

## Commodity Spotlight



## Corn Market to Strengthen In 2001/02

Corn prices are expected to strengthen in 2001/02 as ending stocks decline to the lowest level since 1997/98. U.S. corn production in 2001 is expected to drop 7 percent, pulled down by lower acreage and yields. Despite higher beginning stocks, total supplies in 2001/02 will drop 4 percent from a year earlier. Meanwhile, domestic use is forecast to reach a record high, and exports are expected to rise 2 percent to the highest level since 1998/99 as global use expands. The average farm price is forecast at \$1.95-\$2.35 per bushel, up from \$1.85 in 2000/01.

Several factors are behind the reduced acreage: high cost of inputs (fertilizer prices were up sharply), low price prospects at planting, and excessive precipitation in the spring. Planted area is estimated at 76 million acres, down 584,000 acres from the March *Prospective Plantings* report and down 3.4 million from 2000.

Corn planting progressed at a near-record pace in Illinois, Indiana, Kentucky, and Ohio, but frequent precipitation hindered progress in Minnesota, Iowa, Missouri, Nebraska, South Dakota, and Wisconsin. Moisture shortages hindered germination and emergence in parts of the eastern

Corn Belt, but warm weather aided growth where moisture supplies were adequate. In mid-May, a period of wet weather over the eastern Corn Belt erased most moisture shortages, and many fields showed signs of excessive moisture. In the western Corn Belt, excessive moisture and a period of below-normal temperatures in late May hampered germination and early growth. This year's U.S. planted area is the lowest since 1995, when excessive rainfall also limited plantings.

Overall, crop and weather conditions throughout the growing season were highly variable again this year. Crop conditions deteriorated after mid-July, but rebounded somewhat near the end of the month when widespread precipitation eased localized moisture shortages in most areas of the Corn Belt. Corn yields in 2001 are forecast at 133.5 bushels per acre, down 3.6 bushels from last year's near record. Production in 2001 is forecast at 9.2 billion bushels, down from nearly 10 billion in 2000.

### **Domestic Use Forecast Record High**

Domestic use in 2001/02 is expected to total a record 7.8 billion bushels, up 35

million bushels from 2000/01, bolstered by gains in food, seed, and industrial use.

**Food, seed, and industrial uses** are projected to remain strong, up 4 percent from 2000/01 to 2,050 million bushels. Use at this level would represent 18 percent of total corn supply, up from 17 percent in the previous 2 marketing years.

**Total sweetener use** of corn is projected to drop 2 percent in 2001/02 from a year earlier as corn sweetener use continues to trend upward and appear in a wide variety of food products. In 2000/01, corn use for high fructose corn syrup (HFCS) is expected to be up 1 percent from the 539.5 million bushels used in 1999/2000. HFCS prices have been increasing and the number of soft drink specials have been reduced, slowing use. In addition, exports of HFCS in September 2000-July 2001 were down 12 percent from the same period a year earlier, partly because of higher tariffs imposed by Mexico in the ongoing dispute over U.S. sugar imports and HFCS exports. In 2001/02, corn used to make HFCS is expected to resume its long-term upward trend and rise 2 percent.

After holding nearly steady in 2000/01, corn use for glucose and dextrose (sometimes used in "nonfat" products, for example) is also expected to resume its upward trend, reaching 225 million bushels in 2001/02.

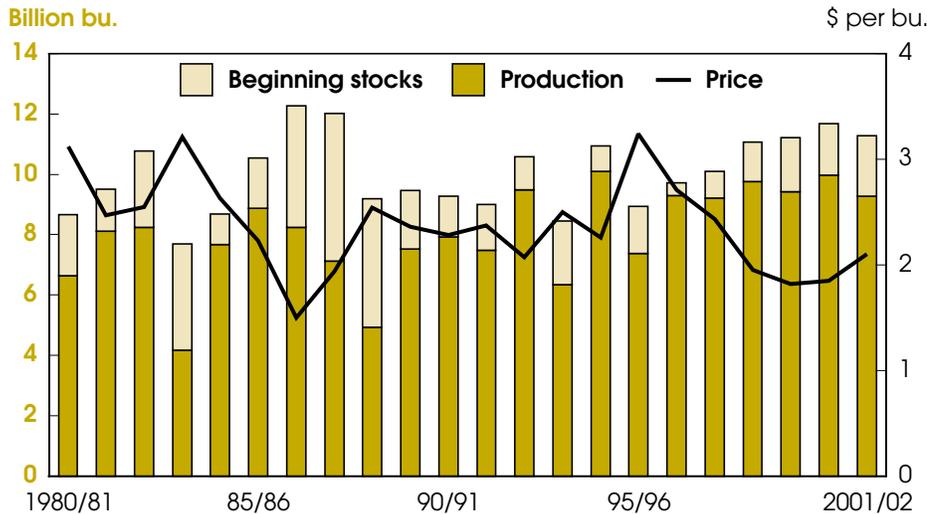
In 2001/02, **beverage, alcohol, and manufacturing use** of corn is expected to rise 1 million bushels to 131 million, mainly in conjunction with population growth. Corn used in *cereals and other food products* in 2001/02 is expected to be up 3.4 million bushels to 184 million.

