

# Wheat Year in Review (Domestic): 2008 U.S. Wheat Production Rose in Response to High Prices

Gary Vocke

## Abstract

Total U.S. wheat supplies for the 2008/09 marketing year (June 1-May 31) were above the previous year as increased production and higher imports more than offset lower beginning stocks. Domestic use of wheat was up year-to-year, with higher feed and residual use but reduced food and seed use. Exports were down because of high U.S. prices relative to competitors and expanded production in competing countries as world wheat producers responded to high prices. Total U.S. ending stocks for 2008/09 were up from 2007/08 when ending stocks were the lowest since the late 1940s. Prices fell sharply over the marketing year. However, the season-average farm price reached a record high because significant quantities of wheat were forward-priced during the spring of 2008, when prices were very high or were sold in the cash market before prices declined.

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

## 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 USDA's wheat supply and demand forecasts as published in the *World Agricultural Supply and Demand Estimates* (WASDE). This annual year-in-review report provides an overview of the 2008/09 domestic marketing year (June 1-May 31), including supply, utilization, ending stocks, and prices.

**Supplies.** Total U.S. supplies for 2008/09, at 2,932 million bushels, were 312 million bushels above 2007/08. Increased production in 2008 and higher imports more than offset lower beginning stocks. Sharply higher soft red winter (SRW) production in 2008 accounted for about 60 percent of the increased production year-to-year. SRW production, at 614 million bushels, was the highest since the record 678 million bushels in 1981.

All-wheat production was 2,499 million bushels in 2008, up 448 million bushels from 2007. All-wheat harvested area was 55.7 million acres, up 4.7 million acres from the previous year. The U.S. all-wheat yield was a record 44.9 bushels per acre, up 4.7 bushels from the previous year. The previous high was 44.2 bushels per acre in 2003.

**Utilization.** Domestic use of wheat was up year-to-year by 209 million bushels, to 1,260 million bushels, especially for SRW feed and residual use. Higher feed and residual use more than offset reduced food and seed use. Exports were down 248 million bushels from 2007/08 because of record foreign production and high U.S. prices relative to those of competitor countries. Wheat producers in other countries responded to high prices with expanded plantings.

**Ending stocks.** Total U.S. ending stocks for 2008/09, at 657 million bushels, were up 351 million bushels, or 115 percent, from 2007/08, when ending stocks were the lowest since the late 1940s. Year-to-year percentage increases for ending stocks by wheat class were: white, 73 percent; hard red winter (HRW), 85 percent; hard red spring (HRS), 109 percent; durum, 203 percent; and soft red winter (SRW), 211 percent.

**Price.** The all-wheat season-average price (SAP) for 2008/09 was \$6.78 per bushel. This record-high price exceeded the \$6.48 SAP for 2007/08, which was the previous record-high price. Despite the sharp fall in monthly prices over the marketing year, the SAP for 2008/09 was high relative to 2007/08 because significant quantities of wheat were forward-priced during the spring of 2008 when prices were very high. Much of the 2008 crop was also sold in the cash market prior to October 2008 when prices fell sharply. Also, little of the 2007/08 crop was left to be sold in the spring of 2008 when prices hit record levels in cash and futures markets.

## All Wheat Situation for 2008/09

### *World Responded to High Prices with Increased Planted Area*

Most wheat-producing nations harvested bumper crops in 2008, having increased plantings to take advantage of record prices and benefiting from favorable weather that pushed yields to record or near-record levels. World wheat output in 2008/09 set an all-time record at 25.1 billion bushels, a 12-percent increase over the previous year's 22.4 billion bushels. World wheat trade (July-June) was a record 5.1 billion bushels in 2008/09.

The 2007/08 global price spike that led to the increased 2008 plantings was the result of adverse weather conditions around the world that sharply reduced production when the global ending-stocks-to-use balance was already low. U.S. wheat exports in 2007/08 reached a 15-year high. U.S. and world wheat prices soared. The U.S. season-average price reached \$6.48 per bushel, far exceeding the previous record of \$4.55 per bushel in 1995/96.

### *U.S. Supplies for 2008/09*

Total supplies for 2008/09, at 2,932 million bushels, were 312 million bushels above 2007/08 (table 1). Increased production in 2008 more than offset lower beginning stocks and imports.

**Beginning Stocks.** Beginning stocks for the 2008/09 marketing year, at 306 million bushels, were the lowest since the late 1940s for all classes of wheat. Mills typically using hard red spring (HRS) and durum had to make adjustments. Many HRS mills switched to milling hard red winter (HRW) in the spring of 2007 when the price of HRS rose relative to HRW because of the low HRS stocks and because the HRS harvest is several weeks later than the HRW harvest. These HRS mills continued to mill HRW into the 2008/09 marketing year. Durum millers relied upon the Desert Durum crop grown in California and Arizona to provide early supplies before the 2008 harvest in the Northern Plains. Desert Durum is usually delivered "identity preserved" to buyers because of its unique characteristics<sup>1</sup>.

**Imports.** Imports for 2008/09, at 127 million bushels, were up 14 million bushels from 2007/08 because of larger exportable supplies in Canada. Exportable Canadian supplies were low for the previous year, 2007/08, because adverse weather reduced the country's production.

**Production.** High prices provided the incentive for U.S. wheat producers to expand area. Output increased by 448 million bushels from 2007 to 2,499 million bushels, as a result of increased planted area and record-high yields. Sharply higher SRW production in 2008 accounted for about 60 percent of the increased production year-to-year. SRW production, at 614 million bushels, was the highest since the record 678 million bushels in 1981.

<sup>1</sup>The phrase "Desert Durum" has been trademarked in the United States. Desert Durum is produced under irrigation in the desert valleys and lowlands of Arizona and California. These are regions of low rainfall and high temperatures during the grain-filling season. The grain quality traits of Desert Durum are enhanced by the unique environment of this production area. It enters the market up to 3 months ahead of durum produced in other northern hemisphere durum-producing areas.

