

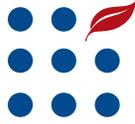
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# Wheat Year in Review (Domestic): Lower Domestic Use and Exports Raise 2009/10 Ending Stocks

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## Abstract

Total U.S. wheat supplies for the 2009/10 marketing year (June 1, 2009-May 31, 2010) were above those of the previous year as much higher beginning stocks more than offset lower production and imports. All domestic uses of wheat were down year-to-year, with the largest decline in feed and residual use. Exports were down because of expanded production in competing countries and high U.S. prices relative to competitors' prices. With high carryin stocks and lower domestic use and exports, total U.S. ending stocks for 2009/10 were up sharply from those of 2008/09. Thus, although remaining historically high, prices declined from the previous year's 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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World Agricultural  
Outlook Board

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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 2009/10 domestic marketing year (June 1, 2009-May 31, 2010), covering supply, utilization, ending stocks, and prices.

The U.S. domestic situation for 2009/10 was driven partly by the increases in global wheat production that followed the global wheat shortage and related price spike in 2007/08. The U.S. stocks-to-use ratio averaged 24.3 percent in the 3 years before 2007/08. In 2007/08, the U.S. ratio dropped to 13.2 percent as world demand for U.S. wheat exports rose to a 15-year high. World production recovered to a record high in 2008/09 as farmers responded to the price spike and favorable weather returned. World demand for U.S. wheat slowed and the U.S. stocks-to-use ratio climbed to 28.9 percent at the end of 2008/09. With continued high global wheat production and high U.S. prices in 2009/10, U.S. exports slowed even more and the U.S. stocks-to-use ratio soared to 48.4 percent.

**Supplies.** Total U.S. supplies for 2009/10, at 2,993 million bushels, were up 61 million bushels from those of the previous year as much higher beginning stocks more than offset lower production and imports. Beginning stocks for 2009/10 were 657 million bushels, more than double the 2008/09 beginning stocks of 306 million bushels.

All-wheat production was estimated at 2,218 million bushels for 2009, down 281 million bushels from that of 2008. All-wheat harvested area for 2010 was 49.9 million acres, down 5.8 million acres from that of the previous year. The U.S. all-wheat yield was 44.5 bushels per acre, down 0.4 bushels from the record high of 44.9 bushels per acre in 2008.

**Utilization.** Domestic use of wheat in 2009/10 was down year-to-year by 123 million bushels to 1,137 million bushels. Declining per capita flour use and high flour extraction rates resulted in fewer bushels of wheat milled than the year before. High wheat prices relative to corn limited wheat used for livestock feeding, dropping feed and residual use. U.S. exports were down 134 million bushels from those of 2008/09 to 881 million bushels as record foreign production and high U.S. prices, relative to those of competing exporter countries, reduced demand for U.S. wheat.

**Ending stocks.** Total U.S. ending stocks for 2009/10, at 976 million bushels, were up 319 million bushels, or 49 percent, from those of 2008/09 and up 670 million bushels from those of 2007/08. Ending stocks for 2007/08 were the lowest since the late 1940s.

**Price.** The all-wheat season-average price (SAP) for 2009/10 was \$4.87 per bushel. This price was less than the SAP for the 2 preceding marketing years—the all-time record \$6.78 in 2008/09 and \$6.48 in 2007/08. However, the 2009/10 price is higher than that of all years prior to 2007/08.

## 2009/10 All-Wheat Situation

### *World Production in 2009/10 Second-Largest on Record, Reducing U.S. Export Demand*

The global market for U.S. wheat in 2009/10 was limited by a second year of high production following the global price spike of 2007/08. Global 2009/10 production was down slightly year to year and the second-largest on record, raising the global stocks-use-ratio to 30 percent from 26 percent the previous year. Global 2009/10 wheat trade was down with less demand from several important importing regions including North Africa, the Middle East, and South Asia. This reduced import demand and high U.S. prices relative to competing exporters, particularly the Black Sea exporters, further limited export possibilities for U.S. wheat in 2009/10.

### *U.S. Supplies for 2009/10*

Total U.S. supplies for 2009/10, at 2,993 million bushels, were up 61 million bushels from the previous year (table 1). Much higher beginning stocks more than offset lower production and imports.

Table 1

#### **Wheat: U.S. market year supply and disappearance, 2004/05-2009/10**

Item	Unit	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<b>Area:</b>							
Planted	Million acres	59.6	57.2	57.3	60.5	63.2	59.2
Harvested	Million acres	50.0	50.1	46.8	51.0	55.7	49.9
Yield	Bushels per acre	43.2	42.0	38.6	40.2	44.9	44.5
<b>Supply:</b>							
Beginning stocks	Million bushels	546	540	571	456	306	657
Production	Million bushels	2,157	2,103	1,808	2,051	2,499	2,218
Imports <sup>1</sup>	Million bushels	71	81	122	113	127	119
Total supply	Million bushels	2,774	2,725	2,501	2,620	2,932	2,993
<b>Disappearance:</b>							
Food use	Million bushels	910	917	938	948	927	917
Seed use	Million bushels	78	77	82	88	78	69
Feed and residual use	Million bushels	181	157	117	16	255	150
Total domestic use	Million bushels	1,168	1,151	1,137	1,051	1,260	1,137
Exports <sup>1</sup>	Million bushels	1,066	1,003	908	1,263	1,015	881
Total disappearance	Million bushels	2,234	2,154	2,045	2,314	2,275	2,018
Ending stocks	Million bushels	540	571	456	306	657	976
CCC inventory <sup>2</sup>	Million bushels	54	43	41	0	0	0
Stocks-to-use ratio		24.2	26.5	22.3	13.2	28.9	48.4
Loan rate	Dollars per bushel	2.75	2.75	2.75	2.75	2.75	2.75
Contract/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	3.40	3.42	4.26	6.48	6.78	4.87

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). Most CCC-owned inventory was in the Bill Emerson Humanitarian Trust.

<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 Estimates* and supporting materials.

**Beginning Stocks.** Beginning stocks for 2009/10 were 657 million bushels, the largest since 2002/03 and 351 million bushels above the 2008/09 beginning stocks of 306 million bushels.

