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Feed Year in Review (Domestic): Feed Grain Prices Remained Strong

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Record-high food, seed, and industrial use in 2008/09, largely on account of increased ethanol production, kept feed grain prices strong, despite rising ending stocks year-to-year for all feed grains. The season average-farm price for corn was estimated at \$4.06 per bushel in 2008/09, compared with \$4.20 per bushel in 2007/08. Grain sorghum prices were weaker over the period, as an increase in domestic use was more than offset by a decline in exports. The 2008 barley crop was up from that of 2007, boosting supplies and ending stocks on the year. Despite increased supplies, the all-barley farm price was \$5.37 per bushel in 2008/09, up from \$4.02 per bushel in 2007/08, reflecting higher prices for malting barley. The season-average farm price for oats was stronger in spite of large supplies in Canada. Prices for all hay were up in 2008/09 from 2007/08. Prices were strong because production in 2009 and stocks in December 1 were lower.

Keywords: Corn, grain sorghum, barley, oats, hay, ethanol, and corn sweeteners.

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Feed Grain Supply and Use

Feed Grains Use Down, Ethanol Use Up in 2008/09

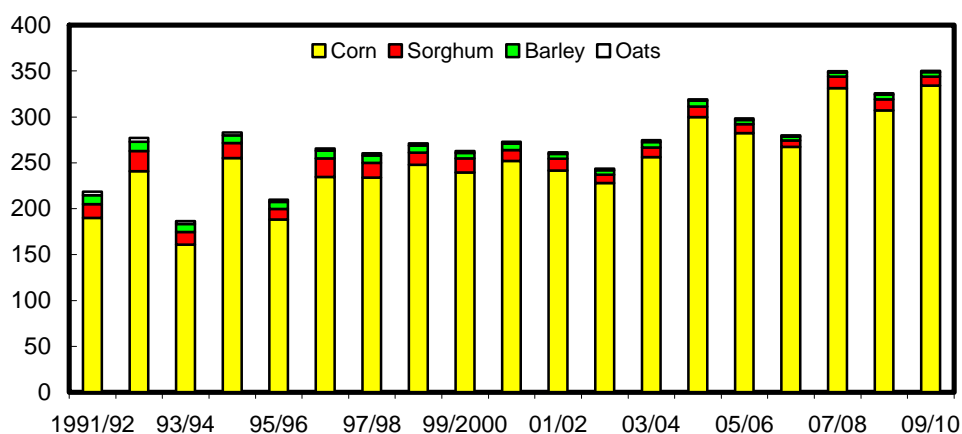
Total U.S. feed grain disappearance was 326.6 million metric tons in 2008/09, down from 344.1 million in 2007/08. Feed and residual use was 142.5 million metric tons in 2008/09, down 14.6 million from the previous year. Food, seed, and industrial (FSI) use was 133.0 million tons in 2008/09, up from 117.1 million in 2007/08, due to increased ethanol production. Feed grain exports were 51.2 million tons in 2008/09, down from 69.9 million in 2007/08, mainly due to a reduction in global demand and some loss of U.S. market share. Despite increased FSI use, lower feed and residual use and exports leave projected ending stocks higher at 47.0 million tons, up from 45.1 million the previous year.

Total U.S. feed grain supplies in 2008/09 were 373.7 million metric tons, down from 389.1 million in 2007/08. Lower feed grain production stemmed from lower corn and sorghum production in 2008. However, beginning stocks were up year over year due to larger production of corn and sorghum during the 2007/08 market year. Feed grain imports were 3 million metric tons, down from 3.3 million the previous year, as high domestic prices and weak economic conditions slowed demand.

Figure 1

U.S. feed grain production

Mil. metric tons

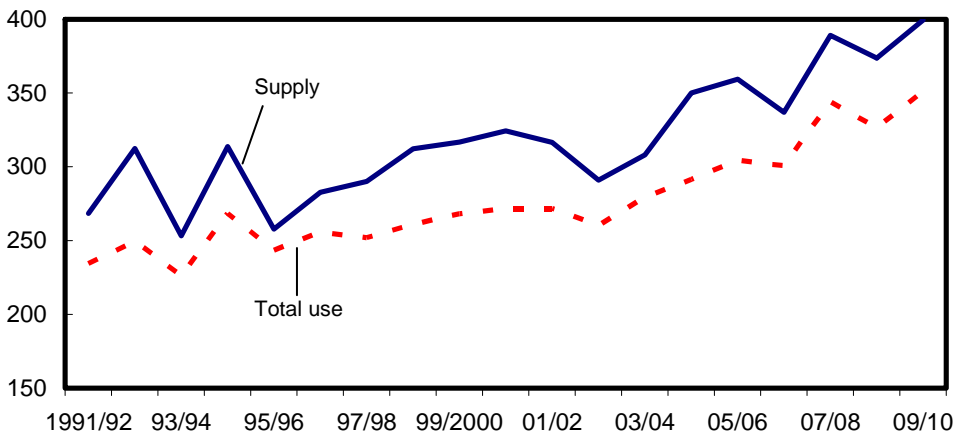


Source: USDA, National Agricultural Statistics Service, *Crop Production*.

Figure 2

U.S. feed grain supply and use

Mil. metric tons

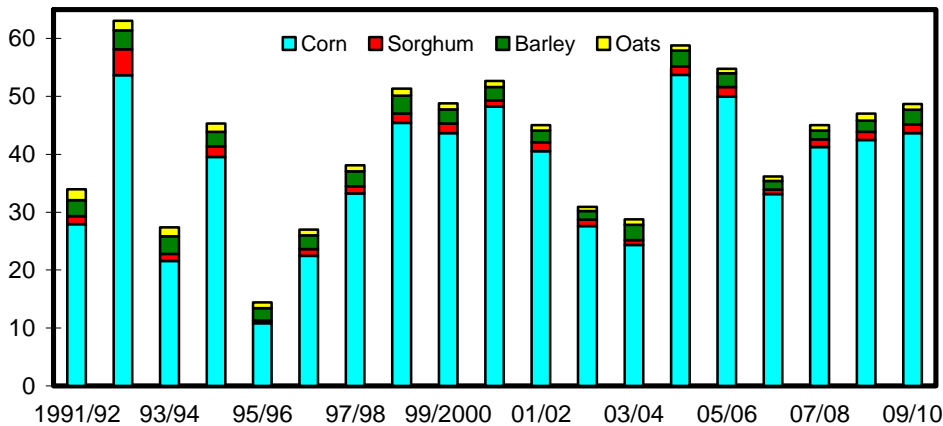


Source: USDA, World Agricultural Outlook Board, WASDE.

Figure 3

U.S. ending stocks of feed grains

Mil. metric tons



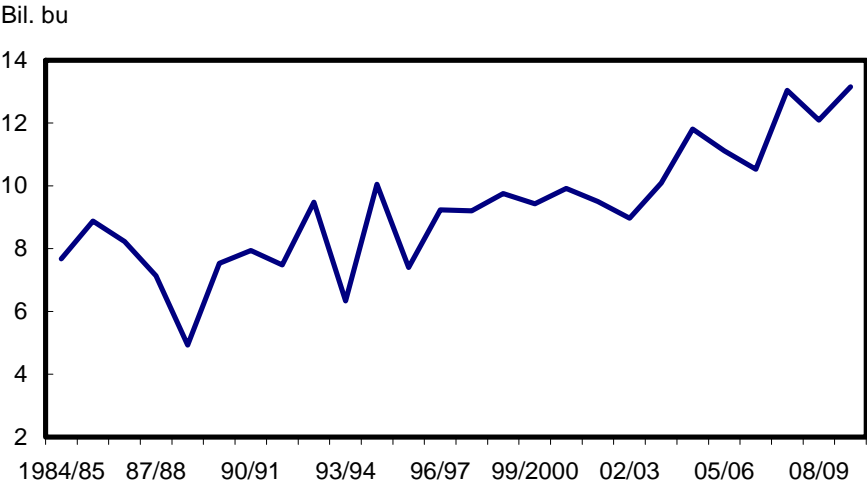
Sources: USDA, Foreign Agricultural Service, *Production, Supply and Distribution (PS&D)*, and USDA, *Grain, World Markets and Trade (Grain Circular)*.

Corn Production Declined in 2008/09

U.S. corn production was 12.09 billion bushels in 2008/09, down from 13.04 billion in 2007/08. The year-to-year decrease stems mostly from a 7.5-million-acre decrease in planted area and a 7.9-million-acre decrease in area harvested for grain. The corn yield was up at 153.9 bushels per acre in 2008/09, compared with 150.7 bushels per acre in 2007/08. Beginning corn stocks in 2008/09 were 1,624 million bushels, up 320 million from the previous year. Projected total U.S. corn supply was 13,729 million bushels in 2008/09, down 633 million from 2007/08 as a result of lower production.

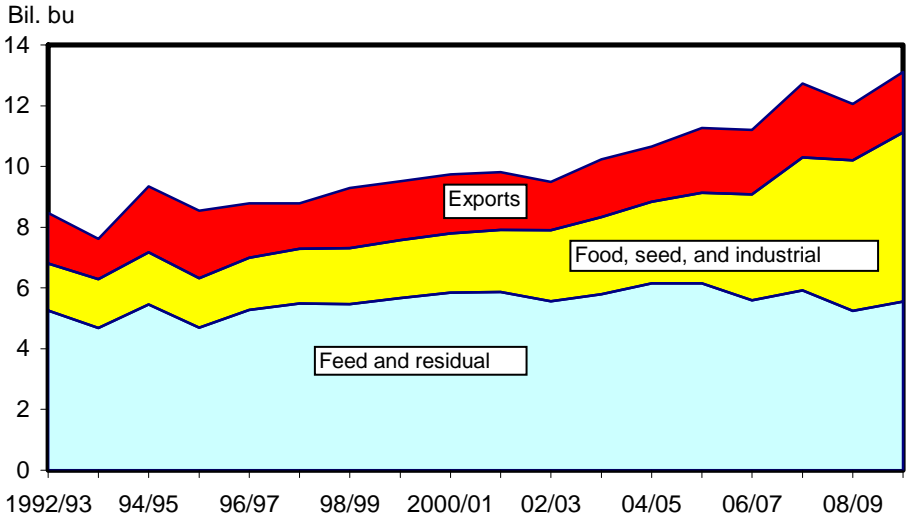
Regionally, estimated 2008 yields were equal to or higher than those of the previous year across the western and central Corn Belt and the northern half of the Great Plains, where heavy spring and early summer precipitation and timely rainfall during late summer provided adequate soil moisture supplies. Yields were lower than those of the previous year across parts of the Ohio Valley, the southern half of the Great Plains, and the Carolinas, where dry weather stressed the crop. Yields were also lower in the Delta, due to excessive moisture and high winds from Hurricanes Gustav and Ike.