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

Item and unit		2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
<b>Area:</b>							
Planted	Million acres	62.1	59.7	57.2	57.3	60.5	63.1
Harvested	Million acres	53.1	50.0	50.1	46.8	51.0	55.7
Yield	Bushels per acre	44.2	43.2	42.0	38.6	40.2	44.9
<b>Supply:</b>							
Beginning stocks	Million bushels	491	546	540	571	456	306
Production	Million bushels	2,344	2,157	2,103	1,808	2,051	2,499
Imports 1/	Million bushels	63.0	71	81	122	113	127
Total supply	Million bushels	2,899	2,774	2,725	2,501	2,620	2,932
<b>Disappearance:</b>							
Food use	Million bushels	912	910	917	938	948	925
Seed use	Million bushels	80	78	77	82	88	75
Feed and residual use	Million bushels	203	181	157	117	16	260
Total domestic use	Million bushels	1,194	1,168	1,151	1,137	1,051	1,260
Exports 1/	Million bushels	1,158	1,066	1,003	908	1,263	1,015
Total disappearance	Million bushels	2,352	2,234	2,154	2,045	2,314	2,275
Ending stocks	Million bushels	546	540	571	456	306	657
CCC inventory 2/	Million bushels	61.0	54.0	43.0	41.0	0	0
Stocks-to-use ratio		23.2	24.2	26.5	22.3	13.2	28.9
Loan rate	Dollars per bushel	2.80	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 3/	Dollars per bushel	3.40	3.40	3.42	4.26	6.48	6.78
Government payments	Million dollars	1,237	1,218	1,151	1,120	1,118	1,118
Market value of production	Million dollars	7,929	7,283	7,171	7,695	13,289	16,944

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 is in the Bill Emerson Humanitarian Trust.

3/ U.S. season-average price based on monthly prices weighted by monthly marketings. Prices do not include an allowance for loans outstanding and government purchases.

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

U.S. planted acreage for 2008 was 63.2 million acres, up 2.7 million acres from 2007, and the highest since 1998, but still substantially below the early 1980s peaks 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>2</sup>.

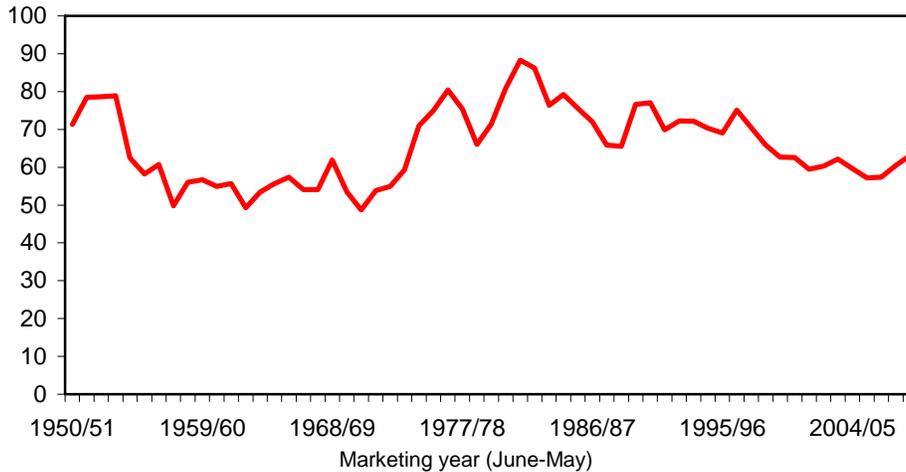
High prices and favorable weather led to the relatively high harvest-to-planted rate of 88 percent for 2008. The long-term average is 85 percent. The 2008 harvested area was 55.7 million acres, up 4.7 million acres from 2007.

<sup>2</sup>For information about the long-term forces behind this large decline in wheat area in the United States, see USDA Wheat Projections, 2009-18, [www.ers.usda.gov/briefing/wheat/2009baseline.htm](http://www.ers.usda.gov/briefing/wheat/2009baseline.htm).

Figure 1

### U.S. wheat planted area, 1950-2008

Million acres



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

The U.S. all-wheat yield was 44.9 bushels per acre, up 4.7 bushels from the previous year when the production of winter wheat was reduced by a late spring freeze and flooding. This was a record yield for U.S. wheat. The previous high was 44.2 bushels per acre in 2003.

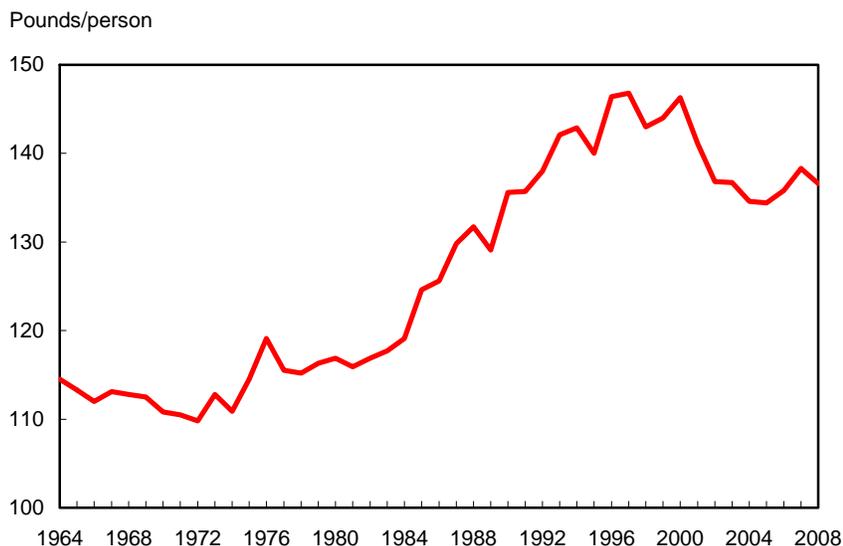
### ***Domestic Demand Exceeds Foreign Demand for 2008/09***

In a reversal from 2007/08, domestic demand exceeded U.S. exports for 2008/09. With the sharp increase in global wheat production, there was more competition for U.S. wheat.