**Imports.** Imports for 2009/10, at 119 million bushels, were down 8 million bushels from 2008/09 because of more-than-adequate U.S. supplies. Some low-cost feed-quality wheat was imported into the Southeastern United States from Brazil, the United Kingdom, and Denmark. Such imports are highly unusual and highlighted the high cost of feedstuffs in the United States.

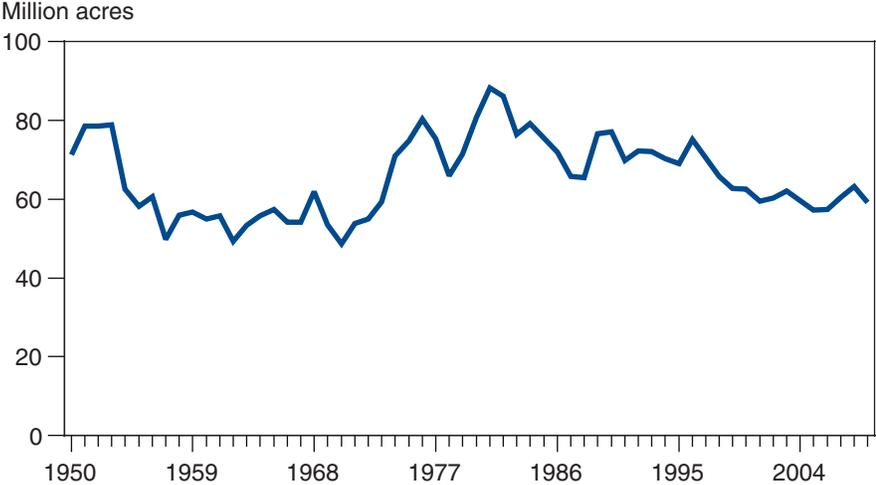
**Production.** All-wheat production was estimated at 2,218 million bushels for 2009, down 281 million bushels from that of 2008. All-wheat harvested area was 49.9 million acres, down 5.8 million acres from the previous year. The U.S. all-wheat yield was 44.5 bushels per acre, down 0.4 bushels from the previous year. The previous year's yield of 44.9 bushels per acre was a record high.

U.S. planted area for 2009/10 was down 4.0 million acres from the previous year to 59.2 million acres, largely because of a 2.9 million-acre decrease for soft red winter (SRW). U.S. planted acreage for 2008 was 63.2 million acres, the highest since 1998, but still substantially below the highs of 88.3 million acres and 86.2 million acres in 1981 and 1982, respectively (fig. 1). With the enhanced planting flexibility in the 1996 and succeeding Farm Acts, low returns led to the substitution of competing crops for wheat, particularly on the Plains.<sup>1</sup>

U.S. harvested area was down even more than planted area because of adverse weather. In particular, weather conditions in Oklahoma and Texas resulted in a decrease in harvested acres from last year in those States even though planted acreage was up from the previous year. Abandoned acres in Texas were the third highest on record. The national 2009 hard red winter (HRW) wheat harvested-to-planted ratio was 0.76 compared with 0.83 for 2008.

<sup>1</sup>For information about the long-term forces behind this large decline in wheat area in the United States, see USDA Wheat Baseline, 2010-19, [www.ers.usda.gov/briefing/wheat/2010baseline.htm](http://www.ers.usda.gov/briefing/wheat/2010baseline.htm).

Figure 1  
**U.S. wheat planted area, 1950-2009<sup>1</sup>**



<sup>1</sup>Includes winter wheat area planted in the preceding fall.  
Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

A large contributor to the lower average yield for 2009 was a 4.8-bushel drop in SRW yield from 2008 because weather was less favorable than in the year before. In addition, adverse weather on the Southern Plains also contributed to lower HRW yields.

### ***Domestic Demand Exceeds Foreign Demand for 2009/10***

Domestic use, despite dropping year-to-year, exceeded U.S. exports for 2009/10. Total domestic use in 2009/10, at 1,137 million bushels, was down 123 million bushels, mostly because of reduced feed and residual use. U.S. exports were down sharply by 134 million bushels from those of 2008/09 as record foreign production and high U.S. prices, relative to those of competing exporter countries, reduced demand for U.S. wheat.

**Total Food Use.** Total domestic food use of wheat, at 917 million bushels, was down 10 million bushels from those 2008/09 because of lower per capita flour use and a continued very high flour extraction rate. The flour extraction rate varies partly with the plumpness of the grain kernels and the diligence with which mills are kept adjusted to optimize flour extraction. Plumpness is greater when the wheat crop is not stressed by moisture shortages during the grain-filling production stage. The higher the wheat price, the more it pays for mill managers to continuously adjust their mills to maximize flour extraction. Significant portions of the 2009/10 and 2008/09 crops were not stressed by moisture shortages, and prices were high in both years.

For the second straight year, the 2009/10 flour extraction rate continued at extraordinarily high levels 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 77.1 percent, the 2009/10 rate was up slightly from the 77.0-percent rate for the 2008/09 marketing year. These rates compare with the average monthly flour extraction rate of 74.6 percent for 1990/91 to 2007/08 and 75.9 percent in 1996/97, the highest marketing year extraction rate over the 1990/91 to 2007/08 average. The 1996/97 marketing year, like 2008/09 and 2009/10, was a year of high wheat prices.