Figure 4
U.S. corn production



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

Figure 5
U.S. corn disappearance by type of use

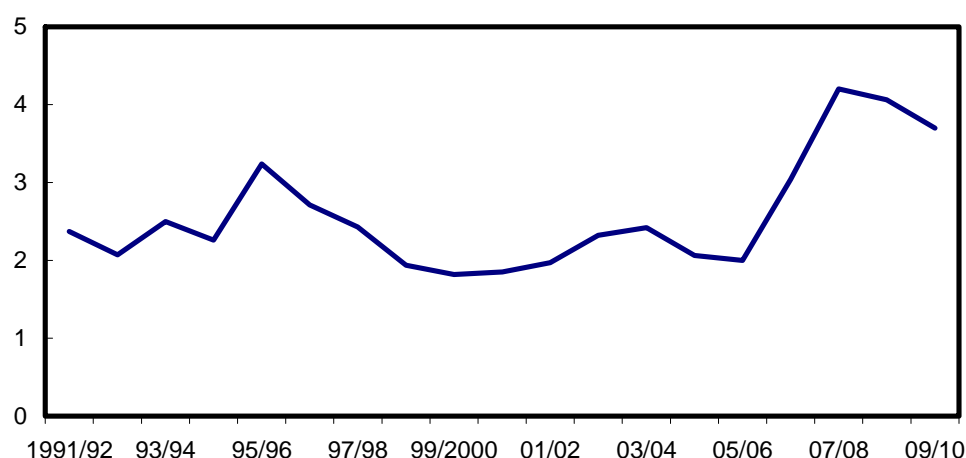


Source: USDA, World Agricultural Outlook Board, *WASDE*.

Figure 6

Season-average corn prices received by U.S. farmers

Dol./bu

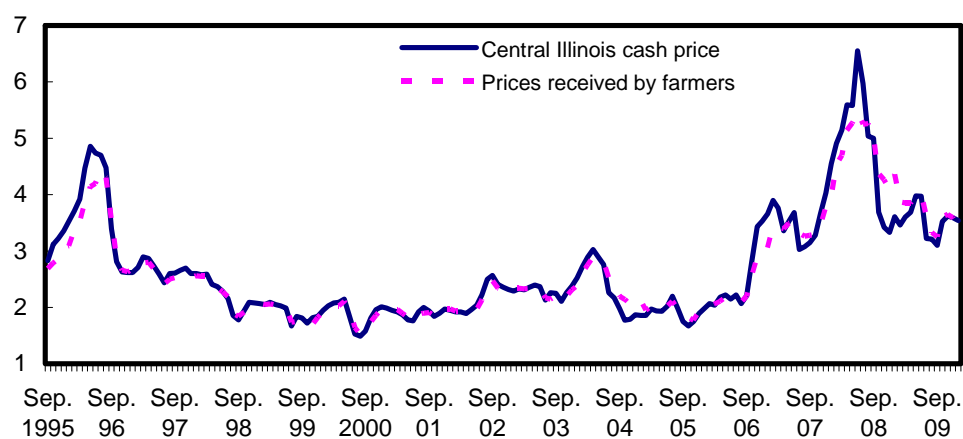


Source: USDA, World Agricultural Outlook Board, WASDE.

Figure 7

U.S. corn: Central Illinois cash and average farm price, monthly

Dol./bu



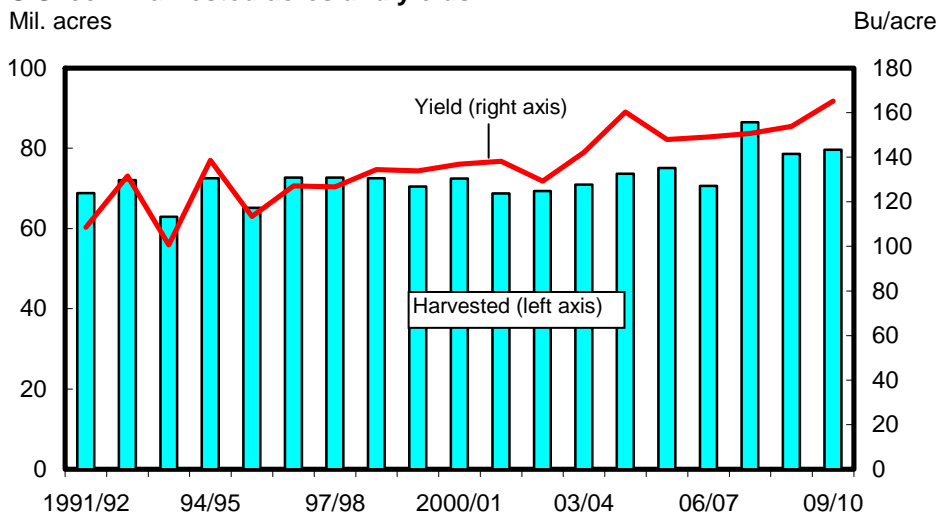
Sources: USDA, Agricultural Marketing Service, *Weekly Grain Market News Summary*, and USDA, Economic Research Service, *Feed Grains Database*.

U.S. corn planted area in 2008, at 86.0 million acres, was down 8 percent from that in 2007. Planted acreage decreased in most States as a result of favorable prices for other crops, high fertilizer prices, and a return to normal crop rotation patterns. Corn area harvested for grain, at 78.6 million acres in 2008, was down 9 percent from 2007.

The 2008 objective yield data for corn indicated a record-high number of ears per acre for the combined 10 objective yield States (Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin). Record-high

Figure 8

U.S. corn harvested acres and yields



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

ear counts were recorded in all objective yield States, except Kansas and Nebraska. However, due to late planting and wet conditions, yield loss in some major corn-producing areas kept yields down from record highs.

Corn Utilization Down in 2008/09

Total U.S corn utilization was 12,056 million bushels in 2008/09, down from 12,737 million in 2007/08. This year-to-year decrease stems from decreases in exports and feed and residual use, which were partially offset by an increase in FSI use.

FSI use reached a record 4,953 million bushels in 2008/09, up from 4,387 million in 2007/08. High fructose corn syrup (HFCS) production was down 5 percent from the previous year to 466 million bushels. Corn used for glucose and dextrose was 230.1 million bushels, down slightly from 235.6 million the previous year. Corn used for starch production was at 231.6 million bushels, down 12 percent from the previous year, also as a result of weak economic conditions that lowered demand for construction materials and paper products derived from starch.

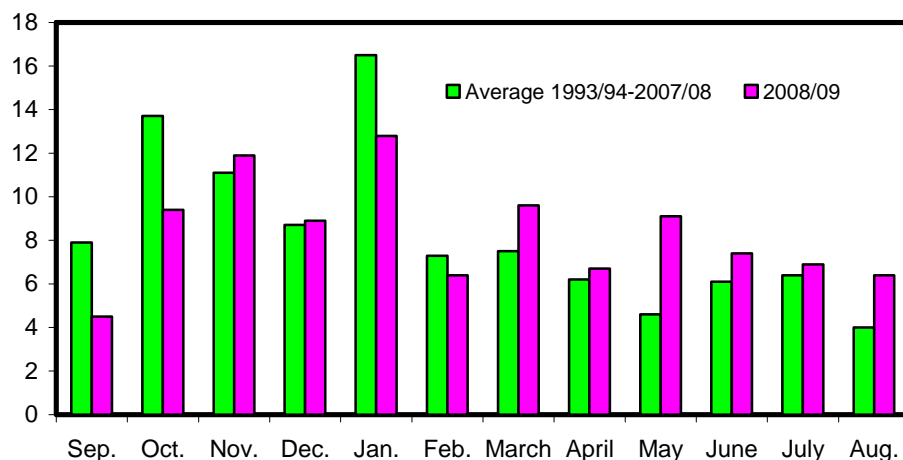
Record ethanol production drove the year-to-year increase for total FSI use. Estimated corn use for ethanol was 3,677 million bushels, up 628 million from the previous year. According to the Renewable Fuels Association (RFA), as of September 16, 2008, the United States had 10.250 billion gallons of available ethanol production capacity. As of September 24, 2009, this amount had risen to 13.063 billion gallons; however, RFA reported that about 12 percent of this capacity was idled at that time. Poor returns for ethanol producers and falling gasoline demand during winter and spring 2008/09 reduced ethanol production, resulting in a number of bankruptcies and reorganizations in the ethanol sector.

Feed and residual use of corn was 5,246 million bushels in 2008/09, down from 5,913 million a year earlier due to lower livestock inventories and increased use of

Figure 9

Percent of U.S. corn marketed by month

Percent



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

distillers' grains. Corn exports were 1,858 million bushels in 2008/09, down sharply from a record 2,437 million in 2007/08. Reduced global demand for corn and increased global supplies of feed-quality wheat lowered U.S. corn exports during 2008/09.

Corn Prices Remained Strong Throughout 2008/09

With utilization decreasing more than supplies, U.S corn ending stocks in 2008/09 increased 49 million bushels from the previous year to 1,673 million bushels. The season-average corn price received by producers was \$4.06 per bushel in 2008/09, compared with \$4.20 per bushel in 2007/08.

The benchmark Central Illinois cash corn price averaged \$3.68 per bushel for the 2008/09 marketing year, down sharply from \$4.79 per bushel for the previous marketing year. Central Illinois cash corn prices were also well below the actual prices received by producers during 2008/09. Cash prices dropped early in the 2008/09 marketing year from their record highs during the 2007/08 marketing year. Farmers typically price a portion of their production before harvest, sometimes even before planting, if prices seem high for fall delivery. With the price runup during spring and summer 2008, many farmers were able to lock in high prices for the 2008/09 marketing year; therefore, average prices received by farmers were higher than quoted market bids.

