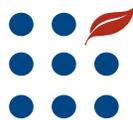




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Wheat Year in Review (Domestic): Supplies Drop More Than Total Use, Lowering Ending Stocks for 2011/12

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Abstract

Total U.S. wheat supplies for the 2011/12 marketing year (June 1, 2011-May 31, 2012) were below those of the previous year, as lower beginning stocks and lower production more than offset slightly higher imports. All domestic use was up slightly year to year with increases in food use, seed use, and feed and residual use. Exports were down substantially because of increased competition as Black Sea exporters recovered from the severe drought of the previous year. Though exports were down sharply, supplies were down even more, lowering 2011/12 ending stocks below the previous year's level. The season-average farm price for 2011/12 was at a record high at \$7.24, supported, in part, by high corn prices.

Keywords: Wheat, United States, world, production, feed, consumption, supply, use, stocks, price, U.S. Department of Agriculture, USDA, Economic Research Service, ERS

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Summary

The Economic Research Service publishes 12 monthly reports each year detailing the factors underlying the month-to-month changes in USDA'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 2011/12 domestic marketing year (June 1, 2011-May 31, 2012), covering supply, utilization, ending stocks, and prices.

The defining features of the 2011/12 marketing year included the adverse weather conditions that reduced hard wheat production in North America. Nearly half of the hard red winter (HRW) wheat area in the Central and Southern Plains was affected by a very severe drought that reduced yields and increased abandonment. In the northern Plains and adjoining areas of Canada, saturated soils, heavy snow melt and spring rains, along with widespread flooding reduced planted area and reduced yields of hard red spring (HRS) and durum wheat. Internationally, the recovery of Black Sea wheat production and exports from the very severe drought of 2010 sharply reduced U.S. exports from 2010/11.

Supplies. Total U.S. supplies for 2010/11, at 2,974 million bushels, were down 305 million bushels from those of the previous year as much lower carryin stocks and production were only slightly offset by higher imports. Beginning stocks for 2011/12 were 862 million bushels, 114 million bushels less than in 2010/11.

All-wheat production was estimated at 1,999 million bushels for 2011, down 208 million bushels from 2010. All-wheat harvested area for 2011 was 54.4 million acres, up 0.8 million acres from that of the previous year. The U.S. all-wheat yield was 43.7 bushels per acre, down 2.6 bushels from the record high of 46.3 bushels per acre in 2010.

Utilization. Domestic use of wheat in 2011/12 was up year to year by 54 million bushels to 1,182 million bushels. Rising population and a slightly lower extraction rate than in the previous year offset the unchanged per capita flour use, resulting in a slight increase in bushels of wheat milled compared with the year before. Feed and residual use was up 24 percent from the previous marketing year, as high corn prices encouraged wheat feeding. U.S. exports for 2011/12 were down 239 million bushels from 2010/11 to 1,050 million bushels with the recovery of Black Sea exports from the severe 2010 drought. Relatively high U.S. wheat prices also reduced foreign demand for U.S. wheat.

Ending stocks. Total U.S. ending stocks for 2011/12, at 743 million bushels, were down 119 million bushels, or 14 percent, from those of 2010/11. Despite this large decline, 2011/12 ending stocks were the third-highest of the past decade and still 437 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 2011/12 was a record \$7.24 per bushel. This high SAP was supported, in part, by high corn prices. The previous record high was \$6.78 in 2008/09.

All Wheat Situation for 2011/12

U.S. 2011/12 Wheat Production and Exports in a Global Context

U.S. 2011 wheat production was sharply reduced from 2010 by adverse weather conditions on the Plains. Despite this reduction in U.S. production, global production was up 43.9 million metric tons (mmt) from 2010/11 to a record 696.1 mmt (the United States was the fourth largest wheat producer after EU, China, and India). The Black Sea (Russia, Kazakhstan, and Ukraine) production rebounded after the severe drought of the previous year and record Indian and Australian production levels were crucial to record global production.

The rebound in Black Sea production allowed those 2011/12 exports to recover, up 25.4 mmt from the previous year. Record Black Sea and Australian exports, and relatively high U.S. wheat prices, contributed to reduced exports of U.S. wheat. U.S. share of world wheat trade dropped from 27 percent in 2010/11 to 18 percent for 2011/12. Global wheat trade in 2011/12 was the second largest on record and was key to increased global consumption.

Global consumption, at 696.1 mmt, set a record for the fourth consecutive year. Part of the increased global consumption was a significant increase in wheat feeding from the previous year, up 25 percent (28.9 mmt) to a record 145.3 mmt. This increase in global wheat feeding resulted from substituting wheat for corn. Tight global corn supplies and large global wheat supplies created the price incentive for this substitution in feed rations. Without this substitution of wheat for corn, global ending stocks of wheat would have been higher and corn ending stocks lower. Global wheat prices would likely have been lower and global corn prices higher. Global livestock and poultry production would also likely have been lower.

Global ending stocks were nearly unchanged from the previous year at 197.9 mmt. These stocks are down slightly from a recent peak of 200.8 mmt in 2009/10 and down from the record 210.7 mmt in 1999/00.

U.S. Supplies for 2011/12

Total U.S. supplies for 2011/12, at 2,974 million bushels, down 305 million bushels from the previous year (table 1). Much lower carryin stocks and production were only slightly offset by higher imports.

Beginning Stocks. Beginning stocks for 2011/12 were 862 million bushels and were down 114 million bushels from 2010/11. The 2010/11 beginning stocks were the largest since 1988/89.

Imports. Imports for 2011/12, at 112 million bushels, were up 15 million bushels from 2010/11.

Production. U.S. all-wheat production was 1,999 million bushels for 2011, down 208 million bushels from that of 2010. All-wheat harvested area for 2011 was 45.7 million acres, down 1.9 million acres from that of the previous year. The U.S. all-wheat yield was 43.7 bushels per acre, down 2.6 bushels from 2010. The 2010 yield was a record 46.3 bushels per acre exceeding the previous record of 44.9 bushels per acre in 2008.