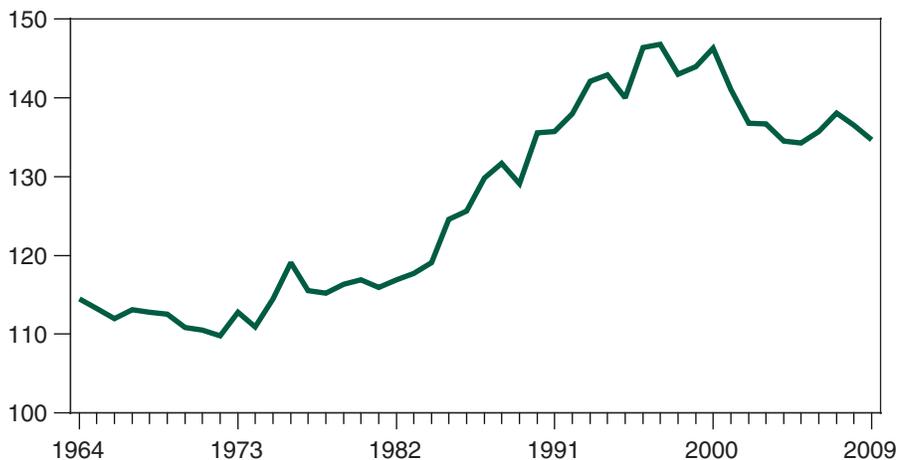
**Per Capita Flour Use.** Per capita all-wheat flour use for calendar year 2009 is estimated at 134.7 pounds (fig. 2), down 1.8 pounds from the 2008 estimate. Flour use in 2009 was slightly above the recent low of 134.3 pounds in 2005, reached after sharp declines in per capita use (from 146.3 pounds in 2000) due to increased consumer interest in low-carbohydrate diets.

Until the late 1990s, U.S. wheat producers could count on rising per capita food use of wheat to expand the domestic market for their crop. The strength of this domestic market developed from the historic turnaround of the early 1970s in U.S. per capita wheat use. This turnaround 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.

Figure 2

### U.S. per capita wheat flour use, 1964-2009

Pounds/person



Source: USDA, Economic Research Service.

**Feed and Residual Use.** Feed and residual use for 2009/10 was down 105 million bushels from that of 2008/09 to 150 million bushels. High wheat prices relative to corn prices, particularly in the summer quarter, limited actual feeding, dropping feed and residual use year-to-year.

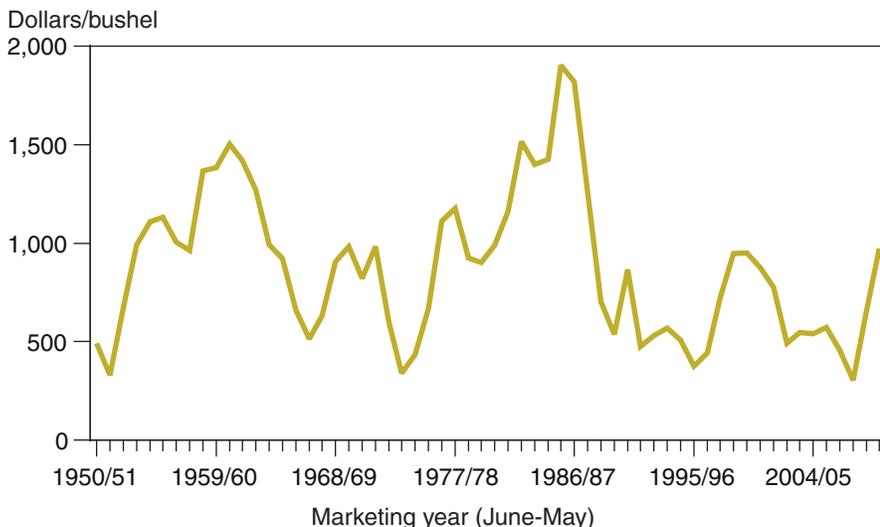
**Exports.** U.S. wheat exports for 2009/10 totaled 881 million bushels, down from 1,015 million bushels for 2008/09 and 1,263 million bushels for 2007/08. Exports for 2007/08 were exceptionally strong, the highest for the United States since 1992/93. The reduced exports in 2009/10 were concentrated in two classes: HRW and SRW. Exports of the other three classes of wheat—hard red spring (HRS), white, and durum—were up year-to-year, especially durum given the relative size of its exports compared with the other wheat classes.

The global wheat situation for 2009/10 was bearish for U.S. wheat exports. The world's beginning stocks, including those of the United States, had rebounded by 33 percent from a 26-year low in 2007/08. Global production in 2009/10 was down slightly from that of 2008/09, but was still the second largest on record, leaving global supplies higher. The net result was that global ending stocks rose to their highest level in 8 years.

Besides smaller global import demand, which reduced export opportunities in 2009/10, U.S. wheat prices were also high relative to other exporters. Both Black Sea feed wheat and milling wheat set world cash values as their low prices gained market share for the region's major exporting countries. European wheat was also a factor, taking some traditional U.S. markets in Latin America and Asia.

**Ending Stocks.** Total U.S. ending stocks for 2009/10, at 976 million bushels, were up 319 million bushels, or 49 percent, from those of 2008/09, and up 670 million bushels from those of 2007/08, when ending stocks were the lowest since the late 1940s (fig. 3). The U.S. stocks-to-use ratio for 2009/10 was 48.4 percent, which is very high by recent historical standards.

Figure 3  
**U.S. wheat ending stocks, 1950/51-2008/09**



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

The U.S. stocks-to-use ratio averaged 24.3 percent in the 3 years before 2007/08, the price-spike year. In 2007/08, the U.S. stocks-to-use ratio dropped to 13.2 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 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 28.9 percent in 2008/09. With continued high global wheat production and high U.S. prices, U.S. exports slowed even more in 2009/10 and the U.S. stocks-to-use ratio soared to 48 percent.

The ending stocks-to-use ratios for 2009/10 were 66 percent for SRW, 49 percent for HRW, 47 percent for HRS, 35 percent for white, and 26 percent for durum.