Corn Production a New Record in 2009/10

U.S. corn production is forecast at a record 13.151 billion bushels in 2009/10, up from 12.092 billion in 2008/09. Based on conditions as of December 1, 2009, yields are estimated to average a record 165.2 bushels per acre, which is 11.3 bushels above that of the previous year. Beginning stocks are estimated at 1,673 million bushels, and total supply is projected at a record 14,834 million bushels, up from 13,729 million in 2008/09.

Sorghum Production Down in 2008/09

The U.S. sorghum crop was 472 million bushels in 2008/09, down from 497 million in 2007/08. The number of acres planted in 2008 was 8.3 million, up 0.6 million from 2007. The average sorghum yield, at 65.0 bushels per acre in 2008, was down 8.2 bushels per acre from a record-high yield in 2007. Delayed plantings due to wet conditions and cool weather delayed maturity and reduced yields. Harvested area was 7.3 million acres in 2008/09, up 0.5 million from that in 2007/08. Beginning stocks were 53 million bushels in 2008/09, which boosted total supply to 525 million bushels; however, this was still down from 530 million in 2007/08.

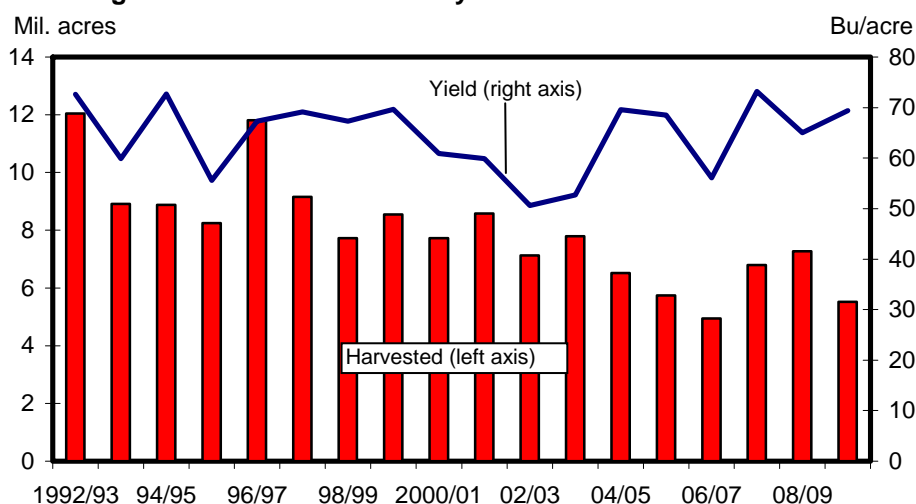
Among all States, Texas led in area planted to sorghum for all purposes (including silage production) in 2008, while Kansas led in grain sorghum production. Although area harvested for grain decreased over the period in 15 of the 21 estimating States in 2008, Texas and Kansas increased their acres by 25 and 4 percent, respectively, to boost the U.S. total above that in 2007. The yield in the two largest producing States of Kansas and Texas decreased 1 and 13 bushels per acre, respectively, from the high levels of the previous year.

Sorghum Use Down in 2008/09

Total U.S. sorghum utilization for 2008/09 was 470 million bushels, down from 477 million in 2007/08. Feed and residual use was 232 million bushels in 2008/09, up from 165 million bushels in 2007/08. This increase was driven primarily by sorghum's price discount relative to that for corn, as a result of reduced sorghum export demand. Estimated FSI use in 2008/09 was 95 million bushels, up from 35 million in 2007/08. Ethanol is the primary FSI category for sorghum, as sorghum use for ethanol production was estimated at 19.5 percent of total utilization for 2008/09. Corn is the dominant starch source used in U.S. ethanol plants, but

Figure 10

U.S. sorghum harvested acres and yields



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

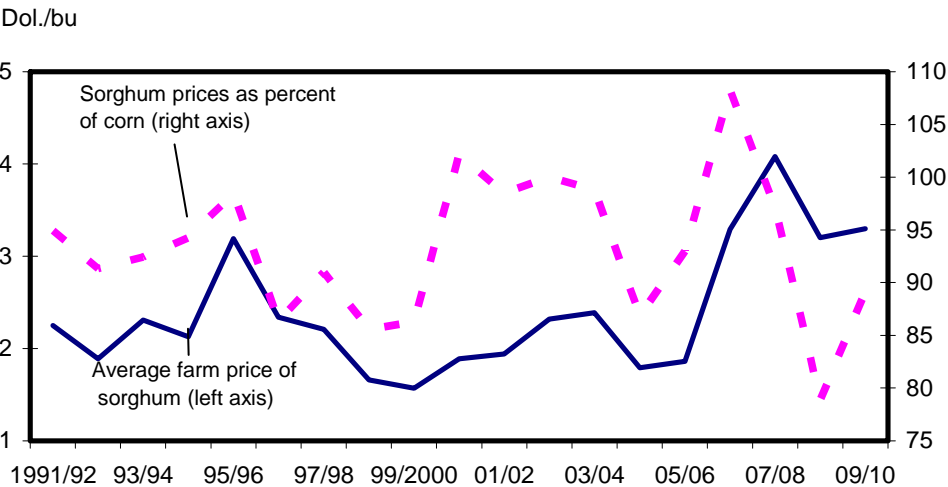
sorghum is the primary grain used in some plants, particularly in the Southern and Central Plains. Some ethanol plants use either corn or sorghum or a mix of both grains, depending on price and availability.

U.S. sorghum exports were 143 million bushels in 2008/09, down sharply from 277 million bushels in 2007/08, as the grain deficit in the European Union disappeared, weakening world demand for nongenetically modified feed grains. As a result of lower supplies and utilization, ending stocks were 55 million bushels for 2008/09, up slightly from 53 million in 2007/08.

Sorghum Prices Down in 2008/09

The U.S. season-average sorghum farm price was \$3.20 per bushel in 2008/09, compared with \$4.08 per bushel in 2007/08. Over time, sorghum prices average 92-93 percent of the corn price, but this is an unsteady relationship. For the 2008/09 marketing year, corn producers forward priced a substantial part of their production and, as a result, ended up receiving higher prices at harvest than were available in the cash market. Forward pricing opportunities are more limited for sorghum because there is no sorghum futures market. Sorghum producers sell most of their production after harvest on the cash market. Sorghum prices received by farmers averaged 79 percent of the price of corn in 2008/09.

Figure 11
Sorghum prices received by U.S. farmers and percent of corn price

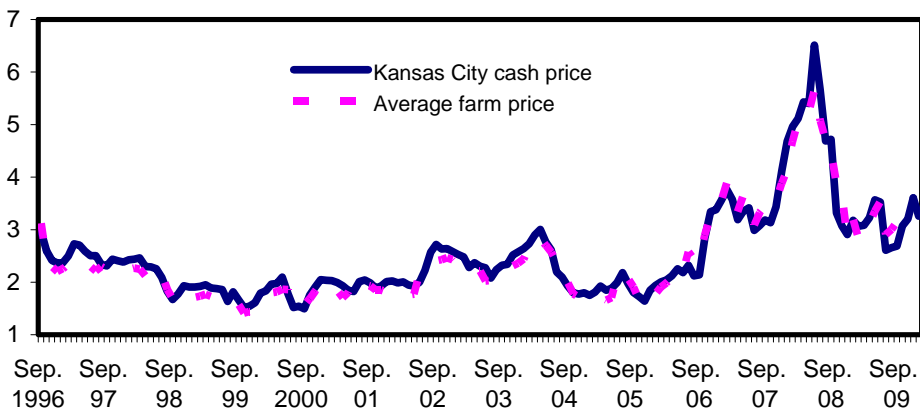


Sources: USDA, Economic Research Service, *Feed Grains Database*, and USDA, World Agricultural Outlook Board, *WASDE*.

Figure 12

U.S. sorghum: Kansas City cash and average farm price, monthly

Dol./bu

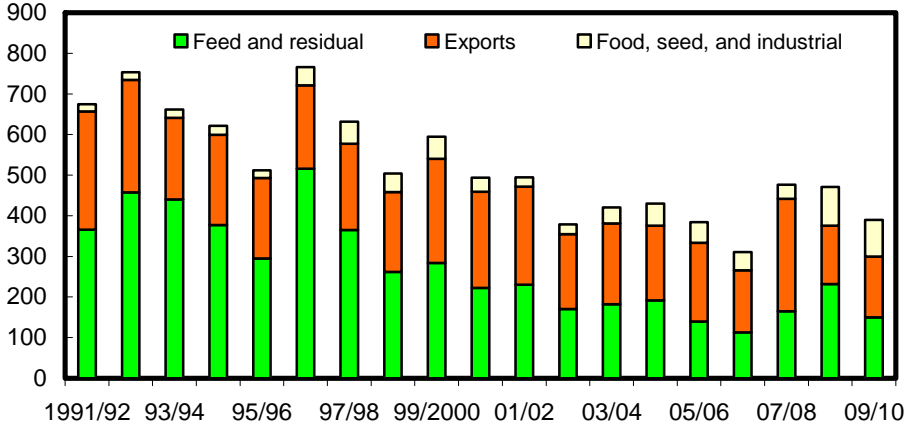


Sources: USDA, Agricultural Marketing Service, *Weekly Grain Market News*, and USDA, Economic Research Service, *Feed Grains Database*.

Figure 13

U.S. sorghum disappearance by use

Mil. bu



Source: USDA, World Agricultural Outlook Board, WASDE.

Sorghum Production Down in 2009

U.S. sorghum production is estimated at 383 million bushels for 2009/10, down 89 million from that for 2008/09. Planted area is forecast at 6.6 million acres, down 20 percent from the previous year, as a result of late plantings and losing acres to other crops. All of the major sorghum-producing States are forecast at or below the previous year's levels. This is the third lowest planted acreage on record. Area

harvested for grain is forecast at 5.5 million acres, down 24 percent from the previous year. The sorghum yield is estimated at 69.4 bushels per acre, up 4.4 bushels from that in the previous year. Beginning stocks for 2009/10 are estimated at 55 million bushels, up slightly from 2008/09. Total sorghum supply is projected at 438 million bushels in 2009/10, down from 525 million in 2008/09, as a result of lower production.