**Total food use.** Total food use, at 925 million bushels, was down 23 million bushels from 2007/08 because of lower per capita flour use and a very high flour extraction rate, as reported by the U.S. Census Bureau. Extraordinarily high flour extraction rates for the 2008 crop meant fewer bushels of wheat needed to be milled to produce the quantity of flour consumed during the 2008/09 marketing year. The average monthly flour extraction rate from 1990/91 to 2007/08 was 74.6 percent. The average rate for this marketing year was 77 percent.

**Per capita flour use.** Per capita flour use for 2008 was estimated at 136.6 pounds, 1.7 pounds below the 2007 estimate (fig. 2). Flour use rose in 2006 and 2007 from the recent low of 134.4 pounds in 2005. This 2005 low was reached after the sharp declines in per capita use from 146.3 pounds in 2000, apparently due to increased consumer interest in low-carbohydrate diets.

Figure 2  
**U.S. per capita wheat flour use**



Source: USDA, Economic Research Service.

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 out of the historic turnaround in U.S. per capita wheat use that occurred in the early 1970s, reflecting 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 health benefits stemming from eating high-fiber grain-based foods.

**Feed and residual use.** Feed and residual use for 2008/09 was up 244 million bushels from the extraordinarily low 16 million bushels in 2007/08. By comparison, feed and residual use was higher for 2008/09 than in any of the 5 marketing years before 2007/08 (155 million bushels on average), in part, because 2008/09 production was also higher than in those years boosting residual loss.

**Exports.** U.S. wheat exports for 2008/09 total 1,015 million bushels, down from 1,263 million bushels for 2007/08. Exports for 2007/08 were exceptionally strong, the highest for the United States since 1992/93.

High wheat prices led to increased global production in 2008 that raised competition for U.S. wheat. Production gains in the Northern Hemisphere were led by the European Union's record 5,551 million bushels, up 26 percent from 2007. Another record 2008 crop comes from Russia, with 2,341 million bushels, up 29 percent from the previous season. Canada's

production jumped 43 percent to 1,051 million bushels. Ukraine's wheat production increased 86 percent, rising to 952 million bushels. Australia's crop rebound to 790 million bushels, up 55 percent from the drought-reduced 2007 harvest. Among the world's major wheat producers, only Argentina saw a harvest decline. A drought reduced Argentina's wheat production to 309 million bushels, down 53 percent from the previous year.

A severe drought across much of the Middle East forced the region to turn to the world market for imports to make up for the production shortfall. U.S. exports to the region surged early in the marketing year, because the U.S. harvest occurs before its competitors.

After a quick start, cumulative exports for 2008/09 dropped below the previous marketing year's pace in September 2008 and by February 2009 were below the 5-year average pace. The pace of U.S. exports in 2008/09 followed a monthly pattern similar to 2007/08, just at a lower level. After the first months of the marketing year, supported by high U.S. corn prices and a strengthening U.S. dollar, U.S. wheat prices were too high relative to those of competing exporters to maintain exports at a high level.

Though monthly U.S. wheat prices fell almost \$2 per bushel from August 2008 through March 2009, the strengthening of the U.S. dollar offset some of this decline and made U.S. exports relatively more expensive for foreign buyers compared with competitor prices. In August and September of 2008, as the global financial crisis began to accelerate, the dollar began to strengthen sharply against the currencies of principal wheat exporters, limiting U.S. exports.

The global financial crisis led to cheaper fuel and excess ship capacity as general trade shrank. These factors led to a decline in bulk freight shipping rates, which bottomed in late 2008. For example, USDA's January 8, 2009 Grain Transportation Report stated that the grain vessel rates from the United States to Japan for December 2008 were down from December 2007 for the Gulf of Mexico and the Pacific Northwest (PNW) by 81.1 percent and 93.6 percent, respectively.

World wheat trade expanded in 2008/09 due to drought reduced domestic production in the Middle East, North Africa and South Asia and as countries took advantage of the big increase in available supplies, falling wheat prices, and lower transportation rates to replenish depleted stocks. World trade reached a record 5.2 billion bushels, up 22 percent from 2007/08. With the lower U.S. exports, year to year, the U.S. lost market share, accounting for 19 percent of global wheat trade in 2008/09 versus 29 percent a year earlier.

**Ending stocks.** Total U.S. ending stocks for 2008/09, at 657 million bushels, were up 351 million bushels from 2007/08, or 115 percent from 2007/08. Ending stocks for 2007/08 were the lowest since the late 1940s (fig. 3).

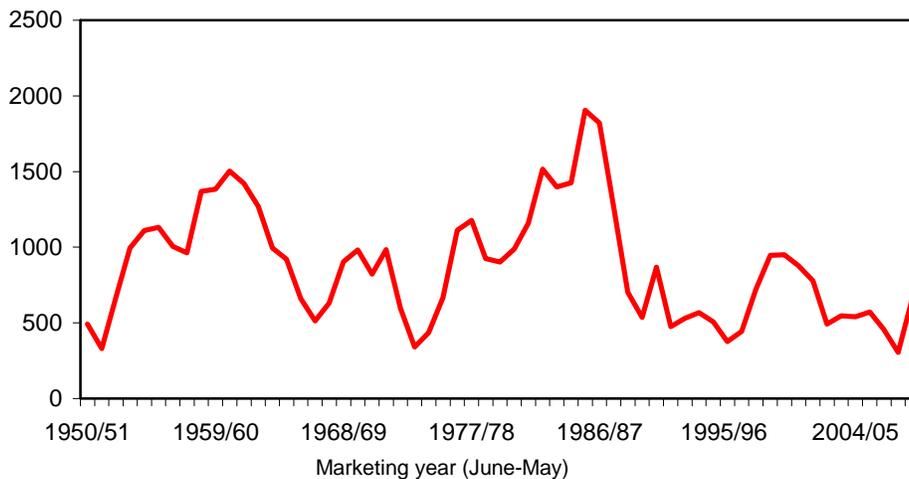
## Monthly Wheat Prices Fell During 2008/09

Under pressure from the sharply increased wheat supplies, monthly prices for 2008/09 drifted downward to a marketing year low of \$5.71 per bushel in March 2009. The monthly average farm gate price in June of 2008 was \$7.62 per bushel. This June all-wheat farmgate price was the highest monthly price of the marketing year (fig. 4). This compares with the peak price in the previous marketing year of \$10.50 per bushel in March 2008.