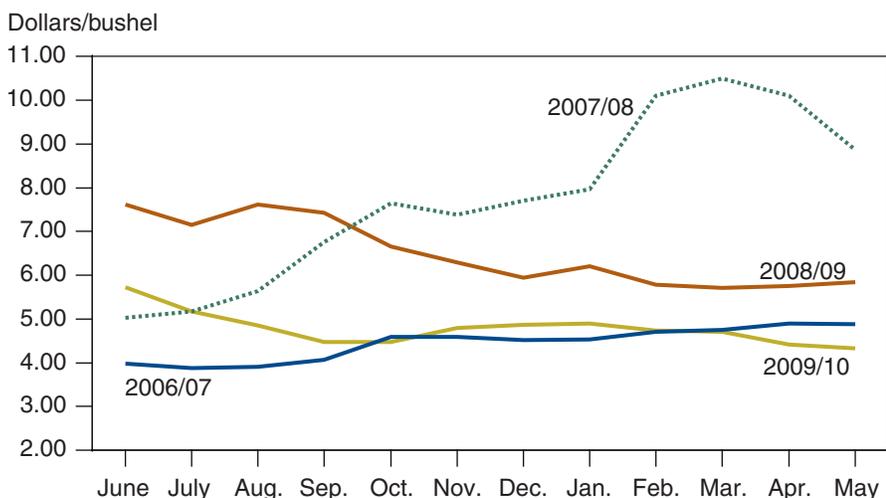
### ***Monthly Wheat Prices Fell During 2009/10***

Under pressure from sharply increased wheat stocks, monthly farmgate prices for 2009/10 fell from a marketing year high of \$5.72 per bushel in June to a low of \$4.47 in October. Farmgate prices rose to \$4.90 in January, before drifting down to \$4.33 by the end of the marketing year (fig. 4).

Despite the fall in monthly prices from the June high, the all-wheat season-average price (SAP) for 2009/10 at \$4.87 per bushel was the third highest on record. This price was less than the SAP for the 2 preceding marketing years—the all-time record of \$6.78 in 2008/09 and \$6.48 in 2007/08.

Figure 4

**Monthly wheat prices for 2009/10 sharply lower than in previous 2 years, 2006/07-2009/10**



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

***High Prices Result in Low Farm-Program Expenditures for 2009 Wheat***

The U.S. wheat sector receives 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.<sup>2</sup> Some payments depend 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, 2009 crop marketing loan activity for wheat was low. Marketing loans were made on 103 million bushels, up from 84.3 million bushels the previous year but down from the 5-year-average of 112.5 million. Marketing loan benefits (including marketing loan gains, LDPs, and eLDPs administered through USDA’s electronic Loan Deficiency Payment Service) were \$109 million for the 2009 crop year. The vast majority of these payments were made for durum wheat.

**Direct Payments (DP).** DPs under the 2002 and 2008 Farm Acts are similar to production flexibility contract (PFC) payments under the 1996 Farm Act. 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.

**Countercyclical 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. For 2009/10

<sup>2</sup>For more information on these programs, see [www.ers.usda.gov/Briefing/FarmPolicy/ProgramProvisions.htm](http://www.ers.usda.gov/Briefing/FarmPolicy/ProgramProvisions.htm)

wheat, CCPs would have been paid if the season-average price were below \$3.40 per bushel (\$3.92 target price minus the \$0.52 direct payment rate). With the 2009/10 season average at \$4.87 per bushel, no CCPs were made for wheat base acres for the 2009 crop.

**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 2009, about 49 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 \$2 billion were paid to wheat producers in crop insurance indemnities on the 2009 crop. Participation in revenue insurance fell in 2009 to about 70 percent of wheat-insured acres.

**Export Assistance and Food Aid.** U.S. food assistance programs donate or sell agricultural products directly to individual countries with food aid needs or 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 Bill Emerson Humanitarian Trust currently has \$310.4 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. Annual appropriations have been about \$100 million in recent years and include wheat flour.

With the end of Export Enhancement Program (EEP) activity for wheat in the mid-1990s and the decline in Section 416 donations since the late 1990s, the share of U.S. wheat exports under these and other food assistance programs has dropped sharply in this decade from an average of 75 percent in the first half of the 1990s. In 2006/07 and 2007/08, the share was 7 percent. In 2008/09, the latest year for which data are available, 16 percent of U.S. wheat exports were under these programs, reflecting both an increase in the volume of wheat shipped under these programs and a drop in total U.S. wheat exports. For levels by program see table 27 at [www.ers.usda.gov/Data/Wheat/WheatYearbook.aspx/](http://www.ers.usda.gov/Data/Wheat/WheatYearbook.aspx/).

## 2009/10 Wheat Situation By Class

### *Ending Stocks of All Wheat Classes Rose Sharply in 2009/10*

Ending stocks of all classes of U.S. wheat were up sharply in 2009/10 compared with those of 2008/09. Percentage increases in 2009/10 ending stocks by wheat class were HRS, 65 percent; HRW, 51 percent; SRW 42 percent; durum, 38 percent; and white, 25 percent.

### *Hard Red Winter (HRW) Production Down in 2009 Due to Unfavorable Weather in Texas and Oklahoma*

HRW production for 2009, at 920 million bushels, was down 115 million bushels from that of 2008, despite slightly higher planted area in 2009 (table 2). Production increased from that of 2008 in Colorado, Kansas, and Nebraska, whereas production fell in Montana, Oklahoma, and Texas. HRW wheat yields averaged 38.1 bushels per acre in 2009, down from 39.9 bushels in 2008.

Table 2

#### **Hard red winter wheat supply and demand, 2001/01-2008/09<sup>1</sup>**

Item	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
	<i>Million acres</i>									
<b>Area:</b>										
Planted	30.4	28.9	30.1	32.6	30.8	30.0	29.3	33.0	31.3	31.7
Harvested	23.6	20.9	19.9	25.6	23.4	24.6	21.3	25.7	25.9	24.1
	<i>Bushel per harvested acre</i>									
Yield	35.9	36.7	31.1	41.7	36.6	37.8	32.0	37.2	39.9	38.1
	<i>Million bushels</i>									
<b>Supply:</b>										
Beginning stocks	458	411	363	188	227	193	215	165	138	254
Production	846	766	620	1,071	856	930	682	956	1,035	920
Imports	0	1	0	0	1	0	1	1	2	2
Total supply	1,304	1,178	984	1,260	1,084	1,123	898	1,121	1,174	1,176
<b>Domestic use:</b>										
Food	375	364	377	378	382	370	366	397	385	360
Seed	32	34	37	35	33	33	37	35	35	32
Feed and residual	93	68	74	109	86	77	50	15	52	28
Total domestic	500	465	488	522	502	481	453	448	472	421
Exports	393	349	308	510	389	428	280	536	447	370
Total use	893	815	795	1,033	891	908	733	984	919	791
Ending stocks	411	363	188	227	193	215	165	138	254	385
Stocks-to-use ratio	46	45	24	22	22	24	23	14	28	49

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

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

Extreme dryness persisted into spring in Oklahoma and Texas, and with an April freeze, led to above-average abandoned acres. Abandoned acres in Texas were the third highest on record. The national 2009 harvested-to-planted ratio was 0.76 compared with 0.83 for 2008.