Barley Production Increased in 2008/09

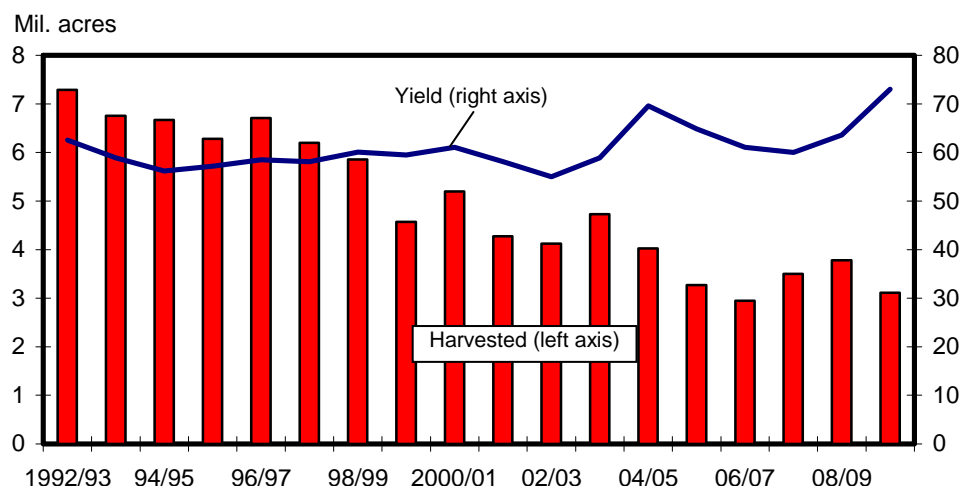
U.S. barley production was 240 million bushels in 2008/09, up from 210 million in 2007/08. Harvested area was 3.8 million acres, up 300,000 acres from the previous year as increased plantings boosted production. The average yield increased from 60 bushels per acre in 2007 to 63.6 bushels per acre in 2008.

Harvested area increased in the top two producing States, North Dakota and Idaho, by 150,000 acres and 30,000 acres, respectively. These increases in harvested acres, coupled with increased or unchanged yields in the top producing States, helped account for increased production. Production in 2008/09 was up across the Great Plains and Rocky Mountains due to increased acreage, with the most notable increases in North Dakota and Idaho. North Dakota production was up 8.4 million bushels to 86.2 million, and Idaho production was up 7.0 million bushels to 49.9 million.

Beginning barley stocks in 2008/09 were 68 million bushels, down slightly from 69 million bushels in 2007/08. Imports were 29 million bushels, unchanged from the previous year. Total barley supply was 337 million bushels in 2008/09, up from 308 million in 2007/08.

Figure 14

U.S. barley harvested acres and yields

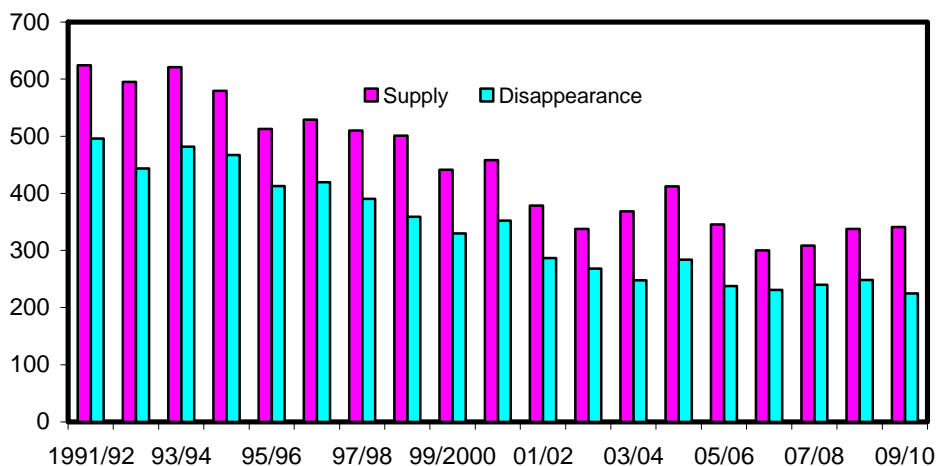


Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

Figure 15

U.S. barley total supply and disappearance

Mil. bu



Source: USDA, World Agricultural Outlook Board, WASDE.

Barley Use Increased in 2008/09

Total U.S. barley use for 2008/09 was 249 million bushels, up from 240 million bushels in 2007/08 because of a 37-million-bushel increase in feed and residual use. Exports were 13 million bushels in 2008/09, down sharply from 41 million bushels in 2007/08. This change stemmed from increased global production and higher U.S. domestic prices, which reduced export demand. FSI use was 169 million bushels in 2008/09, unchanged from that in 2007/08. Barley used for malt production is the main element of FSI, and malt production remained steady throughout 2008/09. Barley ending stocks were 89 million bushels, up 21 million from a year earlier.

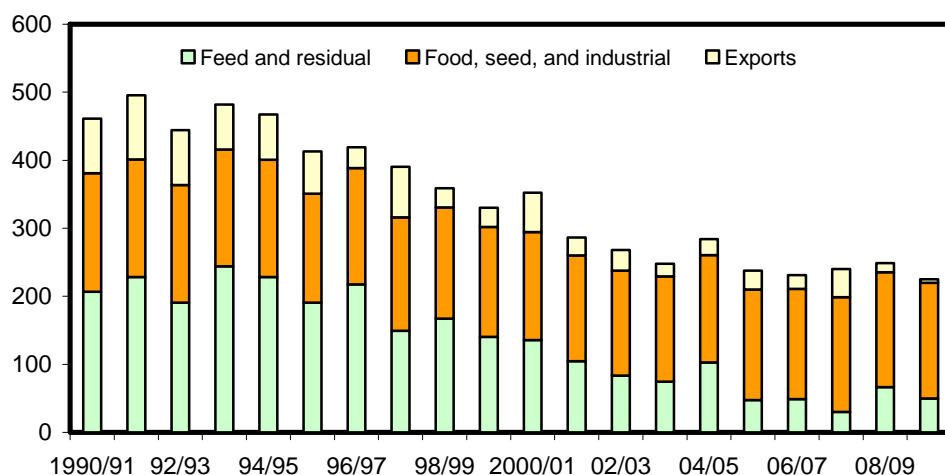
Barley Prices Rose in 2008/09

The U.S. season-average price received by producers for barley was \$5.37 per bushel in 2008/09, compared with \$4.02 per bushel in 2007/08. Much of the malting barley is grown on contract, and malting barley usually sells at a premium to feed barley. For the 2008/09 marketing year, the season-average price received for malting barley was \$5.71 per bushel, compared with \$3.87 per bushel a year earlier; the season-average price for feed barley was \$3.82 per bushel, compared with \$4.35 per bushel for the same time period a year earlier. The spread between malting and feed barley prices averaged \$1.89 per bushel in 2008/09, compared with an unusual negative \$0.48 per bushel in 2007/08. Since malting barley contracts are negotiated before the crop is planted, the low malting price observed in 2007/08 reflected prices from 2006/07, whereas the feed barley prices in 2007/08 increased as the corn price increased. The high prices seen in 2008/09 are also partially explained by barley processors bidding up contracts to keep acreage in malting barley production.

Figure 16

U.S. barley disappearance by type of use

Mil. bu

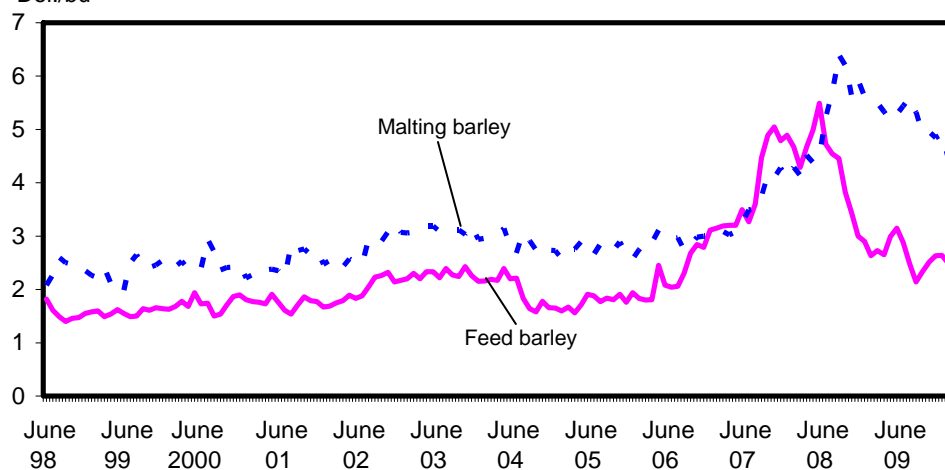


Source: USDA, World Agricultural Outlook Board, WASDE.

Figure 17

Monthly barley prices received by U.S. farmers

Dol./bu



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

Barley Production Declines in 2009/10

U.S. barley production is estimated at 227 million bushels in 2009/10, 5 percent below that in 2008/09. Average yield per acre, estimated at 73 bushels, is up 9.4 bushels from the previous year and is the highest yield on record as a result of favorable growing conditions. Producers planted 3.6 million acres for 2009, down 16 percent from 2008 as a reflection of wet conditions during planting time and reduced market incentives. This is the second lowest planted acreage on record. Area harvested for grain is estimated at 3.1 million acres in 2009/10, down 18

percent from that in 2008/09. Total supply of barley is projected at 341 million bushels, up 4 million from the previous year as the increased yield more than offset lower area.