U.S. planted area for 2011/12, at 54.4 million acres, was up 0.8 million acres from the 2010 acreage of 53.6 million, as the large decline in spring wheat seedings was more than offset by the increase in winter wheat seedings. The increased winter wheat seedings were primarily the result of higher soft red winter (SRW) seedings. The 2011 SRW crop area recovered from 2010, when a rain-delayed row-crop harvest and low prices reduced SRW seedings in fall 2009. Winter wheat seedings in 2010 were the lowest since 1913. The large decline in 2011 spring wheat seedings was due to reduced seedings of both hard red spring (HRS) and durum wheat in the Northern Plains. Excessive moisture and cool temperatures on the Northern Plains delayed seeding of the crops and resulted in much larger than usual prevented plantings.

Despite the year-to-year increase in seedings for 2011, U.S. wheat acreage has been in a long-term downward trend since the early 1980s. 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, 2012-21.”

USDA Wheat Baseline, 2012-21

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. Details about the 2012-21 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 briefing room.

The 2012-21 wheat projections highlight many long-term challenges facing the U.S. wheat sector:

- 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—arising 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/crops/wheat/usda-wheat-baseline,-2012-21.aspx>.

U.S. all-wheat harvested area for 2011 decreased more than planted area because the severe drought in the Central and Southern Plains led to high abandonment rates. While the all-wheat planted area was down 0.8 million acres, the all-wheat-harvested area was down 1.9 million acres, mostly due to abandoned hard red winter (HRW) acres on the Central and Southern Plains. The HRW harvest-to-planted ratio was 0.753, while the SRW and spring wheat harvest-to-planted ratios were 0.867 and 0.973, respectively. The abandonment rate for HRW is highly variable because of the frequent occurrence of drought in the Central and Southern Plains. Over the ten 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.

The adverse weather conditions in the Plains States resulted in reduced average yields for HRW, HRS, and durum crops. Year to year, HRW, HRS, and durum yields were down 6.0, 9.9, and 3.6 bushels per acre, respectively. SRW and white yields were up year to year by 7.4 and 6.0 bushels per acre, respectively, because of more favorable weather than the year before.

Supplies of high-protein hard wheats were more plentiful for the 2011 crop, but were still not sufficient to satisfy domestic demand. Consequently, HRS and durum imports were up year to year. The drought and high temperatures on the Central and Southern Plains and the high temperatures on the Northern Plains resulted in smaller, less plump kernels than in the previous 2 years boosting protein levels. This higher protein HRW crop was blended with lower protein HRW carry in stocks from the previous year helping to partly offset the need for imported HRS wheat.

The 2011 HRS crop was reduced by a greater percentage from 2010 than the HRW crop, resulting in a significant price premium of HRS over HRW. This premium provided an incentive for millers to replace HRS with the high-protein 2011 HRW crop in some flour blends. Another consequence of the more plentiful supplies of higher protein hard wheat was the reduction or the elimination of protein premiums for the 2011 crop compared to the previous year.

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

Item and unit		2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Area:							
Planted	Million acres	57.3	60.5	63.2	59.2	53.6	54.4
Harvested	Million acres	46.8	51.0	55.7	49.9	47.6	45.7
Yield	Bushels per acre	38.6	40.2	44.9	44.5	46.3	43.7
Supply:							
Beginning stocks	Million bushels	571	456	306	657	976	862
Production	Million bushels	1,808	2,051	2,499	2,218	2,207	1,999
Imports 1/	Million bushels	122	113	127	119	97	112
Total supply	Million bushels	2,501	2,620	2,932	2,993	3,279	2,974
Disappearance:							
Food use	Million bushels	938	948	927	919	926	941
Seed use	Million bushels	82	88	78	69	71	76
Feed and residual use	Million bushels	117	16	255	150	132	164
Total domestic use	Million bushels	1,137	1,051	1,260	1,138	1,128	1,182
Exports 1/	Million bushels	908	1,263	1,015	879	1,289	1,050
Total disappearance	Million bushels	2,045	2,314	2,275	2,018	2,417	2,231
Ending stocks	Million bushels	456	306	657	976	862	743
CCC inventory 2/	Million bushels	41	0	0	0	0	0
Stocks-to-use ratio, %		22.3	13.2	28.9	48.4	35.7	33.2
Loan rate	Dollars per bushel	2.75	2.75	2.75	2.75	2.94	2.94
Contract/direct payment rate	Dollars per bushel	0.52	0.52	0.52	0.52	0.52	0.52
Farm price 3/	Dollars per bushel	4.26	6.48	6.78	4.87	5.70	7.24

Totals may not add due to rounding.

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

2/ Stocks owned by USDA's Commodity Credit Corporation (CCC). Most CCC-owned inventory was in the Bill Emerson Humanitarian Trust.

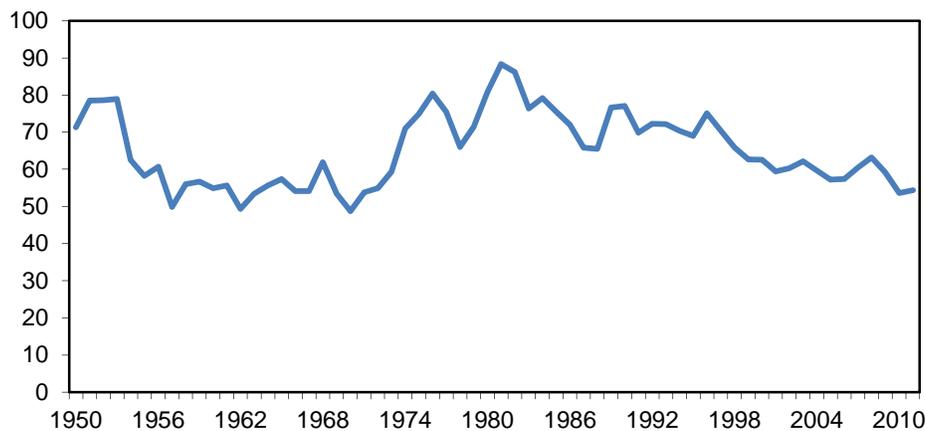
3/ U.S. season-average price based on monthly prices weighted by monthly marketings.