Corn used to make **starch** in 2000/01 (for products such as paper and wallboard) is projected down 1 million bushels from the 251 million used in 1999/2000. With modest economic growth in 2002, corn used for starch production is projected to be up 2 percent in 2001/02.

Corn used to make **ethanol** is also rising. Ethanol use, contrary to normal seasonal declines, remained strong in the summer of 2001 because of the high prices of gasoline and of methyl tertiary butyl ether

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## U.S. Corn Prices to Edge Higher in 2001/02



U.S. season-average farm price. Season beginning September 1. 2000/01 and 2001/02 forecast.

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(MTBE). Consequently, corn used to make ethanol is expected to rise nearly 10 percent in 2000/01. Ethanol is a substitute for MTBE both as an oxygenate additive, and with an octane rating of 113, can enhance the gasoline's octane rating.

In 1999, California's governor issued an executive order to ban the use of MTBE effective January 2003 because of its adverse impact on groundwater quality (AO October 1999).

Use of ethanol in place of MTBE in California and other reformulated gasoline areas (see sidebar) would generate greatly increased demand, and plants are being built, or planned and existing ethanol plants are expanding their capacity in anticipation of this stronger demand. Several plants have announced they will increase production, and USDA has granted funds for new alcohol plants. As a result, corn use in ethanol plants will be up in 2001/02. Further increases will likely occur in 2002/03. In 2001/02, corn used for ethanol production is expected to be up 10 percent from the projected 620 million bushels used in 2000/01. Bills have been introduced in Congress that mandate ethanol use by the gasoline industry and are awaiting consideration.

**Feed and residual use** is projected down 1 percent in 2001/02 as the number of cattle on feed declines. Corn is the principal feed grain in the U.S. and accounts for 90 percent of the total feed and residual use of the four feed grains plus wheat. For 2001/02, the index of animal numbers is expected to be up 1 percent from 2000/01, with pork and poultry components up a little from a year earlier and dairy and beef down slightly.

Beef production in 2001 is projected to be down 3 percent from the 26.8 billion pounds produced in 2000. Projected beef production for 2002 is 25.2 billion pounds, down 4 percent from 2001. These projections suggest weaker feed needs by the beef-feeding industry in 2002 than in 2001.

In 2002, pork production is expected to increase 4 percent from the projected 2001 level. Given these expectations, feed needs by the pork industry will continue strong.

Feed use by the poultry industry is also expected to remain strong. Projected broiler production is expected to rise 2 percent in 2002, while turkey production is projected to be up 3 percent from 2001.

In 2002, milk production is expected to total 170 billion pounds, up 3 percent from 2001. With strengthening milk prices and relatively low corn prices, producers are expected to maintain heavy grain feeding and keep corn demand strong.

**Global Corn Stocks to Shrink**

With lower U.S. production, world corn output in 2001/02 is expected to decline to 579 million tons, down 7 million from a year earlier and 28 million less than the 1999/2000 record. However, foreign production is expected to increase 11 million tons in 2001/02. Eastern Europe is recovering from drought (up 10 million tons); growing conditions in the European Union (EU) have been favorable (up 2 million tons to record levels); and expanded area and a rebound in yields will raise Sub-Saharan Africa output (up 3 million tons).

Partly offsetting these increases is a drop of nearly 5 million tons in Latin America, where Brazil's exchange rate favors increased soybean area over corn. Also, Brazil in 2001/02 is not expected to match the previous year's record yield.

The generally weak global economy is expected to limit growth in world corn use to 2 percent in 2001/02. This modest growth is slightly higher than world population growth and is a rebound from declining use the previous year. Most regions are expected to experience slow growth, with increased production boosting use somewhat in Eastern Europe and the EU. However, corn consumption in several of the largest importers is expected to stagnate or decline. In Japan, feed use is gradually declining as meat production is reduced and meat imports increase. Meat imports and increased feed wheat imports are expected to reduce corn feeding in South Korea. In Taiwan, corn use is forecast the same as a year earlier. In Iran, corn use is expected to decline because of economic woes and a second year of drought-reduced production.