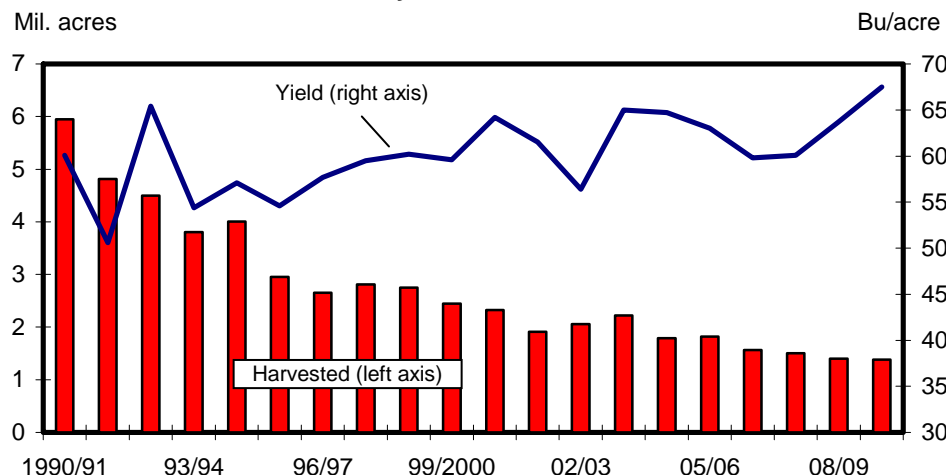
Oats Production at Record Lows in 2008/09

Total U.S. oats supply was 270 million bushels in 2008/09, up from 264 million in 2007/08. Production was a record-low 89 million bushels, down 1 percent from the previous record low a year earlier. Area planted to oats was a record low 3.2 million acres in 2008, down 14 percent from 2007. Harvested area, at 1.4 million acres, was 7 percent below the previous year. This was the smallest acreage harvested for grain on record, continuing a steady downward trend. Among all States, North Dakota had the largest decline, with area harvested for grain decreased 130,000 acres from 2007. The estimated national average yield was 63.7 bushels per acre, up 3.6 bushels from the previous year. In Washington, favorable growing conditions led to a 30-bushel-per-acre increase in yield from the previous year's 50 bushels per acre. In North Carolina and Texas, producers reported large year-to-year increases of 25 bushels and 10 bushels per acre, respectively, while in, North Dakota, average yield declined 8 bushels per acre from the previous year.

Beginning oats stocks were 67 million bushels in 2008/09, up from 51 million in 2007/08. Imports were 115 million bushels, down 8 million bushels from the previous year, despite large supplies in Canada.

Figure 18

U.S. oats harvested acres and yields

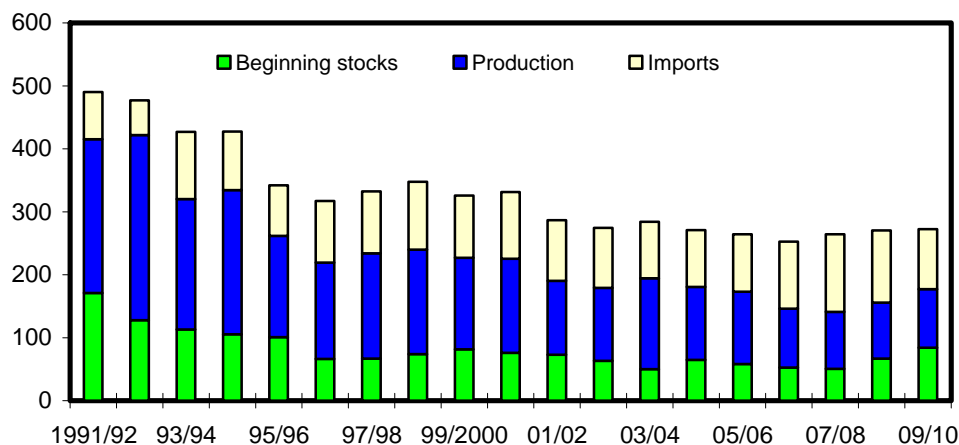


Source: USDA, National Agricultural Statistics Service, *Quick Stats*.

Figure 19

U.S. oats supply

Mil. bu

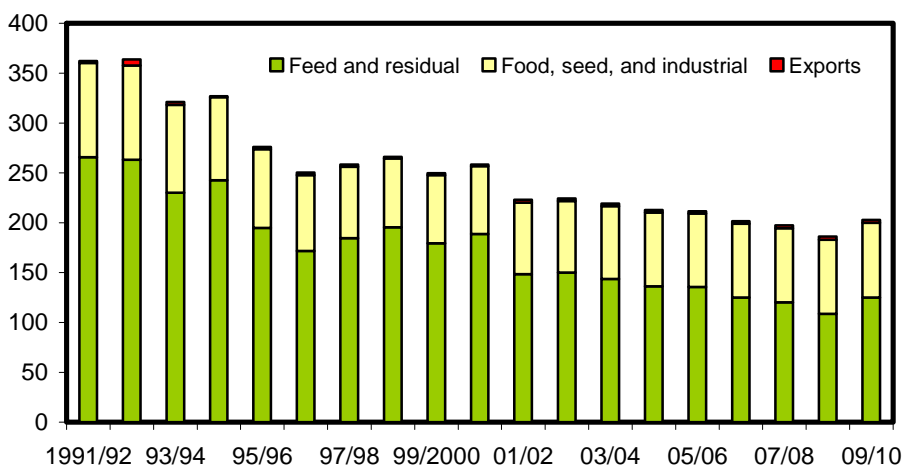


Sources: USDA, Economic Research Service, *Feed Grains Database*, and USDA, World Agricultural Outlook Board, *WASDE*.

Figure 20

Total use of oats

Mil. bu



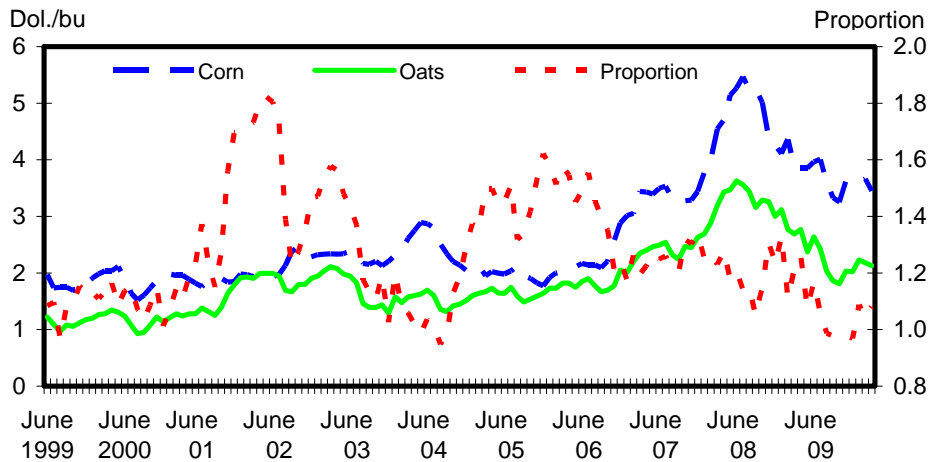
Source: USDA, World Agricultural Outlook Board, *WASDE*.

Total Oats Utilization Dropped in 2008/09

Total U.S. oats utilization was 186 million bushels in 2008/09, down 12 million bushels from that in 2007/08, reflecting a drop in feed and residual use. FSI use was 74 million bushels, unchanged from the previous year. Exports were 3 million bushels in 2008/09, also unchanged from that in 2007/08. Ending stocks were 84 million bushels, up from 67 million bushels the previous year.

Figure 21

U.S. average prices of oats and corn plus oats price as a proportion of the corn price on a per pound basis, monthly



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

Oats Prices Increased in 2008/09

The season-average oats price received by U.S. farmers was a record high at \$3.15 per bushel in 2008/09, up from \$2.63 per bushel in 2007/08. Oats prices have been pulled higher by seasonal rises in the prices for other grains, particularly corn.

Oats Production Up in 2009/10

U.S. oats production is estimated at 93 million bushels in 2009/10, up 4 million from that in 2008/09. The estimated yield is a record-high 67.5 bushels per acre, up 3.8 bushels from the previous year. Harvested area is estimated at 1.4 million acres, down slightly from the previous year. Area harvested for grain in 2009/10 is the smallest on record, continuing a steady downward trend as oats lose acres to other crops. Beginning stocks for 2009/10 are estimated at 84 million bushels, up sharply from 2008/09 and the highest since 1995. Imports are down year to year as larger 2008/09 beginning stocks and production weaken demand for Canadian oats. Total supplies are forecast at 272 million bushels for 2009/10, up slightly from 2008/09 as yield increases more than offset decreases in harvested acres.

Hay Situation and Outlook

Hay Production Down Slightly in 2008

U.S. hay production was 146 million tons in 2008, down slightly from 147 million tons in 2007. Acreage harvested in 2008 was 60.2 million acres, down from 61.0 million acres a year earlier. The average yield was 2.43 tons per acre, up 0.02 tons per acre from the previous year. Among all States, California was the largest producer of all hay in 2008 with 9.4 million tons, followed by Texas, with production of 9.2 million tons. Texas production was down sharply from 14.7 million tons in 2007 due to dry conditions. Missouri and South Dakota were the third and fourth largest hay-producing States in 2008.

Alfalfa hay production totaled 70.2 million tons in 2008, up slightly from that in 2007. Harvested area, at 21 million acres, was down slightly from the previous year. Yields averaged 3.33 tons per acre, up 0.02 tons from the previous year. California was the largest alfalfa-producing State, followed by South Dakota, Idaho, and Iowa.

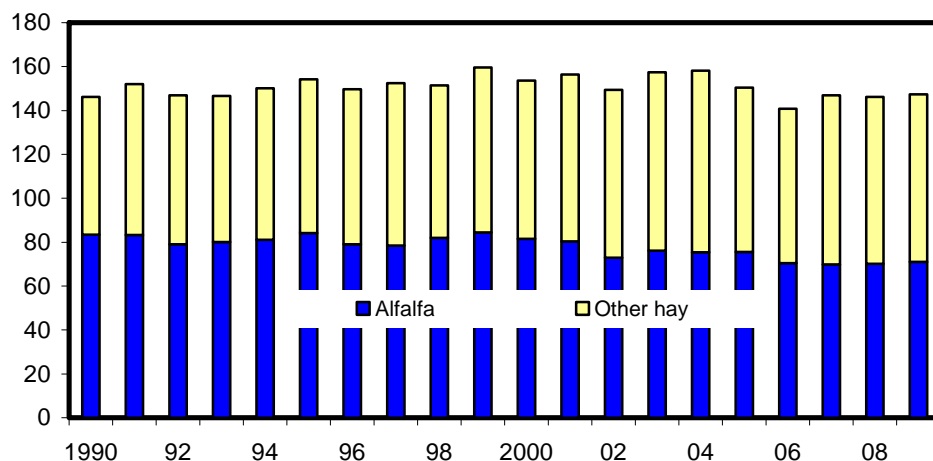
Minnesota showed the largest year-to-year increase in alfalfa harvested acres, up 250,000 acres in 2008. South Dakota and North Dakota growers harvested 200,000 and 110,000 acres more than in 2007, respectively. States with the largest decreases in harvested acres included Nebraska, down 130,000 acres, and Kansas and Montana, each down 100,000 acres. Alfalfa yields were up in nearly all Corn Belt States, Rocky Mountain States, and the eastern portions of the United States. Yields were down in the extreme Western States as well as in the northern Missouri Valley area and the extreme southern Great Plains.