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

Figure 1

U.S. wheat planted area, 1950-2011 1/

Million acres



1/ Includes winter wheat area planted in the preceding fall.

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

Domestic Demand Exceeds Foreign Demand for 2008/09

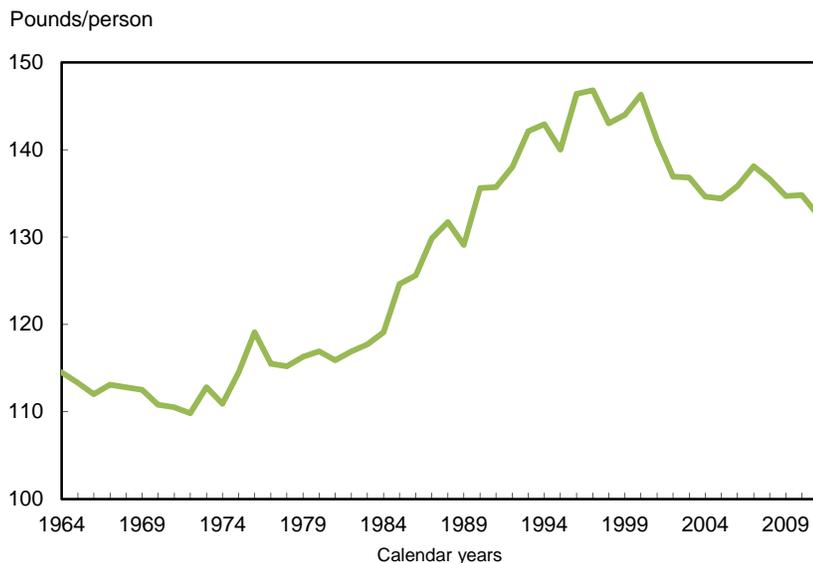
Domestic use in 2011/12 increased about 5 percent year to year and was 132 million bushels greater than U.S. exports for 2011/12. For comparison, domestic use exceeded exports in 3 of the previous 5 marketing years. Total domestic use in 2011/12, at 1,182 million bushels, was up 54 million bushels from 2010/11 with increases in food use, seed use, and feed and residual use. U.S. exports, at 1,050 million bushels, were down sharply by 239 million bushels from 2010/11 as the recovery of Black Sea exports from the severe 2010 drought and high U.S. wheat prices reduced foreign demand for U.S. wheat.

Total food use. Total domestic food use of wheat, at 941 million bushels, was up 15 million bushels from 2010/11. Rising population and a slightly lower extraction rate than in the previous years offset the unchanged per capita flour use, resulting in 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 are kept adjusted to optimize flour extraction. Kernels grow to be more plump 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 more frequently adjust their mills to maximize flour extraction.

The 2011/12 flour extraction rate continued at a very high level, by historical standards, but not quite as high as the recent marketing years. The 2011 crop was stressed more than in recent years by hot dry weather. High flour extraction rates mean that fewer bushels of wheat need to be milled to produce a given quantity of flour. At 76.3 percent, the 2011/12 rate was down slightly from the 76.9-percent rate for the 2010/11 marketing year and down from the 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 calendar year 2011 is estimated at 132.5 pounds. Per capita flour use dropped 2.3 pounds from the 2010 estimate and is now down 5.8 pounds from 2007, a recent peak (fig. 2). Per capita flour use in 2011 is 1.9 pounds lower than the previous low of 134.3 in 2005. This 2005 low was reached after sharp declines in per capita use from 146.3 pounds in 2000, 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 2011



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, the desire of consumers 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.

Feed and residual use. Feed and residual use for 2011/12 was up 32 million bushels from 2010/11 to 164 million bushels. Feed and residual use was up 24 percent from the previous marketing year as high corn prices encouraged wheat used for livestock feeding.

Exports. U.S. wheat exports for 2011/12 totaled 1,050 million bushels, down from 1,289 million bushels for 2010/11. Exports declined year to year for every class but SRW and white wheat.

With the recovery from the previous year's drought, the decision made by the Russian Government to lift its more than 10-month grain export embargo on July 1, 2011, ushered in strong competition to start the 2011/12 marketing year. Russia's low prices made its wheat very competitive against higher priced U.S. wheat.

Weather conditions affecting the global 2011 wheat crop. The North American wheat crop harvested in 2011 was adversely affected by two weather events. The very severe drought and high temperatures in the Central and Southern Plains reduced the production of U.S. HRW wheat. The moisture and heat stress also resulted in the HRW having a higher protein content than the previous two years. The Northern Plains and Canada had the opposite problem in spring 2011. Unlike

growing conditions in the Central and Southern Plains, these areas experienced too much moisture and cool temperatures. These North American HRS and durum wheat areas came out of winter with a heavy snow pack followed by heavier than normal spring rains. With the excessive moisture and cool temperatures, the planting season was significantly delayed. Many acres in the Northern Plains and Canada were not planted. In North Dakota, for example, 5.5 million acres that farmers intended to seed were never planted, compared with 2.0 million in 2009 and 1.7 in 2010. There was enough heat stress on the Northern Plains to result in higher protein HRS than a year ago. Good growing conditions resulted in higher yields in Canada, offsetting the losses due to intended plantings that did not materialize.

Global wheat supplies were boosted by the recovery of Russia, Ukraine, and Kazakhstan wheat production from the severe 2010 drought. In 2011, output from Russia, Ukraine, and Kazakhstan was up 49 percent from 2010. The severe 2010 drought that hit these countries reduced their production to about two-thirds of their 2009 output. These production losses were a major factor in the 2010/11 price spike. With exports of 18.6 mmt, Russia was the world's 4th largest wheat exporter in the 2009/10 marketing year, but the country exported only 4.0 mmt in 2010/11. In 2011/12, Russia exported 21.6 mmt. Kazakhstan's exports rose from 4.9 mmt. in 2010/11 to 11.4 mmt in 2011/12.