Figure 3

### U.S. wheat ending stocks, 1950/51-2008/09

Million bushels

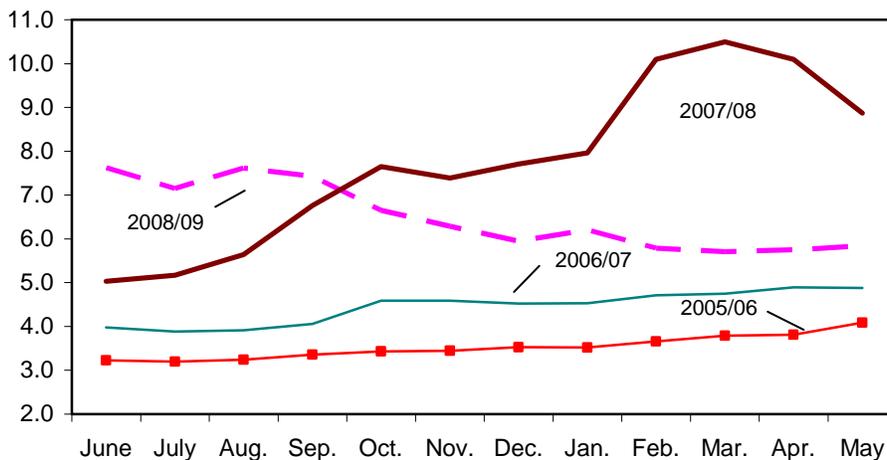


Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

Figure 4

### Monthly wheat prices for 2008/09 still historically high

Dollars/bushel



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

Despite the fall in monthly prices toward the end of the marketing year, the weighted season average price (SAP) for 2008/09 was a record \$6.78 per bushel, up from the 2007/08 SAP of \$6.48 per bushel the previous record price<sup>3</sup>. The SAP for 2008/09 was higher than for 2007/08 because significant quantities of wheat were forward priced during the spring of 2008 when prices were very high. Much of the 2008 crop was also sold in the cash market prior to October 2008 when prices fell sharply. Also, little of the 2007/08 crop was sold at the \$10-plus prices as more than 90 percent of the crop is typically marketed before February when prices hit these levels. The previous record SAP before 2007/08 was \$4.55 per bushel in 1995/96.

<sup>3</sup>Season-average price is the monthly price received by farmers weighted by monthly marketings.

### ***High Prices Result in Low Farm Program Expenditures for 2008 Crop***

The U.S. wheat sector receives various forms of Government assistance, including marketing assistance loans, direct and counter-cyclical payments, crop insurance, and export assistance through credit guarantees and food donation programs<sup>4</sup>.

<sup>4</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).

**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).

For the 2008 crop, loans were made on 84 million bushels and the high farm prices meant that there were no marketing loan gains or loan deficiency payments. The all-wheat loan rate was \$2.75 per bushel. The quantity put under loan was down from a recent peak of 186 million bushels for the 2003 crop when the season average price was \$3.40 per bushel. In 2003, LDPs totaled \$87 million on 494 million bushels.

**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 from current production and prices, providing farmers with a fixed predetermined payment that does not depend on market conditions. Wheat DP expenditures 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 a specified level. The payments were intended to replace ad hoc market loss assistance payments, which supplemented PFC payments in 1998-2001. With 2008/09-wheat prices above the CCP trigger price of \$3.40 per bushel, there were no wheat CCP expenditures for the 2008/09 marketing year.

**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. In 2008, about 49 million wheat acres were insured and total crop insurance premiums for wheat were about \$1.6 billion, of which about \$937 million were premium subsidies paid by the Government. About \$1.1 billion were paid to wheat producers in crop insurance indemnities on the 2008 crop. Participation in revenue insurance increased slightly in 2008, reaching about 78 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 480 (Food for Peace) and the Food for Progress Program. Title I of PL 480 finances sales of commodities under long-term credit arrangements to developing countries that were deemed to have insufficient foreign exchange. Title II provides 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, USDA 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 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. It is funded at about \$100 million per year and includes 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 this decade from an average of 75 percent in the first half of the 1990s. In 2004/05, the level was 18 percent, and in 2005/06, it was 9 percent. In 2006/07, the latest year for which data are available, only 7 percent of U.S. wheat exports were under any of these programs.

## Wheat by Class for 2008/09

### *2008/09 Ending Stocks of All Classes of Wheat Recover From the Historic Lows of 2007/08*

Ending stocks of all classes of U.S. wheat recovered in 2008/09 from the low levels of 2007/08 that had not been seen since the late 1940s. Increased production and reduced exports, year to year, led to the increase in stocks of all wheat classes. Compared with 2007/08, percentage increases of ending stocks by class of wheat were: white, 73 percent; HRW, 85 percent; HRS, 109 percent; durum, 203 percent; and SRW, 211 percent. With increases in stocks, monthly farmgate prices dropped steadily throughout the marketing year.