Yields in Oklahoma and Texas were lower than in 2008. Elsewhere, however, with cool wet weather, yields increased from the previous year in Colorado, Kansas, and Nebraska. Nebraska's yield of 48 bushels per acre tied for a record-high yield. These growing conditions favored larger kernels, higher test weights, and lower protein content (table 3). The lower protein content for HRW, in combination with the low protein content for the HRS wheat class, led to higher-than-normal premiums for the higher protein HRW.

HRW supplies in 2009/10, at 1,176 million bushels, were nearly unchanged from the previous marketing year. Higher beginning stocks for 2009/10 almost exactly offset decreased production. Total use, at 791 million bushels, was 128 million bushels lower than the previous year (figs. 5 and 6). Domestic use was down 51 million bushels from that of 2008/09, while exports were down 77 million bushels.

The net result of the supply and use changes from 2008/09 to 2009/10 was to raise HRW ending stocks by 131 million bushels to 385 million bushels. The HRW stocks-to-use ratio for 2009/10 was 49 percent, up from 28 percent for 2008/09. 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.

Table 3

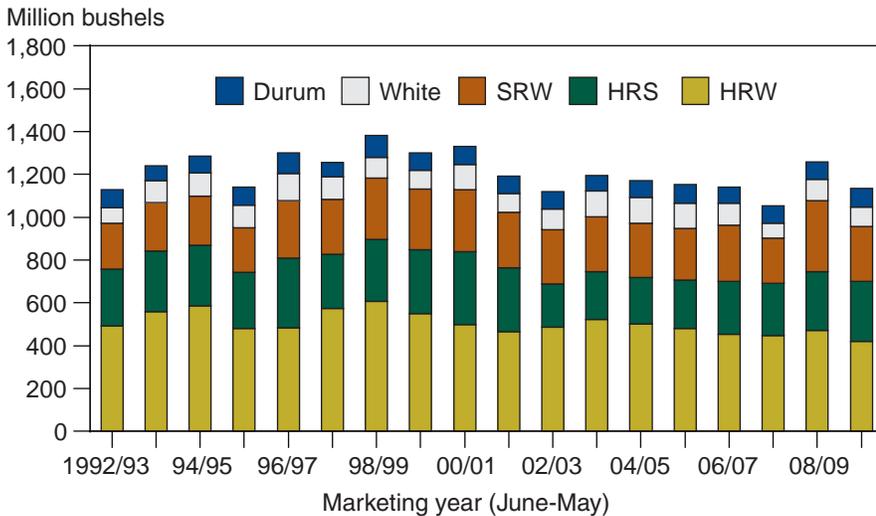
**Summary of wheat class qualities for 2009**

Item	Protein	Flour/semolina extraction	Test weight	Wheat falling numbers
	<i>Percent</i>		<i>Pounds/bushel</i>	<i>Seconds</i>
<b>2009 wheat crop:</b>				
Hard red winter	12.1	70.7	60.6	410
Hard red spring	13.2	68.7	61.6	374
Soft red winter	10.0	67.2	57.6	325
Soft white	10.3	70.5	59.8	324
Durum	13.5	65.5	61.4	398
<b>2008 wheat crop:</b>				
Hard red winter	12.3	74.4	60.2	437
Hard red spring	14.3	69.2	60.8	379
Soft red winter	9.8	68.6	59.2	325
Soft white	11.2	71.1	58.9	321
Durum	14.8	61.1	60.2	322
<b>5-year average:</b>				
Hard red winter	12.5	69.6	59.9	406
Hard red spring	14.4	68.9	60.7	398
Soft red winter	10.0	69.4	59.5	341
Soft white	10.4	69.1	59.8	339
Durum	13.5	64.1	60.5	362

Source: U.S. Wheat Associates. *Crop Quality Report 2009*.

Figure 5

**U.S. domestic wheat use for 2009/10 lower than in previous year, 1992/93-2009/10**

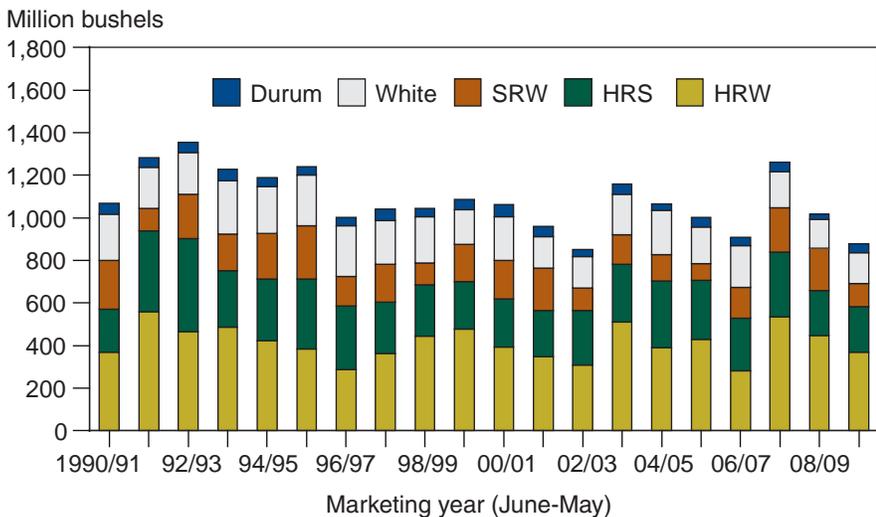


HRW = Hard red winter; HRS = Hard red spring; SRW = Soft red winter.