A very dry spring in some wheat-producing parts of Europe affected total production negatively. Germany and France were affected the most and both saw their potential yields decline as a result. Later in the season, rains reduced the impact of the early dry weather, but higher European and world wheat prices were observed while the heat persisted.

Generally, good rainfall led to record wheat production in Australia. However, part of the crop was damaged by an overabundance of late-season rainfall. As a result, Australia exported record quantities of low-cost feed-quality wheat in 2011/12.

Ending stocks. Total U.S. ending stocks for 2011/12, at 743 million bushels, were down 119 million bushels, or 14 percent, from those of 2010/11. However, the 2011/12 ending stocks were still 437 million bushels above 2007/08 ending stocks, which were the lowest since the early 1950s. (fig. 3). The U.S. stocks-to-use ratio for 2011/12 was 33 percent, lower than the 36 ratio for 2010/11 and 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. World production recovered in 2008/09 and reached a record high as farmers responded to the 2007/08 price spike with increased plantings, and favorable weather boosted yields. World demand for U.S. wheat slowed, and the U.S. stocks-to-use ratio climbed to 29 percent in 2008/09. With continued high global wheat production and U.S. prices remaining historically high, U.S. exports slowed even more in 2009/10 and the U.S. stocks-to-use ratio soared to 48 percent.

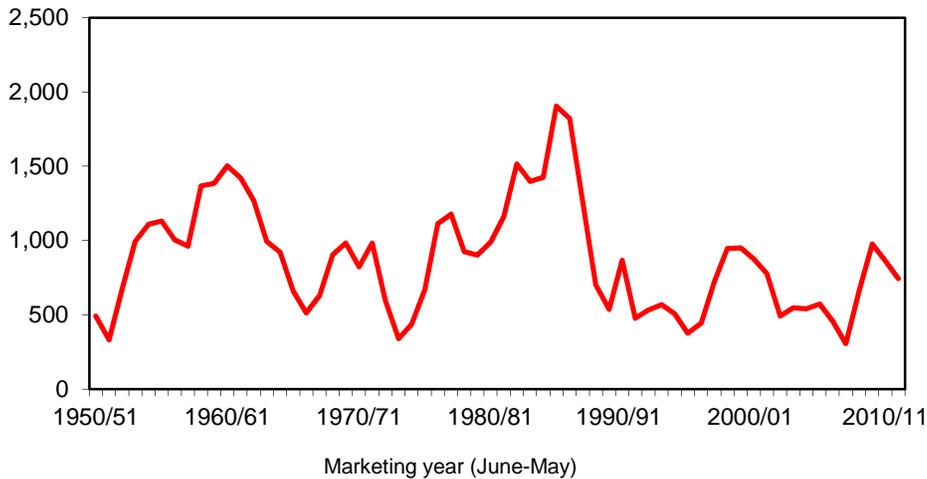
Monthly Wheat Prices

In 2011/12, U.S. monthly wheat prices were very high historically, supported by high corn prices. The monthly price dropped to a harvest time low of \$7.10 per bushel in July and quickly rose to a marketing year high of \$7.59 in August (fig. 4). The monthly price remained above \$7.00 per bushel for the rest of the marketing year until May, when the price dropped to \$6.67. The season average price (SAP) was a record high of \$7.24 per bushel. The previous record high SAP was \$6.78 per bushel in 2008/09.

Figure 3

U.S. wheat ending stocks, 1950/51-2011/12

Million bushels

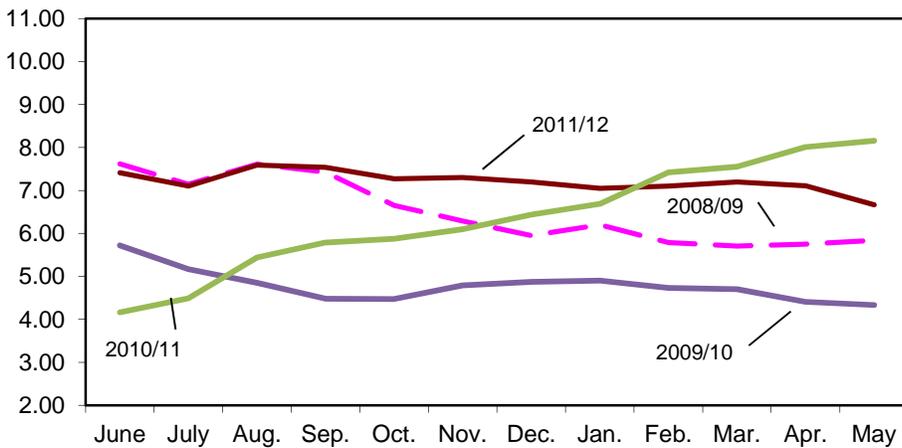


Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

Figure 4

Monthly wheat prices for 2011/12 have rallied since June

Dollars/bushel



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

High Prices Result in Low Farm Program Expenditures for 2008 Crop

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.¹ 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, 2011 crop marketing loan activity for wheat was low. Marketing loans were made on only 36.0 million bushels (2 percent of production), down from 66.5 million bushels for 2010 and 103 million bushels for 2009. Marketing loan benefits (including marketing loan gains, LDPs, and eLDPs (electronic LDPs)) were zero for the 2011 crop year, down from \$106 million for the 2010 crop year and down from \$109 million for the 2009 crop year. The vast majority of these payments in 2010 and 2009 were made for durum wheat.

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 2011/12 season average at \$7.24 per bushel, no CCPs were made for wheat base acres for the 2010 crop. The CCP price trigger is \$3.65 per bushel.

Crop Insurance Subsidies. Since the 2001 crop year, roughly 75 percent of planted wheat acres have been insured annually under the Federal crop insurance program, including both yield and revenue products. In 2011, about 48 million wheat acres were insured. 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 \$1.8 billion were paid to wheat producers in crop insurance indemnities on the 2011 crop. Participation in revenue insurance rose in 2011 to 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.