Global corn trade in 2001/02 is expected to decline slightly to over 73 million tons. Sluggish demand in Japan and South Korea will more than offset stronger growth in markets like Mexico. Increased shipments of corn and feed wheat from Black Sea ports will partly offset reduced

## Ethanol/MTBE Update

Under the Clean Air Act Amendments of 1990, Federal law requires a 2-percent minimum level of oxygen in reformulated gasoline (RFG) sold in "nonattainment" areas (generally metro areas where ozone levels exceed Federal standards). RFG is gasoline that is blended such that it significantly reduces volatile organic compounds and toxic emissions relative to conventional gasolines.

Methyl tertiary butyl ether (MTBE) competes with ethanol use in RFG and winter-oxygenated gasoline. Both ethanol and MTBE add oxygen to the gasoline and can be used to enhance the octane rating.

In April 1999, California's state government requested a waiver from the 2-percent oxygenate requirement in order to reduce costs associated with the statewide ban of MTBE, which was issued as an executive order by California's governor because of its link to water contamination. The Environmental Protection Agency (EPA) denied the request in July 2001, and California has filed suit in Federal court to reverse the EPA ruling. The governor could also reverse the ban or change the starting time, since he simply issued an executive order and is not legally bound to ban MTBE. In a separate action, California's congressional delegation attempted and failed to get a bill passed through Congress that would exempt the state from the oxygenate requirement.

Reformulated gasoline using ethanol as the oxygenate is generally more expensive because the gasoline used to blend with ethanol must be refined to have a low RVP (Reid vapor pressure, a measure of ease of evaporation). However, the price of ethanol is generally about the same or below the price of MTBE, after subtracting the blender tax credit of \$0.53 per gallon for ethanol.

A second factor affecting the price of gasoline using ethanol is the proportion of oxygenate required. MTBE is blended at 11 percent to get 2 percent oxygen, while alcohol (ethanol) requires only 5-7 percent because of the higher oxygen content. (Ethanol has twice the oxygen by weight, so one gallon of ethanol will replace 2 gallons of MTBE.) California tends to have a very tight supply/demand balance for gasoline. A switch from MTBE to ethanol would likely cut gasoline supplies about 6 percent, as the proportion of gas in the RFG-

with-ethanol mix has to be higher. Gasoline prices would climb as short supplies increased the need for crude oil.

More than 12 states are trying to ban MTBE by 2004, but California is the largest gasoline user and will generate the most ethanol demand. Also, RFG is not required in summer for most of the other states. For example, Kansas and Maine are not required to use RFG during the summer, so if MTBE is used, it is not required for oxygen.

Several federal government programs promote ethanol production.

- The blender credit of 53 cents per gallon provides income tax credits for ethanol produced from renewable sources. This credit is now set to expire in 2007.
- Federal grants are available to help build ethanol plants, through USDA's Value-Added Agricultural Product Market Development Grant program. In June 2001, USDA announced approval of \$2.4 million in grants to six firms (cooperatives and companies).
- USDA's Commodity Credit Corporation funds the Bioenergy Program (up to \$150 million in fiscal 2002), which makes payments to bioenergy companies that increase their purchases of corn, soybeans, and other commodities to expand production of ethanol, biodiesel, or other biofuels.
- USDA has sold surplus sugar to some ethanol producers in order to boost ethanol production.
- The U.S. Department of Energy has also provided grants for producing ethanol from biomass.

Current ethanol production capacity is 1.95 billion gallons per year. In July, the Energy Information Administration reported daily production of 4.7 million gallons. The best estimate is that by the end of 2002, ethanol capacity will increase to 2.5 billion gallon per year. Most of the increase in ethanol production will be from existing plants or plants already under construction, although other plants are in the planning stage.

corn exports by China and Argentina. U.S. market share is expected to increase, but only modestly.

The combination of reduced U.S. production, increased global use, and reduced world beginning stocks is expected to drop global corn stocks by nearly 37 million tons, the largest decline since 1988/89. Despite sharply lower prospec-

tive global ending stocks, several developments this marketing year will limit gains in corn prices. First, drawing on large stocks, China is expected to continue to export corn early in the marketing year, despite a smaller crop. Second, Eastern Europe is expected to more than triple corn exports because of a larger crop. Third, Eastern Europe and the former Soviet Union will increase feed wheat

exports in 2001/02. Finally, given relatively large U.S. stocks, there is little reason to expect that stronger use will drive up prices. **AO**

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