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

Figure 6

**Wheat exports down in 2009/10, 1990/91-2009/10**



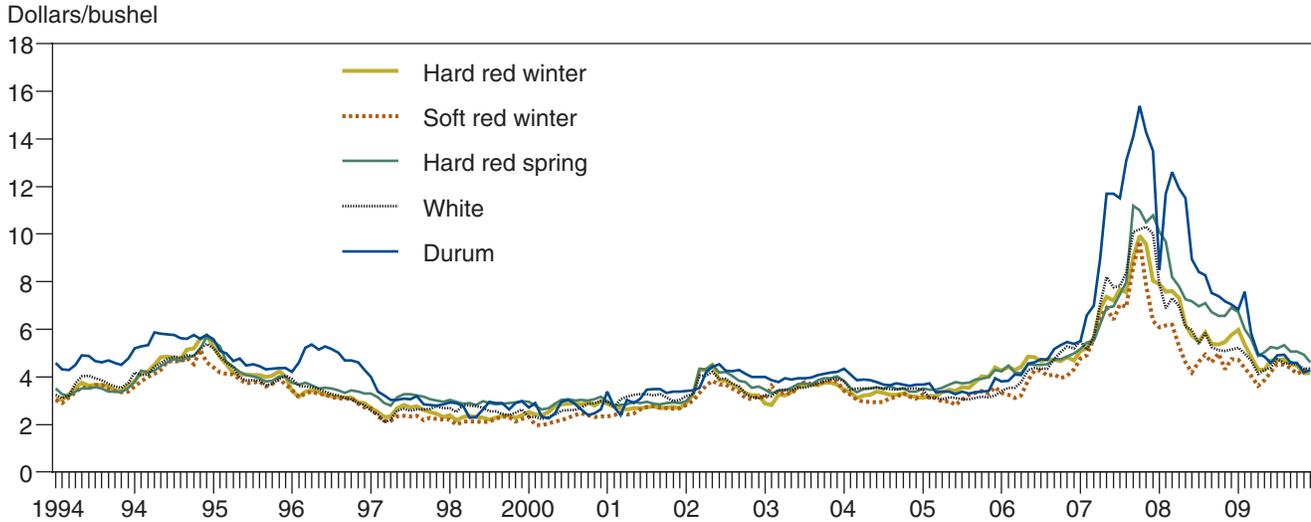
HRW = Hard red winter; HRS = Hard red spring; SRW = Soft red winter.

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

Seasonal price movement for HRW followed the same pattern as all-wheat farmgate prices. Monthly farmgate prices received by farmers for HRW declined from the June season high of \$5.96 per bushel to a marketing year low of \$4.28 in October (fig. 7). The monthly HRW farmgate price rose to \$4.73 in January and drifted down to \$4.16 by the end of the marketing year. The season-average price (SAP) at the farmgate for 2009/10 HRW was \$4.84 per bushel, less than the SAP of \$6.90 and \$6.15 for 2008/09 and 2007/08, respectively.

Figure 7

**Average monthly prices received by wheat farmers, June 1994-May 2009**



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

***Hard Red Spring (HRS) Production Up in 2009  
Due to Favorable Weather***

HRS production for 2009, at 548 million bushels, was up 36 million bushels from that of 2008 as higher yields more than offset lower planted and harvested areas (table 4). HRS plantings were down 0.9 million acres from those of 2008, but because good weather reduced abandonment, harvested area, at 12.3 million acres, was down only 0.5 million acres.

The growing season was marked by a wet spring, providing improved soil moisture. Continued precipitation and below-normal temperatures through the season were favorable for high yields. The HRS yield was a record-high of 44.5 bushels per acre, 4.6 bushels higher than in 2008. The previous record was 42.2 bushels per acre in 2004. Yields were above 2008’s level in all States, except Minnesota, South Dakota, and Utah. The average protein content was well below normal due to above-average yields in most areas with cool summer temperatures. With higher-than-expected yields, nitrogen fertilizer applications were inadequate for protein production. The result was much higher-than-normal premiums for the high-protein HRS.

HRS supplies in 2009/10, at 731 million bushels, were up 106 million bushels from the previous marketing year. A substantially larger carryin and increased production easily offset a small decline in imports. Total use, at 497 million bushels, was up 14 million bushels from that of 2008/09. Domestic use was up 9 million bushels, while exports rose 4 million bushels from the previous marketing year.

The net result was higher HRS ending stocks for 2009/10, up 92 million bushels from those of 2008/09 to 234 million bushels. The HRS ending stocks-to-use ratio of 47 percent for 2009/10 was up from 29 percent for 2008/09. The 2008/09 ending stocks-to-use ratio, at 29 percent, was equal to

Table 4

**Hard red spring wheat supply and demand, 2000/01-2009/10<sup>1</sup>**

Item	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<i>Million acres</i>										
<b>Area:</b>										
Planted	14.4	14.8	14.8	13.1	13.0	13.3	14.4	12.7	13.5	12.6
Harvested	13.6	13.7	12.6	12.7	12.5	12.9	13.4	12.4	12.8	12.3
<i>Bushel per harvested acre</i>										
Yield	37.0	34.6	27.9	39.2	42.2	36.0	32.2	36.3	39.9	44.5
<i>Million bushels</i>										
<b>Supply:</b>										
Beginning stocks	218	210	230	145	157	159	132	117	68	142
Production	502	475	351	500	525	467	432	450	512	548
Imports	56	61	23	9	8	12	50	48	45	41
Total supply	776	746	605	654	690	638	614	615	625	731
<b>Domestic use:</b>										
Food	267	250	215	223	228	227	236	233	224	238
Seed	20	23	20	19	21	21	19	20	17	17
Feed and residual	51	26	-33	-17	-33	-22	-6	-11	32	27
Total domestic	339	299	202	225	216	226	248	243	273	282
Exports	227	217	258	272	315	280	248	304	210	214
Total use	566	516	460	497	531	506	497	547	483	497
Ending stocks	210	230	145	157	159	132	117	68	142	234
Stocks-to-use ratio	37	45	32	32	30	26	24	12	29	47

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

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

the average stocks-to-use ratio over the 5 years prior to 2007/08. For comparison, the 2007/08 stocks-to-use ratio was 12 percent.