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

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 2012 is \$184 million.

The share of U.S. wheat exports under Section 416 donations and other food assistance programs dropped sharply in the middle of this 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 13 percent for the 3 years ending with 2010/11. For levels by program see table 27 at <http://www.ers.usda.gov/data-products/wheat-data.aspx>.

Wheat Situation by Class 2011/12

HRW, HRS and Durum Have Large Year-to-Year Declines in Production

Three classes of wheat had relatively large year-to-year decreases in production. Year-to-year production decreases from 2010/11 were: durum, -53 percent; HRS, -30 percent; and HRW, -23 percent. Production was up for the other two classes: SRW, +93 percent; and white, +14 percent.

Hard Red Winter (HRW) Production Down in 2011 With Drought Conditions

HRW production for 2011, at 780 million bushels, was down 238 million bushels from 2010 with smaller harvested area and lower yields (table 2). Year to year, the planted area for the 2011 crop was slightly smaller than 2010, but the rate of abandonment was up sharply and yields are down from the previous year due to the severe drought on the Central and Southern Plains. Planted and harvested acres were down from 2010 in most of the major HRW growing States. The harvest-to-planted ratio for 2011 was 0.753, compared with an average of .842 for the previous 5 years.

HRW planted area for 2011 was 28.5 million acres, down just 0.1 million acres from 2010. However, with the high rate of abandonment on the Plains, harvested area was down 2.6 million acres from the previous year.

The drought in 2011 also resulted in lower HRW wheat yields than in 2010. HRW wheat yields averaged 36.4 bushels per acre in 2011, down from 42.4 bushels in 2010.

While the drought lowered HRW yields on the Central and Southern Plains, this unfavorable weather also produced smaller wheat kernels with a higher protein content than in the previous year (table 3). By contrast, favorable weather typically produces high yields with plump wheat kernels and a low-protein content.

The drought resulted in a relative surplus of high-protein HRW wheat for making bread products compared to the previous year. This relative surplus of high-protein HRW wheat sharply reduced or eliminated protein premiums for the 2011 crop. This high-protein HRW was blended with low-protein HRW carryin stocks from the previous years and substituted for HRS for some bread products. Adverse weather conditions reduced HRS supplies to such a level that prices reflected a significant premium relative to HRW with equivalent protein content. This price premium provided the incentive for millers to substitute HRW for HRS in some flour blends.

Table 2--Hard red w inter w heat supply and demand 1/

Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
<i>Million acres</i>										
Area:										
Planted	30.1	32.6	30.8	30.0	29.3	33.0	31.3	31.7	28.6	28.5
Harvested	19.9	25.6	23.4	24.6	21.3	25.7	25.9	24.1	24.0	21.4
<i>Bushels per harvested acre</i>										
Yield	31.1	41.7	36.6	37.8	32.0	37.2	39.9	38.1	42.4	36.4
<i>Million bushels</i>										
Supply:										
Beg. stocks	363	188	227	193	215	165	138	254	385	386
Production	620	1,071	856	930	682	956	1,035	920	1,018	780
Imports	0	0	1	0	1	1	2	2	1	0
Total supply	984	1,260	1,084	1,123	898	1,121	1,174	1,176	1,404	1,166
Domestic use:										
Food	377	378	382	370	366	397	385	361	359	404
Seed	37	35	33	33	37	35	35	32	32	33
Feed & residual	74	109	86	77	50	15	52	28	11	15
Total domestic	488	522	502	481	453	448	472	421	403	452
Exports	308	510	389	428	280	536	447	370	616	397
Total use	795	1,033	891	908	733	984	919	791	1,018	849
Ending stocks	188	227	193	215	165	138	254	385	386	317
Stocks-to-use ratio, %	24	22	22	24	23	14	28	49	38	37

1/ ERS estimates of area, yield, and domestic use.

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

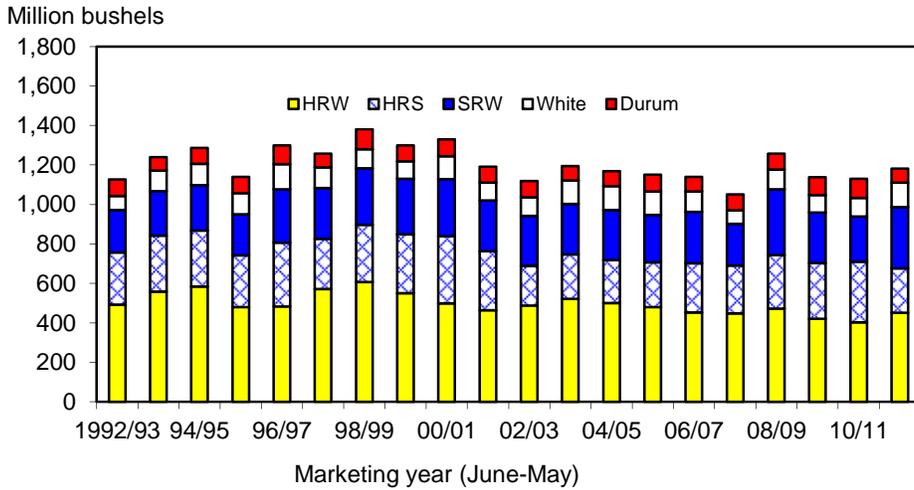
Table 3--Summary of wheat class qualities for 2011, 2010, and 5-year average

Class	Protein (Percent)	Flour/semolina extraction (Percent)	Test weight (Pounds/bushel)	Wheat falling numbers (Seconds)
2011 wheat crop:				
Hard red winter	12.3	70.4	60.8	403
Hard red spring	14.8	68.5	60.4	368
Soft red winter	10.2	71.4	58.8	328
Soft white	9.2	75.4	58.8	306
Great Plains durum	13.6	64.5	59.9	372
2010 wheat crop:				
Hard red winter	11.8	70.9	61.0	406
Hard red spring	13.7	70.0	61.6	387
Soft red winter	10.3	70.0	57.9	333
Soft white	9.7	71.0	59.6	337
Great Plains durum	13.4	66.3	60.0	335
5-year average:				
Hard red winter	12.3	70.3	60.4	413
Hard red spring	14.1	68.8	61.1	401
Soft red winter	10.1	68.9	58.9	329
Soft white	10.4	70.3	59.7	330
Great Plains durum	14.4	64.4	60.3	361

Source: U.S. Wheat Associates, *Crop Quality Report 2010*.