### *Hard Red Winter wheat (HRW) Production up in 2008 Due to Favorable Weather*

HRW production for 2008, at 1,035 million bushels, was up 79 million bushels from 2007 as much improved growing conditions resulted in higher yields (table 2). There were some adverse weather conditions in HRW growing regions, but not widespread enough to greatly reduce overall production. Central and eastern parts of Oklahoma and Kansas received excessive rain in June and some acres had to be abandoned because of flooding. Parts of Colorado and Texas experienced drought that reduced yields.

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

Item	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Million acres										
Area:										
Planted	30.8	30.4	28.9	30.1	32.6	30.8	30.0	29.3	33.0	31.3
Harvested	24.4	23.6	20.9	19.9	25.6	23.4	24.6	21.3	25.7	25.9
Bushel per harvested acre										
Yield	43.1	35.9	36.7	31.1	41.7	36.6	37.8	32.0	37.2	39.9
Million bushels										
Supply:										
Beg. stocks	435	458	411	363	188	227	193	215	165	138
Production	1,051	846	766	620	1,071	856	930	682	956	1,035
Imports	0	0	1	0	0	1	0	1	1	2
Total supply	1,486	1,304	1,178	984	1,260	1,084	1,123	898	1,121	1,174
Domestic use:										
Food	386	375	366	377	378	382	370	366	397	383
Seed	34	32	34	37	35	33	33	37	35	35
Feed & residual	132	93	65	74	109	86	77	50	15	54
Total domestic	552	500	465	488	522	502	481	453	448	472
Exports	476	393	349	308	510	389	428	280	536	447
Total use	1,028	893	815	795	1,033	891	908	733	984	919
Ending stocks	458	411	363	188	227	193	215	165	138	254

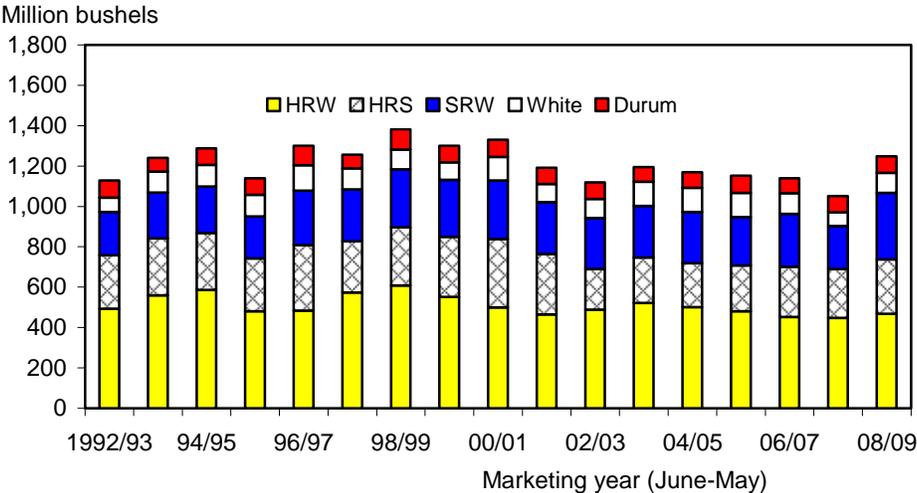
1/ ERS estimates of area, yield, and domestic use.

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

HRW wheat planted acreage was down 1.7 million acres from 2007 to 31.3 million acres due to dry conditions at planting time. The harvest-to-planted ratio for 2008, however, was 83 percent compared with 78 percent in the previous year. With this higher ratio, the harvested area was 0.2 million acres larger than for 2007. High wheat prices made it worthwhile to harvest low-yielding fields that might have been abandoned otherwise. Even so, the average HRW yield was 39.9 bushels per acre, up 2.7 bushels from the 2007 average when production in some HRW areas was hurt by spring freeze and late-season flooding.

HRW supplies in 2008/09 were 53 million bushels higher than a year earlier, as the higher production more than offset beginning stocks that were 27 million bushels lower. Total use was 65 million bushels lower than the previous year (fig. 5 and 6). Lower exports, down 89 million bushels, more than offset increased domestic use. Cumulative HRW exports for 2008/09 initially exceeded the pace of 2007/08 exports until December 2008. The slower export pace for 2008/09 continued through to the end of the marketing year as relatively high prices limited export opportunities.

Figure 5  
**U.S. domestic wheat use for 2008/09 higher than recent years**

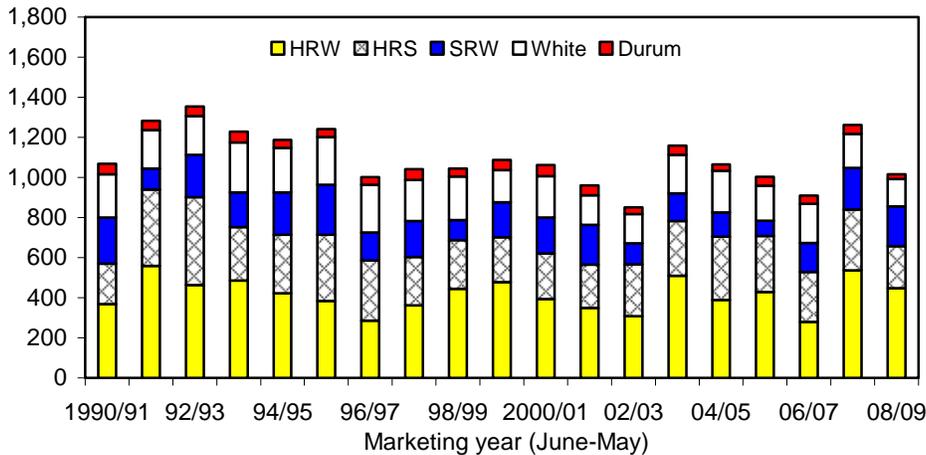


HRW = Hard red winter. HRS = Hard red spring. SRW = Soft red winter.  
 Source: USDA, Economic Research Service, *Wheat Outlook*.