U.S. growers seeded 2.70 million acres of alfalfa and alfalfa mixtures during 2008, down 5 percent from 2.83 million in 2007. The largest decrease occurred in

Figure 22

U.S. hay production

Mil. tons



Sources: USDA, National Agricultural Statistics Service, *Crop Production and Quick Stats*.

Montana, down 50,000 acres from 2007, while the largest increase was in Wisconsin, with an additional 50,000 acres. Newly seeded acres of alfalfa and alfalfa mixtures will normally be harvested for the first time in the year following planting.

Production of all other hay totaled 76.1 million tons in 2008, down 1 percent from 2007. Area for harvest, at 39.1 million acres, was down 2 percent from the previous year. The average yield is estimated at 1.95 tons per acre in 2008, up 0.02 tons from that in 2007.

Nearly all States east of the Mississippi River experienced higher yields or unchanged yields in 2008 except Louisiana, Michigan, Pennsylvania, Maine, and Vermont. The Corn Belt States also experienced year-to-year yield increases, with Indiana, Minnesota, and Wisconsin leading the way with 0.30-ton-increases. Texas yields decreased the most, with a 0.70-ton-per-acre decrease from the previous year. North Dakota followed with a decrease of 0.45 tons per acre. Yields in the Western State's were mostly unchanged in 2008, except in California and Arizona, which had increases of 0.50 and 0.40 tons per acre, respectively. Year-to-year decreases in acreage were widespread west of the Mississippi River; east of the Mississippi, half of the States had increases and half had decreases. Texas had the largest decrease, down 900,000 acres from 2007. Oklahoma followed with a 200,000-acre decrease.

U.S. corn silage production was estimated at 112 million tons in 2008, up 5 percent from 2007. The silage yield was estimated at 18.7 tons per acre, up 1.2 tons from the previous year, while area harvested for silage, at 5.97 million acres, was down 2 percent from a year earlier. Sorghum silage production was estimated at 5.65 million tons in 2008, up 8 percent from 2007. Area cut for silage was 408,000 acres, up 4 percent from the previous year. Silage yields averaged 13.8 tons per acre, up 0.4 tons per acre from 2007. Kansas, the largest producing State, had a record yield of 13.0 tons per acre. Texas followed at 15.0 tons per acre, unchanged from the previous year's record.

Stocks of all hay stored on farms totaled 103.7 million tons on December 1, 2008, down slightly from 104.1 million a year earlier. Disappearance of hay from May to December 2008 totaled 64.2 million tons, compared with 57.8 million tons for the same period in 2007.

Hay stocks on December 1, 2008, compared with the previous year, increased in most areas east of the Mississippi River and portions of the Southwest. The growing conditions were favorable in the South in 2008 in contrast to the extreme drought conditions that prevailed in the region in 2007. The Rocky Mountain and northern Great Plain States showed decreases in stocks for 2008. Stocks in Texas and Oklahoma showed the largest decreases with 37 and 25 percent, respectively.

Roughage consuming animal units (RCAU) in 2008/09 were 70.87 million, down from 71.48 million in 2007/08. Hay stocks on farms per RCAU on December 1, 2008, were 1.46 tons, unchanged from a year earlier. Silage production (corn and sorghum) per RCAU was 1.65 tons in 2008, up from 1.56 tons in 2007.

Hay Prices at Record Highs in 2008

All hay prices received by U.S. farmers during the May-April 2008/09 marketing year averaged a record \$152 per ton. The season-average farm price for all hay was \$127 per ton in the May-April 2007/08 marketing year, up from \$110 per ton in 2006/07.

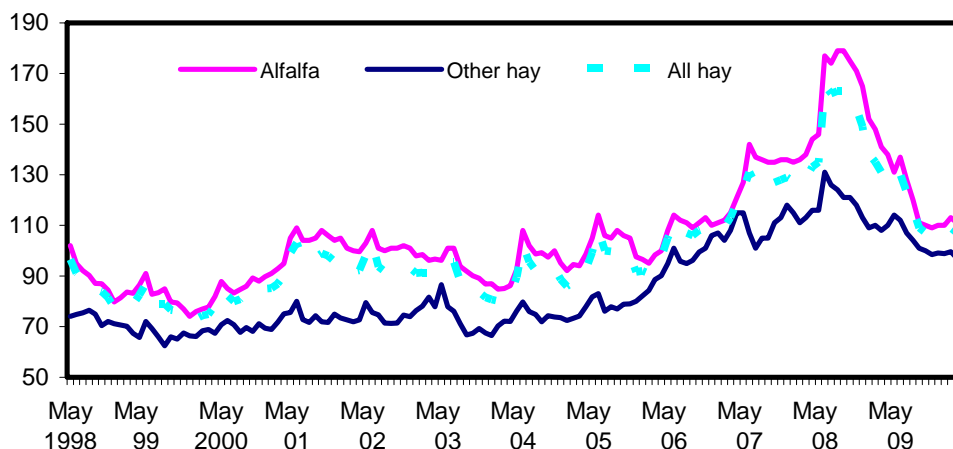
Alfalfa hay prices received by farmers averaged a record \$165 per ton during the 2008/09 marketing year. As seen with record commodity prices across the board in 2008, alfalfa producers during the month of August 2008 received a record high of \$179 per ton. The season-average alfalfa farm price was \$137 per ton in 2007/08, compared with \$113 per ton in 2006/07. Prices for alfalfa in 2009/10 are expected to be down significantly for the remainder of the 2009/10 marketing year. Milk prices are very low but are beginning to rebound; dairy producers, however, are under financial stress and will be looking for cheaper substitutes for alfalfa and other feedstuffs, which will affect the demand for alfalfa in the United States.

Hay-other-than-alfalfa had a record weighted season-average price of \$118 per ton in 2008/09; the season-average price was \$110 per ton in the 2007/08 marketing year, compared with \$102 per ton in 2006/07.

Figure 23

Hay prices received by U.S. farmers

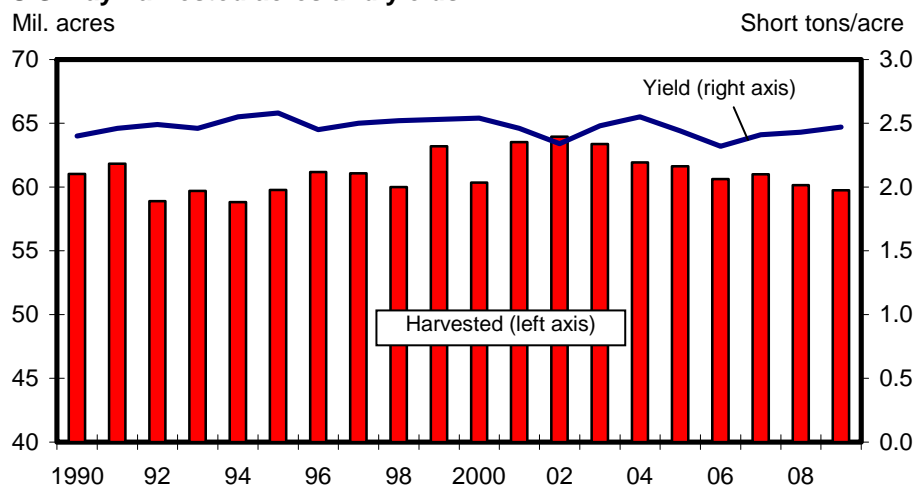
Dol./short ton



Sources: USDA, National Agricultural Statistics Service, *Crop Production and Quick Stats*.

Figure 24

U.S. hay harvested acres and yields



Sources: USDA, National Agricultural Statistics Service, *Crop Production* and *Quick Stats*.

Hay Production Up in 2009

Production of all hay is estimated at 147.44 million tons in the 2009/10 marketing year, up 1.17 million tons from 2008/09. Production of alfalfa and alfalfa mixtures is forecast at 71.03 million tons, up 1 percent from the previous year. Based on December 1 conditions, yields are estimated to average 3.35 tons per acre in 2009/10, up 0.02 tons from 2008/09. Harvested area is forecast at 21.2 million acres, up slightly from the previous year's acreage.

Other hay production is forecast at 76.4 million tons, up slightly from the previous year. Based on December 1 conditions, yields are estimated to average 1.98 tons per acre in 2009/10, up 0.03 tons from 2008/09. Harvested area, forecast at 38.5 million acres, is down 564,000 acres from 2008/09.

Feed and Residual Use

Feed and Residual Use Decreased in 2008/09

U.S. feed and residual use of the four feed grains plus wheat during the September-August 2008/09 corn marketing year was down 16 million metric tons from the 161.5 million tons used in September-August 2007/08. Corn represented 92 percent of feed and residual use in 2008/09, down 1 percentage point from 2007/08, mostly due to higher sorghum feeding.