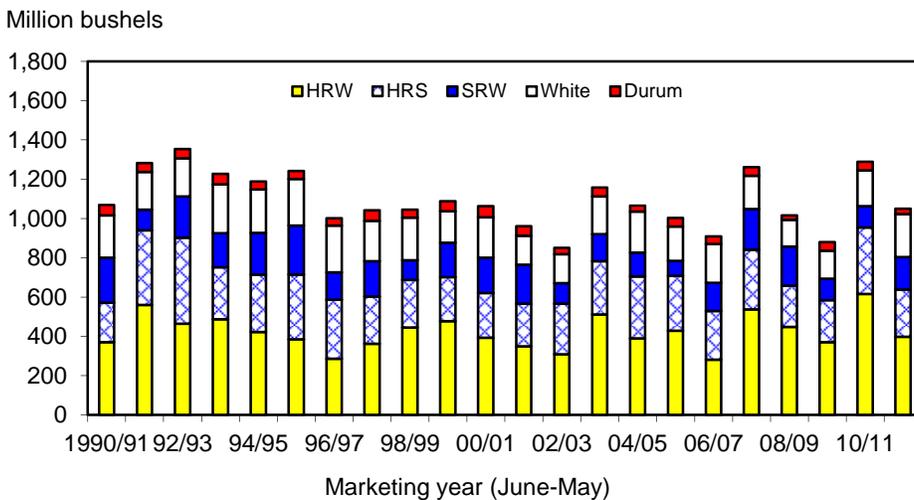
Consistent with sharply reduced production, HRW supplies in 2011/12, at 1,166 million bushels, were down 238 million bushels from the previous marketing year. Imports and carryin stocks were nearly unchanged. Total use, at 849 million bushels, was 169 million bushels lower than the previous year (fig. 5). Domestic use was up 49 million bushels from 2010/11, while exports were down 219 million bushels (fig. 6).

Figure 5
U.S. domestic wheat use for 2011/12 slightly higher than previous year



HRW = Hard red winter. HRS = Hard red spring. SRW = Soft red winter.
 Source: USDA, Economic Research Service, *Wheat Outlook*.

Figure 6
Wheat exports down sharply in 2011/12



HRW = Hard red winter. HRS = Hard red spring. SRW = Soft red winter.
 Source: USDA, Economic Research Service, *Wheat Outlook*.

The net result of the supply and use changes from 2010/11 to 2011/12 was that HRW ending stocks were down 69 million bushels year to year. The HRW ending stocks for 2011/12 were 317 million bushels, with a stocks-to-use ratio of 37 percent, down slightly from a 38-percent ratio for 2010/11, and down from a 49-percent ratio for 2009/10. 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 dropped to a harvest-time low of \$6.96 per bushel in July, then rose to their marketing year high of \$7.42 in August, before dropping below \$7.00. Next, prices moved sideways before falling to a marketing year low of \$6.35 per bushel in May (fig. 7). The season-average price (SAP) at the farmgate for 2011/12 HRW was \$6.92 per bushel, up from \$6.49 per bushel for 2010/11.

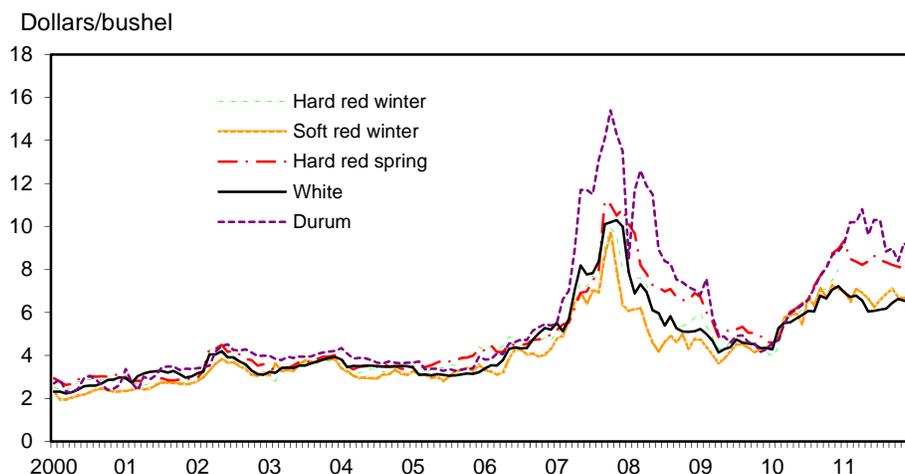
Hard Red Spring (HRS) Production Down in 2011 Due to Unfavorable Weather and Reduced Area

HRS production for 2011, at 398 million bushels, was down 172 million bushels from 2010 because of both sharply reduced planted and harvested areas and sharply lower yields (table 4). Excessive moisture and cool temperatures on the Northern Plains resulted in late seeding and prevented plantings. HRS plantings, at 11.6 million acres were down 1.4 million acres from 2010. The harvested-to-planted ratio, at 0.975, was unchanged from the previous year. Harvested area was down 1.4 million acres to 11.3 million.

Due to wet spring conditions, planting got off to a slow start in most of the major spring wheat-producing States. As of April 24, for example, USDA's National Agricultural Statistics Service (NASS) reported that 6 percent of the Nation's spring wheat crop had been planted, 19 points behind the 5-year average. The excessively wet conditions lingered into early summer and eventually significantly reduced the total acres planted in North Dakota and Montana. By May 29, NASS reported that only 68 percent of the Nation's spring wheat crop had been planted, 27 points behind the normal pace.