Figure 6

**Wheat exports down substantially in 2008/09**

Million bushels



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

Feed and residual use for 2008/09, while up markedly over the very low level in 2007/08, was limited by the relatively high wheat-to-corn price ratio. Reduced HRW food use offset about half of the increased feed and residual use. Per capita flour use was down from 2007/08. In addition, the extraordinarily high extraction rate for HRW meant that millers needed fewer bushels of wheat to produce a given quantity of flour (table 3). The net result was to raise HRW ending stocks by 116 million bushels compared with the previous year. The stocks-to-use ratio for 2008/09 doubled from 2007/08 to 28 percent. The stock level for 2007/08 was very low, with an ending stocks-to-use ratio of 14 percent, much less than the previous 5-year average of 23 percent.

HRW food use was higher than it would have been otherwise because of the very low stocks of hard red spring (HRS) at the end of the 2007/08 marketing year. Many HRS mills switched to milling HRW in the spring of 2007 when the price of HRS went very high relative to HRW. The switch was influenced by the low HRS stocks and the fact that the HRS harvest would be several weeks later than the HRW harvest. These mills continued to mill HRW into the 2008/09 marketing year because HRS cash bid prices were more than a \$1.00 per premium to HRW from late October 2008 through the end of the marketing year.

The monthly farmgate prices received by farmers for HRW declined steadily from the June season-high price of \$7.91 per bushel through to a December price of \$5.48 (fig. 7). The SAP received by farmers then remained in the mid- to upper \$5 range during the remainder of the marketing year.

Table 3--Summary of wheat class qualities for 2008

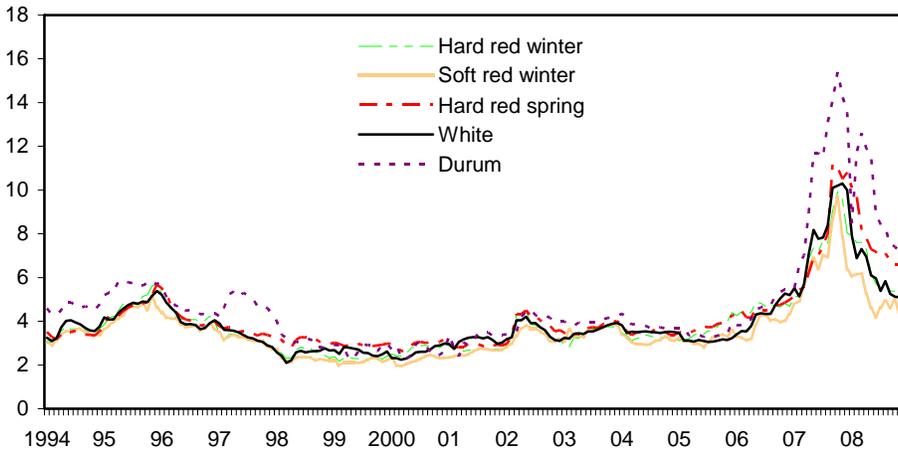
Class	Protein (Percent)	Flour/semolina extraction (Percent)	Test weight (Pounds/bushel)	Wheat falling numbers (Seconds)
2008 wheat crop:				
Hard red winter	12.3	74.4	60.2	437
Hard red spring	14.3	69.2	60.8	379
Soft red winter	9.8	68.6	59.2	3
Soft white	11.2	71.1	58.9	321
Durum	14.8	61.1	60.2	322
2007 wheat crop:				
Hard red winter	11.6	68.3	59.7	417
Hard red spring	14.3	67.7	61.1	432
Soft red winter	10.3	71.0	60.0	343
Soft white	10.2	68.8	60.0	331
Durum	15.1	63.8	59.9	367
5-year average:				
Hard red winter	12.4	69.0	59.9	400
Hard red spring	14.4	68.8	60.7	405
Soft red winter	10.0	69.3	59.4	343
Soft white	10.4	68.8	59.8	339
Durum	14.3	64.5	60.7	375

Source: U.S. Wheat Associates. *Crop Quality Report 2007*.

Figure 7

**Average monthly prices received by wheat farmers, June 1994-May 2008**

Dollars/bushel



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

## ***HRS Production up in 2007/08 Due to Favorable Weather and Large Acreage***

HRS production for 2008, at 512 million bushels was up 62 million bushels from 2007 with slightly higher planted and harvested area and higher yields (table 4). Spring wheat planting in the six major producing States started off at normal or ahead of normal, but development fell behind with cool June temperatures<sup>5</sup>. Hot and dry weather during July 2008 caused the crop condition ratings to decline and accelerated maturation, but development remained behind normal delaying harvesting in all States in the growing area.

HRS wheat planted area was up 0.8 million acres from the previous year to 13.5 million acres. The harvest-to-planted rate of 95 percent was below the 2007 rate of 97 percent, thus, harvested area was only up 0.4 million acres. The average yield for the HRS crop was up 3.6 bushels per acre to 39.9 bushels per acre.

HRS supplies in 2008/09 were up 10 million bushels from a year earlier. Production was up enough to more than offset the sharply lower beginning stocks. Total use was 64 million bushels lower than in 2007/08. Exports were 94 million bushels lower than a year earlier, while domestic use was up only 30 million. Cumulative HRS exports for 2008/09 were significantly below the 2007/08 and 5-year average pace throughout the marketing year.

The monthly farmgate prices received by HRS producers declined steadily, except for a couple of upticks, from the June 2008 season-high price of \$10.10 per bushel through to the end of the marketing year. The lows of the year were \$6.57 per bushel for March and April.