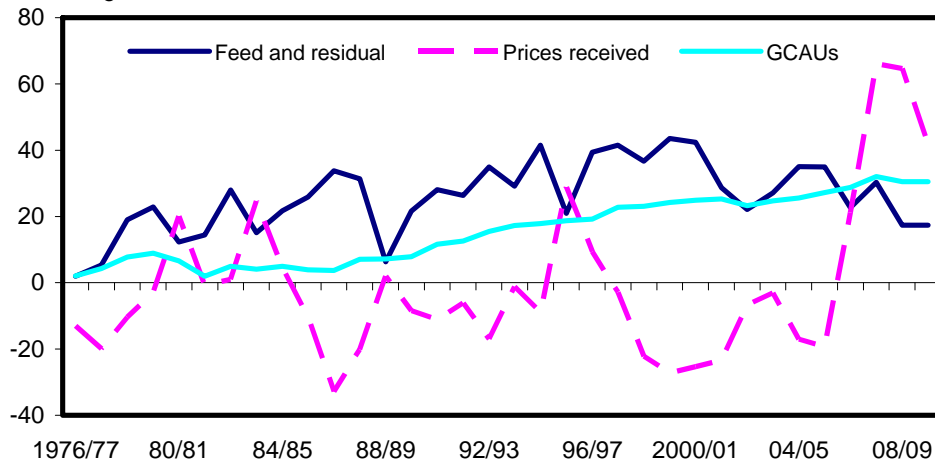
The index of grain-consuming animal units (GCAU) for 2008/09 is down 2.2 percent from 2007/08. In the index components, GCAUs for dairy cows and hogs were up year-to-year, while cattle on feed, broilers, turkeys, and layers were all down year-to-year. With feeding down more than GCAUs, grain fed per GCAU was 1.56 tons in 2008/09, compared with 1.69 tons in 2007/08.

Dairy cows on January 1, 2009, totaled 9.33 million head, up 76,000 head from January 1, 2008. Milk producers reduced feeding intensity as a short-term response to higher feed prices. Dairy replacement heifers totaled 4.41 million head at the start of 2009, down slightly from January 1, 2008. Milk production is estimated at 189.2 billion pounds in 2009, down from 190 billion in 2008. Milk producers, spurred by low milk prices, liquidated a portion of the herd in 2009. This was an industry-led effort to try to trim milk production and raise milk prices. Thus, feed use by the dairy industry is expected to have decreased slightly.

Figure 25

GCAU, prices, and feed and residual use of corn

% change from 1976/77

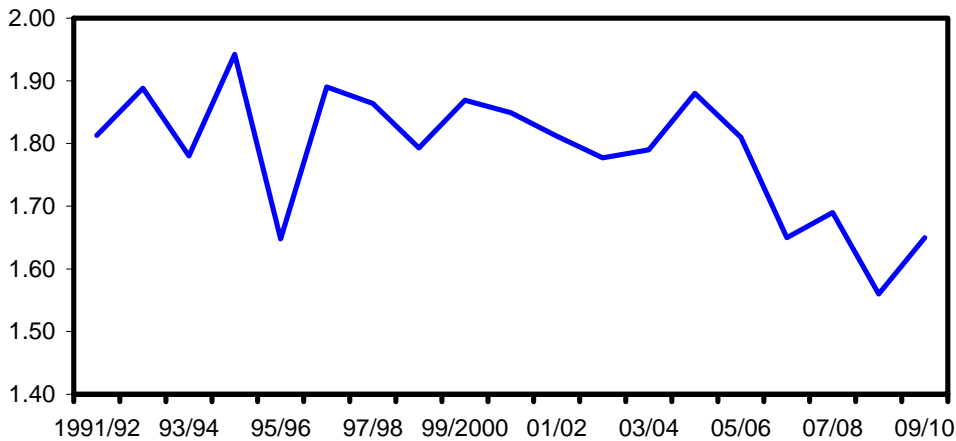


Source: USDA, World Agricultural Outlook Board, WASDE and USDA, Economic Research Service, *Feed Grains Database*.

Figure 26

U.S. feed and residual use of corn, sorghum, barley, oats, and wheat per GCAU

Tons per GCAU

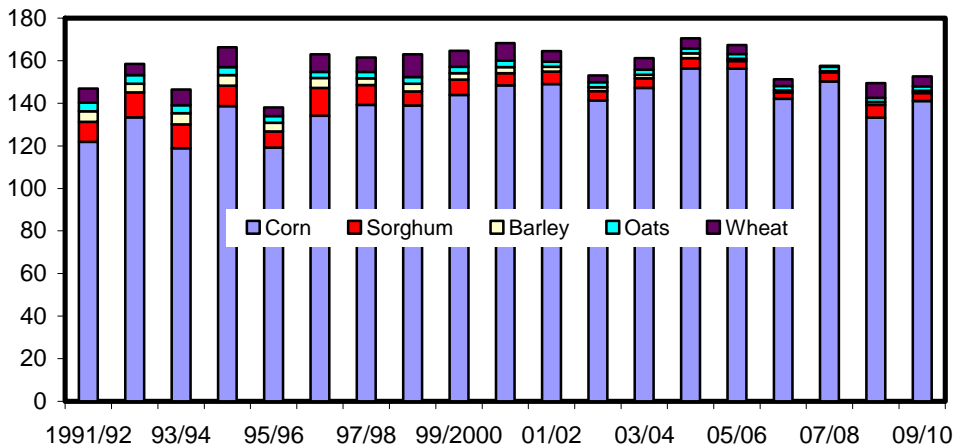


Source: USDA, Economic Research Service, *Feed Grains Database*.

Figure 27

U.S. feed and residual use

Mil. metric tons



Source: USDA, Foreign Agricultural Service, *Grain: World Markets and Trade (Grain Circular)*.

The number of cattle on feed on January 1, 2009, totaled 13.85 million head, down from 14.83 million head a year earlier. The number of feeder cattle outside of feedlots on January 1, 2009, totaled 27.52 million head, up from 27.25 million at the same time the previous year. As higher corn prices and improved forage availability lead to cattle being placed on feed at heavier weights, gains in feed needs for cattle on feed were limited. Heavier placement weights indicate less grain is needed to raise feeder cattle to market weight.

Broiler production in 2009 decreased 1.36 million pounds from the amount in 2008. Egg producers increased output 8 million dozen eggs to 7.5 billion dozen from 2008 to 2009. Although feed and energy prices were somewhat lower than those of a year earlier, egg prices have not remained consistently high enough to give producers much incentive to increase production. In 2009, turkey production is forecast at 5.6 billion pounds, down 9 percent from 2008. Overall, feed demand by the poultry sector was declining as higher grain prices and weakened demand affected the sector.

Pork production was down 1.5 percent in 2009 from the 23.3 billion pounds produced in 2008. Hog farmers, as reported in the March 1, 2009, hogs and pigs inventory survey, indicated that they intended to decrease the number of sows farrowing 3 percent in March-May 2009, as compared to that of the previous year. Additionally, farrowing intentions for June-August 2009 were down 4 percent from the previous year. The December 2008-February 2009 pig crop was down 2 percent from 2008. The decrease in pork production suggests feed needs for the pork sector were less than the previous year.

Food, Seed, and Industrial Use of Corn

Food, Seed, and Industrial Uses of Corn Remained Strong in 2008/09

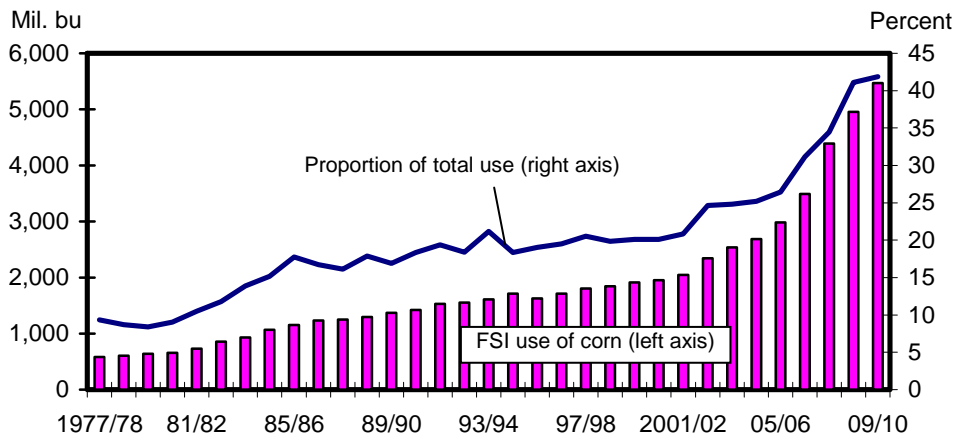
U.S. food, seed, and industrial use of corn totaled 4,953 million bushels in 2008/09, up from 4,387 million in 2007/08. FSI use represented 41 percent of total corn use, up from 34 percent in 2007/08 and 31 percent in 2006/07. Corn use in 2008/09 was down for all categories except corn used for fuel ethanol. As a result of the weaker economy, falling demand for paper products and various construction materials reduced starch use in 2008/09.

Corn used to make ethanol was 3,677 million bushels in 2008/09, up 21 percent from 2007/08. At the end of the marketing year in August 2009, ethanol production reported by the U.S. Department of Energy, Energy Information Administration (EIA) was 727,000 barrels per day, up from 645,000 barrels in September 2008. This production increase reflects new plants that have been added plus expansion of existing plant capacity in response to mandated production levels. Stocks of ethanol in August 2009, also reported by EIA, were 15.0 million barrels, down from 16.1 million from September 2008. Rising ethanol production and declining stocks during 2008/09 reflected the sharp increase in production of gasoline blends containing ethanol during the period.

Throughout 2008, financial problems for ethanol producers reduced plant capacity utilization for existing plants and delayed plant openings for those still under construction. Several ethanol plants entered into bankruptcy, idling or fully shutting down production capacity. Near the beginning of the marketing year, gasoline prices were falling from record highs seen in summer 2008. This resulted in high relative prices for ethanol when compared to those for gasoline, reducing blender incentives and slowing production. However, blender margins for using ethanol became increasingly favorable starting in late February 2009 as gasoline

Figure 28

U.S. FSI use of corn

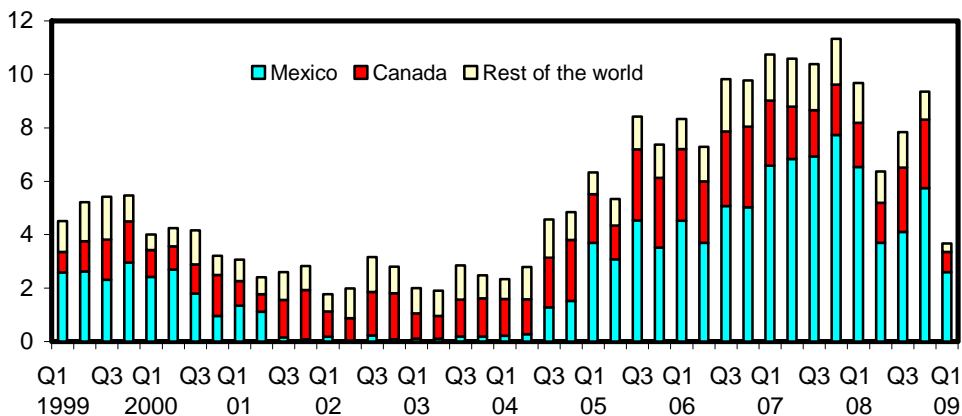


Sources: USDA, Economic Research Service, *Feed Grains Database* and USDA, World Agricultural Outlook Board, *WASDE*.