The 2011 HRS wheat crop was heat-stressed during the summer growing season, producing a crop with a higher protein content than the previous years. The result was much reduced protein premiums for the growers compared to the previous year.

Figure 7
Average monthly prices received by wheat farmers, June 2000-May 2012



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

Table 4--Hard red spring wheat supply and demand 1/

Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Million acres										
Area:										
Planted	14.8	13.1	13.0	13.3	14.4	12.7	13.5	12.6	13.0	11.6
Harvested	12.6	12.7	12.5	12.9	13.4	12.4	12.8	12.3	12.6	11.3
Bushels per harvested acre										
Yield	27.9	39.2	42.2	36.0	32.2	36.3	39.9	44.5	45.1	35.2
Million bushels										
Supply:										
Beg. stocks	230	145	157	159	132	117	68	142	234	185
Production	351	500	525	467	432	450	512	548	570	398
Imports	23	9	8	12	50	48	45	41	28	35
Total supply	605	654	690	638	614	615	625	731	832	618
Domestic use:										
Food	215	223	228	227	236	233	224	239	247	223
Seed	20	19	21	21	19	20	17	17	14	19
Feed & residual	-33	-17	-33	-22	-6	-11	32	27	46	-17
Total domestic	202	225	216	226	248	243	273	283	308	225
Exports	258	272	315	280	248	304	210	214	339	242
Total use	460	497	531	506	497	547	483	497	647	467
Ending stocks	145	157	159	132	117	68	142	234	185	151
Stocks-to-use ratio, %	32	32	30	26	24	12	29	47	29	32

1/ ERS estimates of area, yield, and domestic use.

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

HRS supplies in 2011/12, at 618 million bushels, were down by 214 million bushels from the previous marketing year with reduced production and carryin stocks. Imports were higher. Total use, at 467 million bushels, was down 180 million bushels from 2010/11. Domestic use was down 83 million bushels and exports fell 97 million bushels below the previous marketing year.

The net result was lower HRS ending stocks for 2011/12, down 34 million bushels from 2010/11 to 151 million bushels. The HRS ending stocks-to-use ratio of 32 percent was up slightly from 29 percent for 2010/11, but was down from 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 dropped to a fall low of \$8.21 per bushel in September before rising to \$8.65 in November, and then drifting down to a marketing year low of \$8.01 in May (fig. 7). The marketing-year high of \$9.34 per bushel was observed in June. The 2011/12 SAP at the farmgate for HRS was \$8.38, significantly higher than the 2010/11 price of \$6.54 per bushel.

Soft Red Winter (SRW) Production Up Sharply in 2011

SRW production for 2011, at 458 million bushels, was up 221 million bushels from 2010 (table 5). The 2011 harvested area was up 3.0 million acres from 2010 to 7.4 million acres due to expanded plantings. Planted area for the 2011 crop was up 3.3 million as the area seeded recovered from the previous year. Limited seeding due to a late row-crop harvest and early wet weather reduced planted area in 2010. Illinois, Indiana, Missouri, and Ohio set record lows for planted acres for the 2010 crop. Production in 2010 was down 50 percent or more from 2009 in Arkansas, Georgia, Illinois, Indiana, Missouri, and North Carolina.

SRW yields in 2011 were up from the previous year because of very favorable growing conditions. The average 2011 SRW yield was 61.7 bushels per acre, up 7.4 bushels from 2010. NASS *Crop Production Reports* noted that excellent weather conditions through much of the season resulted in record high yields in Alabama, Louisiana, Michigan, Mississippi, North Carolina, South Carolina, Tennessee, and Virginia.

SRW supplies for 2011/12, at 661 million bushels, were up 153 million bushels from those of 2010/11 as sharply increased production more than offset lower carryin stocks. Imports were slightly higher. Total SRW use, at 476 million bushels, was up 139 million bushels compared with the previous marketing year because of higher domestic use and higher exports.

Despite the big increase in total use, ending stocks for 2011/12, at 185 million bushels, were up 14 million bushels from that of 2010/11. The ending stocks-to-use ratio for 2011/12 was 39 percent, below the 2010/11 level of 51 percent and substantially below the 66 percent ratio for 2009/10. 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 initially dropped to a harvest low of \$6.50 per bushel in July, then fluctuated between a marketing year low of \$6.25 in November and a marketing year high of \$7.10 in February (fig. 7). The 2011/12 SAP at the farmgate for SRW was \$6.78 per bushel, significantly higher than the 2010/11 price of \$5.16 per bushel.

White Wheat Production Up for 2011

The Pacific Northwest (PNW) had enough soil moisture at planting, through the winter, and during the 2011 crop growing season. Cool temperatures generally

prevailed during the early to middle growing season. Dry conditions prevailed during the wheat harvest. These weather conditions contributed to a crop with average to above-average yield in most dryland farming areas of the PNW.

Total white wheat production for 2011, at 314 million bushels, was up 39 million bushels from 2010 (table 6). Of this 2011 total, 244 million bushels were soft white winter (SWW), 12 million bushels were hard white winter (HWW), 46 million bushels were soft white spring (SWS), and 12 million bushels were hard white spring (HWS). The planted and harvested areas, respectively, were 3.282 million acres and 3.181 million for SWW; 0.323 million acres and 0.272 million for HWW; 0.657 million acres and 0.640 million for SWS; and 0.148 million acres and 0.144 million for HWS. The 2011 yields by type of white wheat were 76.6 bushel per acre for SWW, 45.5 bushel per acre for HWW, 71.3 bushel per acre for SWS, and 82.5 bushel per acre for HWS.

Total 2011/12 white wheat supplies, at 406 million bushels, were up 44 million bushels from those of 2010/11 because higher beginning stocks and production. Imports were up slightly. Total use, at 342 million bushels, was up 65 million bushels compared with 2010/11; with domestic use and exports up, 36 million bushels and 29 million bushels, respectively.