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

Item	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Million acres										
Area:										
Planted	14.3	14.4	14.8	14.8	13.1	13.0	13.3	14.4	12.7	13.5
Harvested	13.8	13.6	13.7	12.6	12.7	12.5	12.9	13.4	12.4	12.8
Bushels per harvested acre										
Yield	32.5	37.0	34.6	27.9	39.2	42.2	36.0	32.2	36.3	39.9
Million bushels										
Supply:										
Beg. stocks	233	218	210	230	145	157	159	132	117	68
Production	448	502	475	351	500	525	467	432	450	512
Imports	56	56	61	23	9	8	12	50	48	45
Total supply	737	776	746	605	654	690	638	614	615	625
Domestic use:										
Food	242	267	250	215	223	228	227	236	233	224
Seed	24	20	23	20	19	21	21	19	20	17
Feed & residual	28	51	26	-33	-17	-33	-22	-6	-11	32
Total domestic	295	339	299	202	225	216	226	248	243	273
Exports	224	227	217	258	272	315	280	248	304	210
Total use	518	566	516	460	497	531	506	497	547	483
Ending stocks	218	210	230	145	157	159	132	117	68	142

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

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

<sup>5</sup>The six major States producing HRS are Idaho, Minnesota, Montana, North Dakota, South Dakota, and Washington.

The substitution of HRW for HRS continued from 2007/08 into 2008/09 because HRS was harvested several weeks later than HRW. The net result was higher HRS ending stocks for 2008/09, up 74 million bushels from the historically low level in 2007/08. The 29 percent ending stocks-to-use ratio for 2008/09 is a recovery to historic norms. The 2007/08 ratio was 12 percent, much lower than the 29-percent average of the previous 5 years.

### ***SRW Production Was the Highest Since 1981***

SRW production for 2008, at 614 million bushels, was up 262 million bushels from 2007 (table 5). Production was the highest since the record 678 million bushels in 1981. Planting conditions in fall 2007 were favorable, which together with high prices, prompted an increase in planted area of 2.6 million acres over 2007/08. The favorable weather during the growing season and high prices resulted in a sharp improvement in the harvest-to-planted rate from the previous year, 90 percent compared with 81 percent. Thus, harvested area increased 3.0 million acres over the previous year. The favorable weather resulted in a year-to-year increase of 10.9 bushels per acre to an average of 60.9 bushels per acre. Yields for 2007 in some areas were reduced by a late-season freeze, which contributed to higher abandonment.

SRW supplies for 2008/09 were up 227 million bushels from 2007/08 mostly because of sharply increased production. Total use was up 111 million bushels compared with the previous year as a 120-million-bushel increase in domestic use offset a 9-million-bushel decline in exports. Cumulative SRW exports exceeded the 2007/08 pace in July and August before falling off slightly during the remainder of the year; however, the 2008/09 export pace significantly exceeded the 5-year average pace throughout the year.

The increase in domestic SRW use was due to much higher feed and residual use, largely a result of low SRW prices relative to corn prices. Ending stocks for 2008/09 were up 116 million bushels from 2007/08. The ending stocks-to-use ratio for 2008/09 rebounded to 32 percent. The ratio for 2007/08 was 13 percent, much less than the 5-year average of 23 percent.

With production and stocks higher, and lackluster exports, monthly farmgate prices for SRW producers declined steadily from the August season-high price of \$6.19 per bushel to a low of \$4.17 in November. The SRW price then moved higher, twice exceeding \$4.90 per bushel, before ending the marketing year with a May price of \$4.75.

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

Item	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Million acres										
Area:										
Planted	9.1	9.5	8.6	8.1	8.3	8.2	6.1	7.4	8.6	11.2
Harvested	8.0	8.1	7.1	6.5	6.8	7.0	5.1	6.2	7.0	10.1
Bushels per harvested acre										
Yield	56.6	57.9	55.8	49.6	55.6	54.2	59.9	63.2	50.0	60.9
Million bushels										
Supply:										
Beg. stocks	136	133	135	78	55	64	88	106	109	55
Production	452	469	397	321	380	380	308	390	352	614
Imports	4	3	3	13	22	22	26	20	14	34
Total supply	592	605	535	412	457	466	423	515	475	702
Domestic use:										
Food	155	153	155	165	153	155	155	165	150	155
Seed	18	16	16	16	16	12	14	16	21	16
Feed & residual	111	120	87	72	87	89	71	80	40	161
Total domestic	285	290	258	253	256	255	241	261	212	332
Exports	174	180	200	105	138	122	76	145	208	199
Total use	459	470	457	357	393	378	317	406	420	531
Ending stocks	133	135	78	55	64	88	106	109	55	171

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

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

### ***White Wheat Production up for 2008***

White winter wheat yields in Washington were down in 2008 from the previous year due to a lack of rain and unseasonably high temperatures during the growing season. Although the Idaho and Oregon white winter wheat crops faced dry weather in May and June, conditions improved and 2008 yields were up from a year earlier.

White wheat production for 2008, at 255 million bushels, was up 34 million bushels from 2007 (table 6). Of this 2008 total, 219 million bushels was winter wheat and 36 million was spring wheat. Planted area for both winter and spring were up from 2007, 0.38 million acres to 3.78 million acres and 0.13 million acres to 0.71 million acres, respectively. Similarly for winter and spring harvested area, up 0.41 million acres to 3.60 million acres and 0.13 million acres to 0.69 million acres, respectively. The all-white yield for 2008 was 59.5 bushels per acre, up 0.4 bushels from 2007. The winter yield was up 0.7 bushels to 60.9 bushels per acre and spring was down 0.7 bushels to 52.4 bushels per acre. Hard white winter production for 2008 was 23 million bushels and hard white spring production was 6 million bushels.

Total 2008/09 white-wheat supplies were up 25 million bushels from 2007/08 because higher production more than offset lower beginning stocks and imports. Total use was down slightly compared with 2007/08 as declining exports were partly offset with higher feed and residual use. White-wheat food use was unchanged. Cumulative white-wheat exports for 2008/09 were significantly below the 2007/08 and 5-year average pace through out the marketing year.