Figure 29

U.S. HFCS-55 exports per quarter in bushel equivalents

Mil. bu

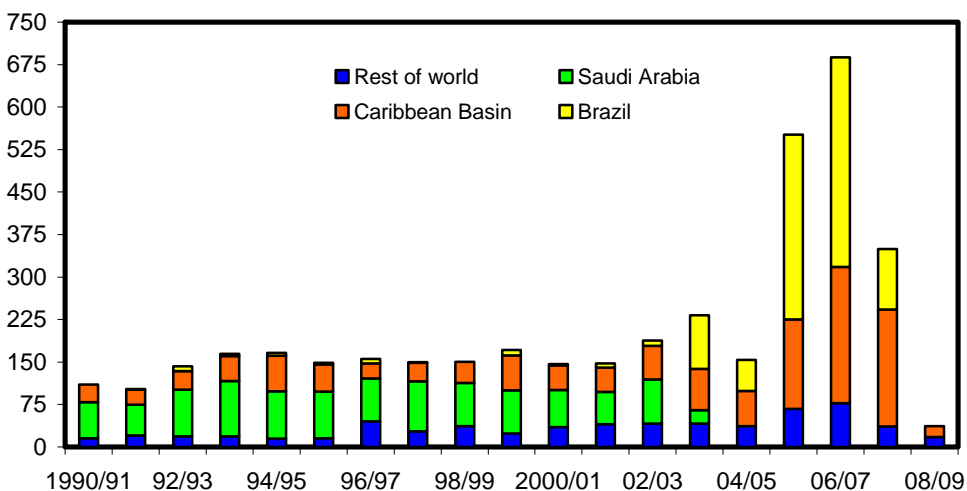


Source: U.S. Department of Commerce, Census Bureau, <http://www.usatradeonline.gov/>

Figure 30

U.S. ethyl alcohol imports

Mil. gallons



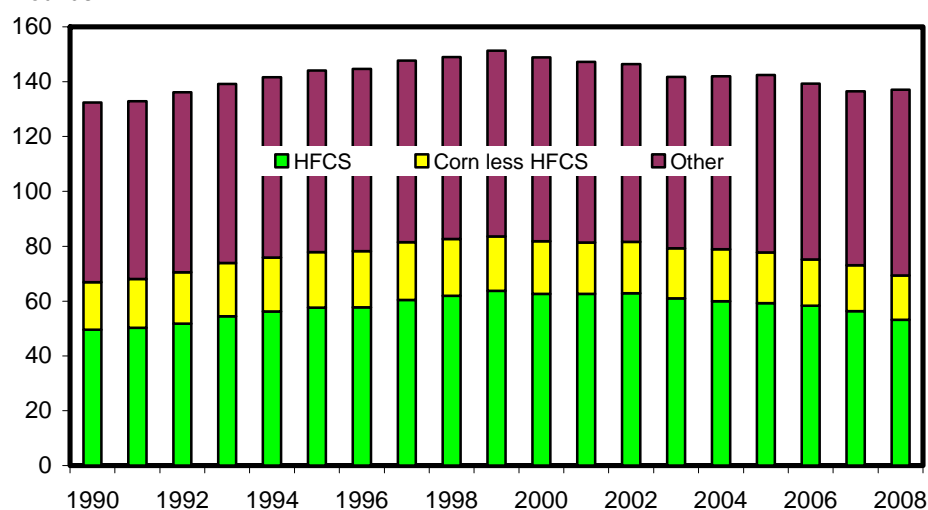
Source: U.S. Department of Commerce, Census Bureau, <http://www.usatradeonline.gov/>

prices increased relative to those for ethanol. Record monthly ethanol production was seen in July 2009, at 948 million gallons. The August 2009 monthly ethanol production came in just slightly under the July record at 947 million gallons. This supported ethanol demand as new plants began production and positive blending margins allowed existing plants to operate at levels closer to full capacity.

U.S. ethyl alcohol imports totaled 36.6 million gallons during 2008/09 for the census categories that would include ethanol, down from 349.3 million gallons during 2007/08. Imports for fuel use must pay a 54-cent-per-gallon duty unless the alcohol is produced in Caribbean Basin countries that can ship duty free to the United States up to a level equal to 7 percent of the U.S. market. Almost all of the ethanol shipped from the Caribbean Basin is ethanol from Brazil that has been further processed. As more ethanol plants have opened in the United States, the need to import ethanol has lessened, but imports could help hold down domestic prices if demand increases sharply. Ethanol imports also benefited from a duty drawback provision through September 2008. This provision allowed imported ethanol to receive a duty drawback if a “like commodity” to ethanol, or its final product, a gasoline-ethanol mixture, was exported. Jet fuel was considered a like commodity to the gasoline-ethanol mixture and was frequently exported to trigger the duty drawback. However, a provision in the Food, Conservation, and Energy Act of 2008 (the 2008 farm bill, P.L. 110-246) eliminated the duty drawback for fuels that do not contain ethanol (such as jet fuel).

Corn used for HFCS in 2008/09 was at 466 million bushels, down 5 percent from that used in 2007/08. HFCS is primarily used in soft drinks. Continued weak economic conditions reduced consumption of meals away from home, and thus restaurants sold less soft drinks. Also, increasing dietary and health concerns on the consumption of soft drinks triggered a push to eliminate soft drink vending machines in schools. Estimated corn used for HFCS exports was down 23 percent for the market year, relative to 2007/08. In 2008/09, U.S. exports of HFCS in corn equivalents to Mexico were down 29 percent from the previous year, as tighter global sugar supplies boosted U.S. sugar imports from Mexico. As a result, Mexico increased domestic HFCS production to support domestic sweetener demand with lower cost HFCS. However, HFCS exports to Canada were up 1.8 percent from the previous market year.

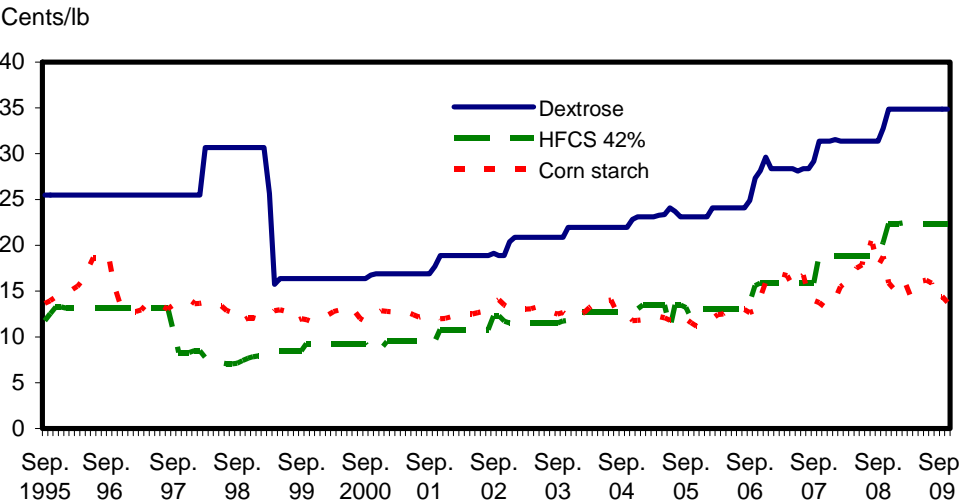
Figure 31
U.S. per capita sweetener consumption
Pounds



Source: USDA, Economic Research Service, *Sugar and Sweeteners Yearbook*.

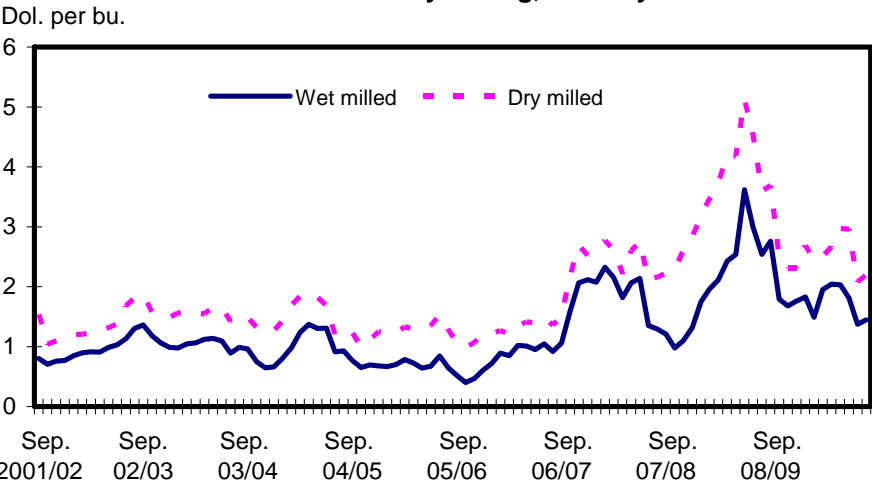
Corn used for cereals and other products was 192.1 million bushels in 2008/09, down slightly from 192.4 million in 2007/08, as demand for these products remained relatively stable. Corn used in beverage and manufacturing was 134 million bushels, down slightly from 135.4 million in 2007/08, as a result of weaker demand for industrial product manufacturing due to weak economic conditions.

Figure 32
U.S. wet mill product prices, monthly



Sources: "Milling and Baking News," Sosland Companies, and USDA, Economic Research Service, *Feed Grains Database*.

Figure 33
U.S. net corn costs for wet and dry milling, monthly



Sources: USDA, Economic Research Service calculations from various series available from USDA, Agricultural Marketing Service.

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Appendix Tables

The appendix tables are now available online at <http://www.ers.usda.gov/data/feedgrains/FeedYearbook.aspx>. They will be updated monthly as new data are added to the Feed Grains Database, <http://www.ers.usda.gov/data/feedgrains/>.

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