Table 5--Soft red winter wheat supply and demand 1/

Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
<i>Million acres</i>										
Area:										
Planted	8.1	8.3	8.2	6.1	7.4	8.6	11.2	8.3	5.3	8.6
Harvested	6.5	6.8	7.0	5.1	6.2	7.0	10.1	7.2	4.4	7.4
<i>Bushels per harvested acre</i>										
Yield	49.6	55.6	54.2	59.9	63.2	50.0	60.9	56.1	54.3	61.7
<i>Million bushels</i>										
Supply:										
Beg. stocks	78	55	64	88	106	109	55	171	242	171
Production	321	380	380	308	390	352	614	404	237	458
Imports	13	22	22	26	20	14	34	32	29	32
Total supply	412	457	466	423	515	475	702	607	508	661
Domestic use:										
Food	165	153	155	155	165	150	155	156	150	155
Seed	16	16	12	14	16	21	16	10	16	15
Feed & residual	72	87	89	71	80	41	161	90	62	140
Total domestic	253	256	255	241	261	212	332	256	228	311
Exports	105	138	122	76	145	208	199	109	109	165
Total use	357	393	378	317	406	420	531	365	337	476
Ending stocks	55	64	88	106	109	55	171	242	171	185
Stocks-to-use ratio, %	15	16	23	33	27	13	32	66	51	39

1/ ERS estimates of area, yield, and domestic use.

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

Table 6--White wheat supply and demand 1/

Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
<i>Million acres</i>										
Area:										
Planted	4.4	5.2	5.1	4.9	4.3	4.0	4.5	4.0	4.2	4.4
Harvested	4.1	5.0	4.8	4.7	4.1	3.7	4.3	3.8	4.0	4.2
<i>Bushels per harvested acre</i>										
Yield	56.4	59.5	64.5	63.7	61.5	59.1	59.5	62.4	68.0	74.0
<i>Million bushels</i>										
Supply:										
Beg. stocks	73	75	72	63	78	44	37	64	80	85
Production	233	297	305	297	251	221	255	237	275	314
Imports	11	11	11	10	10	9	8	9	7	8
Total supply	317	383	388	370	339	275	300	311	362	406
Domestic use:										
Food	80	85	75	85	85	85	85	83	85	85
Seed	7	7	6	6	5	6	5	6	6	5
Feed & residual	8	27	36	27	9	-23	10	-1	4	34
Total domestic	94	119	118	118	100	68	100	88	95	124
Exports	147	192	208	174	195	169	136	143	182	218
Total use	242	311	326	292	295	238	236	231	277	342
Ending stocks	75	72	63	78	44	37	64	80	85	64
Stocks-to-use ratio, %	31	23	19	27	15	16	27	35	31	19

1/ ERS estimates of area, yield, and domestic use.

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

White wheat ending stocks for 2011/12, at 64 million bushels, were down 21 million bushels from those of a year earlier. The ending stocks-to-use ratio for 2011/12 was 19 percent, down from 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 drifted down to a marketing year low of \$6.04 in October. Prices then rose steadily to \$6.63 in March before dropping off slightly (fig. 7). The 2011/12 SAP at the farmgate for soft white wheat was \$ 6.42 per bushel, significantly higher than the 2010/11 price of \$5.88 per bushel.

Durum Production Down for 2011

Durum production was down 58 million bushels from 2010 to 50 million bushels for 2011 with lower planted and harvested areas and lower yields (table 7). Flooding and excessively wet conditions during the spring and early summer reduced the area available for planting in Montana and North Dakota. Planted area was only 1.369 million acres, down from 2.56 million acres for 2010. The average yield was 38.5 bushels per acre, 3.6 bushels lower than in 2010. The 2010 yield was the second highest on record. The 2009 durum yield was a record high of 44.9 bushels per acre.

Table 7--Durum supply and demand 1/

Item	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
<i>Million acres</i>										
Area:										
Planted	2.9	2.9	2.6	2.8	1.9	2.2	2.7	2.6	2.6	1.4
Harvested	2.7	2.9	2.4	2.7	1.8	2.1	2.6	2.4	2.5	1.3
<i>Bushels per harvested acre</i>										
Yield	29.5	33.7	38.0	37.2	29.5	34.1	32.6	44.9	42.1	38.5
<i>Million bushels</i>										
Supply:										
Beg. stocks	33	28	26	38	40	21	8	25	35	35
Production	80	97	90	101	53	72	84	109	106	50
Imports	30	21	29	32	41	40	38	35	33	36
Total supply	143	145	145	171	135	134	130	169	173	122
Domestic use:										
Food	81	73	70	80	86	83	78	80	84	75
Seed	5	3	5	3	4	4	4	4	2	3
Feed & residual	-4	-3	2	3	-15	-6	-1	6	8	-8
Total domestic	82	73	77	85	74	81	81	91	95	70
Exports	33	46	31	45	40	45	24	44	43	27
Total use	115	119	108	131	114	126	105	134	138	97
Ending stocks	28	26	38	40	21	8	25	35	35	26
Stocks-to-use ratio, %	24	22	35	31	18	6	24	26	25	26

1/ ERS estimates of area, yield, and domestic use.

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

Durum supplies in 2011/12, at 122 million bushels, were 51 million bushels lower than those of a year earlier. The sharp drop in supplies was entirely due to reduced production as imports and carryin stocks were up slightly. Total use, at 97 million bushels, was down 41 million bushels from that of 2010/11 as both domestic use and exports were down 25 million bushels and 16 million bushels, respectively. Food use of durum was down year to year as very high durum prices provided an incentive for millers to substitute additional HRS for durum in some pasta flour blends.

Ending durum wheat stocks for 2011/12, at 25 million bushels, were down 10 million bushels year to year. The ending stocks-to-use ratio for 2011/12 was 26 percent, unchanged from 26 percent for both 2010/11 and 2009/10. 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 fluctuated between a marketing year high of \$10.80 per bushel in September and a marketing year low of \$8.39 per bushel in March (fig. 7). The SAP at the farmgate for 2011/12 for durum was \$9.68 per bushel, sharply higher than the 2010/11 price of \$5.98 per bushel.