 267 million bushels, was down 75 million bushels compared with 2011/12. Domestic use and exports were both lower in 2012/13.

Table 5--White wheat supply and demand<sup>1</sup>

Item	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Million acres										
Area:										
Planted	5.2	5.1	4.9	4.3	4.0	4.5	4.0	4.2	4.4	3.9
Harvested	5.0	4.8	4.7	4.1	3.7	4.3	3.8	4.0	4.2	3.8
Bushels per harvested acre										
Yield	59.5	64.5	63.7	61.5	59.1	59.5	62.4	68.0	74.0	68.6
Million bushels										
Supply:										
Beginning stocks	75	72	63	78	44	37	64	80	85	64
Production	297	305	297	251	221	255	237	275	314	259
Imports	11	11	10	10	9	8	9	7	8	7
Total supply	383	388	370	339	275	300	311	362	406	330
Domestic use:										
Food	85	75	85	85	85	85	83	85	85	85
Seed	7	6	6	5	6	5	6	6	5	6
Feed & residual	27	36	27	9	-23	10	-1	4	33	2
Total domestic	119	118	118	100	68	100	88	95	124	93
Exports	192	208	174	195	169	136	143	182	219	174
Total use	311	326	292	295	238	236	231	277	342	267
Ending stocks	72	63	78	44	37	64	80	85	64	63
Stocks-to-use ratio, %	23	19	27	15	16	27	35	31	19	24
Dollars per bushel										
Farm price 2/	\$3.54	\$3.52	\$3.13	\$4.14	\$7.23	\$6.01	\$4.52	\$5.88	\$6.42	\$7.88

Notes: <sup>1</sup>ERS estimates of area, yield, and domestic use.

<sup>2</sup>Season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, Economic Research Service, *Wheat Outlook*.

White wheat **ending stocks** for 2012/13, at 63 million bushels, were nearly unchanged from those of a year earlier. The ending stocks-to-use ratio for 2012/13 was 24 percent, greater than the 19 percent for 2011/12. The 2012/13 ratio was

substantially less than the 31 percent in 2010/11 and 35 percent in 2009/10. For the price-spike year of 2007/08, the stocks-to-use ratio was 16 percent, sharply lower than the average of the previous 5 years of 23 percent.

Monthly **farmgate prices** received by white wheat producers began with a harvest-time low of \$6.61 per bushel, then rose to a season high of \$8.14 in November. Monthly prices stayed at the \$8.00-per-bushel level for a few months before falling to \$7.42 at the end of the marketing year. (fig. 7). The 2012/13 SAP at the farmgate for white wheat was a record \$7.88 per bushel, significantly higher than the 2011/12 price of \$6.42 and the 2010/11 price of \$5.88 per bushel.

### *Durum Production Up Sharply for 2012*

Durum **production** was up 33 million bushels from 2011 to 83 million bushels for 2012, with higher planted and harvested areas and higher yields (table 6). The higher area and yields were the result of much improved spring conditions compared to 2011. In 2011, flooding and excessively wet conditions during the spring and early summer delayed and eventually reduced the area available for planting in Montana and North Dakota. Planted area was 2.15 million acres, up 0.78 million from 2011. This is a 57-percent year-to-year increase. The 2012 average yield was 38.8 bushels per acre, a 0.3-bushel-per-acre increase above 2011 because of timely seedings and more favorable weather.

Table 6--Durum supply and demand<sup>1</sup>

Item	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Million acres										
Area:										
Planted	2.9	2.6	2.8	1.9	2.2	2.7	2.6	2.6	1.4	2.2
Harvested	2.9	2.4	2.7	1.8	2.1	2.6	2.4	2.5	1.3	2.1
Bushels per harvested acre										
Yield	33.7	38.0	37.2	29.5	34.1	32.6	44.9	42.4	38.5	38.8
Million bushels										
Supply:										
Beginning stocks	28	26	38	40	21	8	25	35	35	25
Production	97	90	101	53	72	84	109	107	50	83
Imports	21	29	32	41	40	38	35	33	36	36
Total supply	145	145	171	135	134	130	169	173	122	144
Domestic use:										
Food	73	70	80	86	83	78	80	84	75	80
Seed	3	5	3	4	4	4	4	2	3	2
Feed & residual	-3	2	3	-15	-6	-1	6	8	-9	11
Total domestic	73	77	85	74	81	81	91	94	70	93
Exports	46	31	45	40	45	24	44	44	27	29
Total use	119	108	131	114	126	105	134	138	97	121
Ending stocks	26	38	40	21	8	25	35	35	25	23
Stocks-to-use ratio, %	22	35	31	18	6	24	26	25	26	19
Dollars per bushel										
Farm price <sup>2/</sup>	\$3.97	\$3.85	\$3.46	\$4.43	\$9.92	\$9.26	\$5.47	\$5.98	\$9.68	\$8.18

Notes: <sup>1</sup>ERS estimates of area, yield, and domestic use.

<sup>2</sup>Season-average price based on monthly prices weighted by monthly marketings.

Source: USDA, Economic Research Service, *Wheat Outlook*.

Durum **supplies** in 2012/13, at 144 million bushels, were 22 million bushels higher than those of a year earlier. Higher production more than offset lower carryin stocks. Imports were nearly unchanged. **Total use**, at 121 million bushels, was up 24 million bushels from that of 2011/12 as domestic use and exports were up 23 million bushels and 2 million bushels, respectively.

Ending durum wheat **stocks** for 2012/13, at 23 million bushels, were down 2 million bushels year to year. The ending stocks-to-use ratio for 2012/13 was 19 percent, less than the 26 percent for 2011/12. The 2010/11 and 2009/10 ratios were also 26 percent. The ratio for 2007/08 was only 7 percent, much lower than the average of 26 percent for the previous 5 years.

Monthly **farmgate prices** received by durum wheat producers began the 2012/13 marketing year at \$8.31 per bushel, then dropped to \$7.61 in October before rising to \$8.31 by December. Durum prices then fell to the low \$8.00-per-bushel range by the end of the marketing year (fig. 7). The SAP at the farmgate for 2012/13 for durum was \$8.18 per bushel, significantly less than the \$9.68 for 2011/12, but higher than the 2010/11 price of \$5.98 per bushel. Durum farmgate prices were record high in 2007/08 with a SAP of \$9.92 per bushel.