Table 6--White wheat supply and demand 1/

Item	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Million acres										
Area:										
Planted	4.4	4.4	4.2	4.4	5.2	5.1	4.9	4.3	4.0	4.5
Harvested	4.1	4.2	4.0	4.1	5.0	4.8	4.7	4.1	3.7	4.3
Bushels per harvested acre										
Yield	60.0	75.1	56.9	56.4	59.5	64.5	63.7	61.5	59.1	59.5
Million bushels										
Supply:										
Beg. stocks	87	91	75	73	75	72	63	78	44	37
Production	245	301	226	233	297	305	297	251	221	255
Imports	6	5	8	11	11	11	10	10	9	8
Total supply	339	397	309	317	383	388	370	339	275	300
Domestic use:										
Food	75	74	75	80	85	75	85	85	85	85
Seed	6	6	6	7	7	6	6	5	6	5
Feed & residual	6	37	8	8	27	36	27	9	-23	11
Total domestic	87	116	89	94	119	118	118	100	68	100
Exports	161	206	147	147	192	208	174	195	169	136
Total use	248	322	236	242	311	326	292	295	238	236
Ending stocks	91	75	73	75	72	63	78	44	37	64

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

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

Ending stocks for 2008/09 were up 27 million bushels from a year earlier. The ending stocks-to-use ratio for 2008/09 rebounded to 27 percent. The 2007/08 ratio was 16 percent, sharply lower than the average of the previous 5 years of 23 percent.

With increased supplies and the prospect of higher ending stocks, the monthly farmgate prices for soft white wheat producers declined steadily, except for a couple of upticks, from the June season-high price of \$7.88 per bushel to a marketing year low of \$5.10 in April.

### ***Durum Production up for 2008/09***

Durum production was up 12 million bushels from 2007 to 84 million bushels for 2008 as expanded planted and harvested area more that offset lower yields (table 7). Durum planting on the Northern Plains began earlier than normal and dry conditions allowed rapid progress. Growing conditions improved in June with rains across most of the durum region<sup>6</sup>. However, by July, hot, dry conditions reduced yield potential over a significant portion of the region. Yields were below 2007s levels in all States except California.

Planted and harvested areas for the 2008 durum crop were up 0.56 million acres and 0.45 million acres, respectively, from 2007. For 2008, planted area was 2.72 million acres and harvested area was 2.57 million acres. Average durum yield for 2008 was 32.6 bushels per acre, down 1.5 bushels from 2007.

<sup>6</sup>The durum area in the Northern Plains includes Idaho, Montana, North Dakota, and South Dakota.

Table 7--Durum supply and demand 1/

Item	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Million acres										
Area:										
Planted	4.0	3.9	2.9	2.9	2.9	2.6	2.8	1.9	2.2	2.7
Harvested	3.6	3.6	2.8	2.7	2.9	2.4	2.7	1.8	2.1	2.6
Bushels per harvested acre										
Yield	27.8	30.7	30.0	29.5	33.7	38.0	37.2	29.5	34.1	32.6
Million bushels										
Supply:										
Beg. stocks	55	50	45	33	28	26	38	40	21	8
Production	99	110	84	80	97	90	101	53	72	84
Imports	28	26	34	30	21	29	32	41	40	38
Total supply	182	185	163	143	145	145	171	135	134	130
Domestic use:										
Food	71	81	83	81	73	70	80	86	83	78
Seed	9	4	5	5	3	5	3	4	4	2
Feed & residual	1	0	-6	-4	-3	2	3	-15	-6	1
Total domestic	81	85	81	82	73	77	85	74	81	81
Exports	51	56	49	33	46	31	45	40	45	24
Total use	133	140	130	115	119	108	131	114	126	105
Ending stocks	50	45	33	28	26	38	40	21	8	25

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

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

California and Arizona Desert Durum accounted for 36 percent of the country's durum production in 2008, substantially above the average in recent years. Because of the very low durum carryin stocks for the 2008/09 marketing year, durum millers relied more than usual upon the Desert Durum crop to provide supplies early in the season before the 2008 harvest in the Northern Plains.

Overall, 2008/09 durum supplies were 4 million bushels lower than a year earlier. Imports and beginning stocks were lower by 2 million bushels and 13 million bushels, respectively, offsetting higher production. Total use was down 21 million bushels from 2007/08 as lower exports more than offset a slight increase in domestic use. By August 2008, the durum cumulative export pace fell off the 2007/08 and 5-year pace. For the rest of the 2008/09 marketing year, the durum export pace was sharply lower than the 5-year pace and the even higher pace for 2007/08.

Ending stocks for 2008/09 were up 17 million bushels year-to-year. The ending stocks-to-use ratio for 2008/09 rebounded to 24 percent. The ratio for 2007/08 was 7 percent, much lower than the 5-year average of 26 percent.

The monthly farmgate prices for durum wheat producers rose sharply from June to a market-year high of \$12.60 per bushel in August 2008. Prices held steady for the following 2 months, then dropped sharply in November with the increasing availability of new crop supplies. The monthly durum farmgate price then drifted lower, reaching a marketing-year low of \$7.05 per bushel in May.

Because of the extremely low ending stocks for 2007/08, durum millers relied upon the Desert Durum crop grown in California and Arizona to provide early supplies before the 2008 harvest in the Northern Plains. In addition, because the durum cash bid prices were so much higher than the HRS prices through February of the

2008/09 marketing year, HRS was often substituted for durum semolina in pasta products that were not guaranteed to be 100-percent semolina.

Per capita flour use for 2008 was estimated at 11.4 pounds, down 0.9 pounds from the 2007 estimate. Durum flour use rose for 3 years in a row from the recent low of 10.6 pounds in 2004, which was reached after sharp declines in per capita use from 13.0 pounds in 2001. (See table 31 at [www.ers.usda.gov/Data/Wheat/WheatYearbook.aspx](http://www.ers.usda.gov/Data/Wheat/WheatYearbook.aspx).)