The seasonal price movement for HRS followed much the same pattern as all-wheat farmgate prices. Monthly farmgate prices received by HRS producers declined from a marketing year high of \$6.72 per bushel in June to a season low of \$4.87 in September (fig. 7). The monthly HRS farmgate price rose to \$5.33 in January and drifted down to \$4.62 by the end of the marketing year. The 2009/10 SAP at the farmgate for HRS was \$5.26 per bushel, less than the SAP of \$7.39 and \$7.16 for 2008/09 and 2007/08, respectively.

### ***Soft Red Winter (SRW) Production Down Sharply in 2009***

SRW production for 2009, at 404 million bushels, was down 210 million bushels from that of 2008, which was the highest since the record 678 million bushels in 1981 (table 5). The 2009 harvested area was down 2.9 million acres from that of 2008 to 7.2 million acres, partly because of declining prices at planting. SRW yields were also down from the previous year because growing conditions were not as favorable as they were for the 2008

Table 5

**Soft red spring wheat supply and demand, 2000/01-2009/10<sup>1</sup>**

Item	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<i>Million acres</i>										
<b>Area:</b>										
Planted	9.5	8.6	8.1	8.3	8.2	6.1	7.4	8.6	11.2	8.3
Harvested	8.1	7.1	6.5	6.8	7.0	5.1	6.2	7.0	10.1	7.2
<i>Bushel per harvested acre</i>										
Yield	57.9	55.8	49.6	55.6	54.2	59.9	63.2	50.0	60.9	56.1
<i>Million bushels</i>										
<b>Supply:</b>										
Beginning stocks	133	135	78	55	64	88	106	109	55	171
Production	469	397	321	380	380	308	390	352	614	404
Imports	3	3	13	22	22	26	20	14	34	32
Total supply	605	535	412	457	466	423	515	475	702	607
<b>Domestic use:</b>										
Food	153	155	165	153	155	155	165	150	155	156
Seed	16	16	16	16	12	14	16	21	16	10
Feed and residual	120	87	72	87	89	71	80	41	161	90
Total domestic	290	258	253	256	255	241	261	212	332	256
Exports	180	200	105	138	122	76	145	208	199	109
Total use	470	457	357	393	378	317	406	420	531	365
Ending stocks	135	78	55	64	88	106	109	55	171	242
Stocks-to-use ratio	29	17	15	16	23	33	27	13	32	66

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

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

crop. The average 2009 SRW yield was 56.1 bushels per acre, down 4.8 bushels from that of 2008. An additional factor complicating the 2009 SRW supply was the widespread outbreak of fusarium due to cool, wet spring weather during flowering.<sup>3</sup>

SRW supplies for 2009/10, at 607 million bushels, were down 95 million bushels from those of 2008/09 because sharply reduced production more than offset higher carryin stocks, while imports were nearly unchanged. Of the five classes of wheat, SRW is the only class to have smaller supplies in 2009/10 than in 2008/09. Total SRW use, at 365 million bushels, was down 166 million bushels compared with the previous marketing year as both domestic use and exports were down year-to-year, 76 million bushels and 90 million bushels, respectively.

Despite lower production, ending stocks for 2009/10, at 242 million bushels, were up 71 million bushels from that of 2008/09. The ending stocks-to-use ratio for 2009/10 rose to 66 percent, substantially above the 2008/09 level of 32 percent. The stocks-to-use ratio for 2007/08, the recent low, was 13 percent, much less than average of the previous 5 years of 23 percent.

<sup>3</sup>*Fusarium graminearum* is known to produce two important mycotoxins, deoxynivalenol (DON) and zearalenone, which can contaminate the diseased grain. The mycotoxin DON can cause reduced feed intake and lower weight gain in animals when DON levels in feed are as low as 1–3 parts per million (ppm), especially in swine. Vomiting and feed refusal can occur when DON levels exceed 10 ppm. Humans are also sensitive to DON, and the U.S. Food and Drug Administration has recommended that DON levels not exceed 1 ppm in human food.

The seasonal price movement for SRW followed much the same pattern as all-wheat farmgate prices. Monthly farmgate prices received by SRW producers declined from a marketing year high of \$4.69 per bushel in June to a season low of \$3.63 in September (fig. 7). The monthly SRW farmgate price rose to \$4.52 in December and drifted lower to end the marketing year in May at \$4.38. The 2009/10 SAP at the farmgate for SRW was \$4.35 per bushel, less than the SAP of \$5.78 and \$5.20 for 2008/09 and 2007/08, respectively.

### **White Wheat Production Down for 2009**

The Pacific Northwest generally received adequate rainfall during the winter and early spring. Higher temperatures toward the end of the growing season led to a crop with below-average to average yields in dryland farming areas of the region.

Total white wheat production for 2009, at 237 million bushels, was down 18 million bushels from that of 2008 (table 6). Of this 2009 total, 182 million bushels were soft white winter (SWW), 18 million bushels were hard white winter (HWW), 29 million bushels were soft white spring (SWS), and 8

Table 6

#### **White wheat supply and demand, 2000/01-2009/10<sup>1</sup>**

Item	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<i>Million acres</i>										
<b>Area:</b>										
Planted	4.4	4.2	4.4	5.2	5.1	4.9	4.3	4.0	4.5	4.0
Harvested	4.2	4.0	4.1	5.0	4.8	4.7	4.1	3.7	4.3	3.8
<i>Bushel per harvested acre</i>										
Yield	75.1	56.9	56.4	59.5	64.5	63.7	61.5	59.1	59.5	62.4
<i>Million bushels</i>										
<b>Supply:</b>										
Beginning stocks	91	75	73	75	72	63	78	44	37	64
Production	301	226	233	297	305	297	251	221	255	237
Imports	5	8	11	11	11	10	10	9	8	9
Total supply	397	309	317	383	388	370	339	275	300	310
<b>Domestic use:</b>										
Food	74	75	80	85	75	85	85	85	85	83
Seed	6	6	7	7	6	6	5	6	5	6
Feed and residual	37	8	8	27	36	27	9	-23	10	-1
Total domestic	116	89	94	119	118	118	100	68	100	87
Exports	206	147	147	192	208	174	195	169	136	143
Total use	322	236	242	311	326	292	295	238	236	231
Ending stocks	75	73	75	72	63	78	44	37	64	80
Stocks-to-use ratio	23	31	31	23	19	27	15	16	27	35

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

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

million bushels were hard white spring (HWS). The planted and harvested areas, respectively, were 3.0 million acres and 2.9 million for SWW, 0.3 million acres and 0.3 million for HWW, 0.6 million acres and 0.5 million for SWS, and 0.1 million acres and 0.1 million for HWS. The 2009 yields by type of white wheat were 63.8 bushel per acre for SWW, 59.6 bushel per acre for HWW, 53.3 bushel per acre for SWS, and 78.7 bushel per acre for HWS.

Total 2009/10 white wheat supplies, at 311 million bushels, were up 11 million bushels from those of 2008/09 because higher beginning stocks and imports more than offset lower production. Total use, at 231 million bushels, was down 5 million bushels compared with that of 2008/09 as lower domestic use more than offset higher exports.

White wheat ending stocks for 2009/10, at 80 million bushels, were up 16 million bushels from those of a year earlier. The ending stocks-to-use ratio for 2009/10 rose to 35 percent from 27 percent for 2008/09. The 2007/08 stocks-to-use ratio was 16 percent, sharply lower than the average of the previous 5 years of 23 percent.

The seasonal price movement for white wheat followed the same pattern as all-wheat farmgate prices. Monthly farmgate prices received by white wheat producers declined from a marketing year high of \$5.21 per bushel in June to a season low of \$4.14 in September (fig. 7). The monthly white wheat farmgate price rose to \$4.74 in December and drifted down to \$4.35 by the end of the marketing year. The 2009/10 SAP at the farmgate for white wheat was \$4.52 per bushel, less than the SAP of \$6.01 and \$7.23 for 2008/09 and 2007/08, respectively.

### ***Durum Production Up for 2009 With Favorable Weather***

Durum production was up 25 million bushels from that of 2008 to 109 million bushels for 2009 as remarkably high yields more than offset lower planted and harvested area (table 7). Planting was delayed by a wet spring. However, the spring moisture, with continued wet, cool conditions through the season, led to excellent yields. The 2009 durum yield was a record-high of 44.9 bushels per acre, 12.3 bushels higher than that of the previous year and 5.2 bushels higher than the previous record set in 1992. Yields were above 2008 levels in all producing States, except California.

Planted and harvested areas for the 2009 durum crop were down 0.17 million acres and 0.15 million acres, respectively, from those of 2008. For 2009, planted area was 2.55 million acres and harvested area was 2.43 million acres.

Overall, 2009/10 durum supplies, at 169 million bushels, were 39 million bushels higher than those of a year earlier. Higher beginning stocks and production were only slightly offset by smaller imports. Total use, at 134 million bushels, was up 29 million bushels from that of 2008/09 as domestic use was up slightly, while exports were up sharply.

Per capita consumption of semolina and durum flour has followed a different pattern than consumption for all wheat. Semolina and durum flour consumption dropped 2 years in a row following the recent high in 2007. Per capita use for 2009 was estimated at 11.5 pounds, up 0.1 pounds from that of 2008

Table 7

**Durum wheat supply and demand, 2000/01-2009/10<sup>1</sup>**

Item	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<i>Million acres</i>										
<b>Area:</b>										
Planted	3.9	2.9	2.9	2.9	2.6	2.8	1.9	2.2	2.7	2.6
Harvested	3.6	2.8	2.7	2.9	2.4	2.7	1.8	2.1	2.6	2.4
<i>Bushel per harvested acre</i>										
Yield	30.7	30.0	29.5	33.7	38.0	37.2	29.5	34.1	32.6	44.9
<i>Million bushels</i>										
<b>Supply:</b>										
Beginning stocks	45	45	33	28	26	38	40	21	8	25
Production	110	84	80	97	90	101	53	72	84	109
Imports	26	34	30	21	29	32	41	40	38	35
Total supply	185	163	143	145	145	171	135	134	130	169
<b>Domestic use:</b>										
Food	81	83	81	73	70	80	86	83	78	80
Seed	4	5	5	3	5	3	4	4	4	4
Feed and residual	0	-6	-4	-3	2	3	-15	-6	-1	6
Total domestic	85	81	82	73	77	85	74	81	81	90
Exports	56	49	33	46	31	45	40	45	24	44
Total use	140	130	115	119	108	131	114	126	105	134
Ending stocks	45	33	28	26	38	40	21	8	25	35
Stocks-to-use ratio	32	25	24	22	35	31	18	6	24	26

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

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

but still below the 12.3 pounds in 2007. Time series data of durum consumption can be found at [www.ers.usda.gov/Data/Wheat/YBtable31.asp](http://www.ers.usda.gov/Data/Wheat/YBtable31.asp).

Ending durum wheat stocks for 2009/10, at 35 million bushels, were up 10 million bushels year-to-year. The ending stocks-to-use ratio for 2009/10 rose to 26 percent, slightly above the 24 percent for 2008/09. The ratio for 2007/08 was only 6 percent, much lower than the average of 26 percent for the previous 5 years. Durum's 2009/10 stocks-to-use ratio did not soar above its long-term average ratio like that of HRW, HRS, and SRW did because of its very strong export performance, especially to the European Union and North Africa.

The seasonal price movement for durum wheat followed a similar pattern as all-wheat farmgate prices. Monthly farmgate prices received by durum wheat producers declined from a marketing year high of \$7.57 per bushels in July to \$4.59 in November (fig. 7). The monthly durum farmgate price rose to \$4.94 in January and drifted down to a season low of \$4.17 in April. The SAP at the farmgate for 2009/10 for durum was \$5.47 per bushel, less than the SAP of \$9.26 and \$9.92 for 2008/09 and 2007/08, respectively.