

## Commodity Spotlight



Jack Harrison

## Corn Output Stable, Demand Prospects Strong

The 1997 corn harvest is heading into high gear, with the crop size pegged close to last year's but in a dramatically different market setting. Last year at this time, corn supplies were virtually exhausted across most of the country, and users were paying hefty premiums to procure the first new-crop corn coming out of the southern states. In contrast, the market this fall is relatively calm, with supplies more abundant and prices fairly stable. Supply concerns are beginning to fade, and attention in the months ahead will increasingly focus on demand developments.

Over the course of the 1996/97 marketing year, which concluded at the end of August, a large U.S. corn crop eased the extremely tight domestic supply situation that had pushed prices to record highs, and large foreign crops provided additional relief. The limelight shifted largely to the soybean market, where strong demand and tight supplies, as with corn in the previous year, boosted prices.

Very strong soybean prices relative to corn presented tremendous incentives this

past spring to plant soybeans—the principal crop competing with corn—and farmers responded by raising soybean acreage 10 percent. Despite this strong competition, corn acreage inched up from the year before to the highest level since 1985, setting the stage for a good 1997 crop.

With much larger carryin stocks, corn supplies in 1997/98 are expected to increase 5 percent. Corn production is forecast at 9.268 billion bushels, based on crop conditions as of September 1. This is down fractionally from 1996 but, if realized, would be the fourth-largest crop on record. Because of strong prospective demand and yields slightly below trend, the 1997/98 supply outlook is relatively tight. Solid gains are expected in domestic use and exports, and ending stocks are projected to shrink, providing underlying price support.

### *Corn Production More Stable This Year*

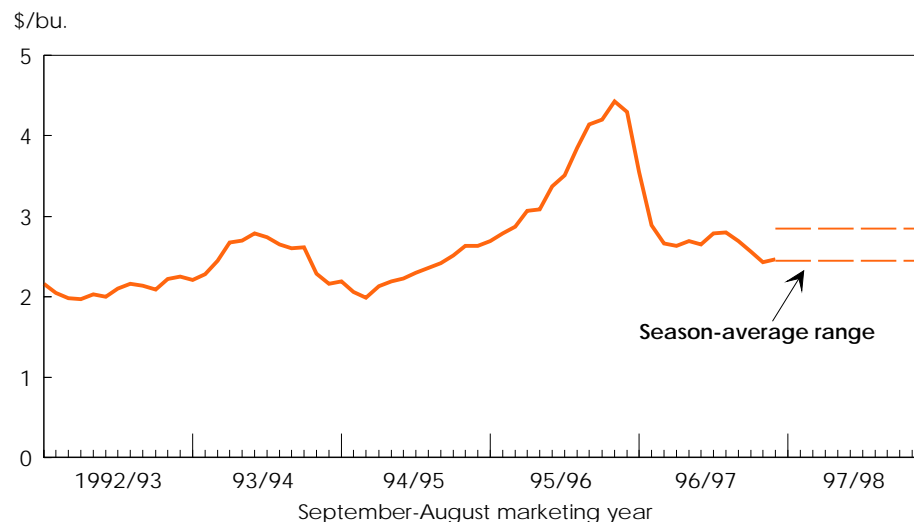
Farmers planted more than 80.2 million acres of corn this spring, up more than 700,000 acres from the previous year. The sharp gains of 1996, when corn plantings rose more than 8 million acres, were sustained on a national level, although with small shifts in the state pattern. Corn acreage outside the main Corn Belt in the

southern and Delta states slipped a bit from the strong gains of 1996 but remains comparatively large.

The large acreage partly reflects the impact of the 1996 Farm Act, which eliminated annual set-aside programs and enhanced farmers' ability to respond to market signals. The effects are quite dramatic for combined corn and soybean plantings, which reached 151.1 million acres this year, the highest since 1982 when combined plantings totaled 152.7 million, and compared with an average of 136.3 million for 1991-95.

The average corn yield is forecast at 125.2 bushels per acre, compared with the long-term trend of about 128 bushels and just below the 1996 yield of 127.1 bushels. The 1997 crop got off to a very promising start, with early plantings that are typically associated with good yield potential. Crop conditions were very favorable through June during the early stages of the crop. At that point, most traders optimistically expected a bumper crop of 10 billion bushels or more that would challenge the record high. Futures prices sank steadily, effectively taking out most of the risk premium typically attached to prices early in the summer and low prices carried over into cash markets.

### Corn Price More Stable Following 1995/96 Spike



1997/98 forecast.

Economic Research Service, USDA

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### Reduced Foreign Production Boosts U.S. Export Prospects

U.S. corn export prospects in 1997/98 are improved because of lower expected production in several key competing exporting countries, especially Argentina and China. U.S. coarse grain exports are forecast at nearly 58 million tons, with the U.S. global market share rebounding to about 63 percent. U.S. exports of corn in 1997/98 are forecast at 51.5 million tons, up 13 percent from a year earlier. Corn supplies are forecast up 5 percent, mostly because of increased carry-over stocks, leaving competitively priced U.S. corn readily available for export.

World coarse grain production in 1997/98 is forecast at 882 million tons, down 2 percent from a year earlier, but larger carryin stocks have left world supplies unchanged. As a result, coarse grain prices are expected to be generally stable.

World coarse grain trade in 1997/98 is expected to exceed 91 million tons, virtually unchanged from the previous year. Most major importers are expected to maintain or increase coarse grain purchases, with the exception of Taiwan—where foot-and-mouth disease problems in the livestock sector are expected to reduce imports.

China's 1997/98 corn production has been reduced by drought and high temperatures in many major growing areas. China is forecast to produce 110 million tons of corn, nearly 14 percent less than a year ago. Because China is the world's second-largest corn producer, a drop of this magnitude can dominate the year-to-year change in world production.

China plays a key role in world corn markets as both exporter and importer. For example, in 1993/94 China exported nearly 12 million tons of corn, but imported 4 million the next year. In 1996/97, China produced a bin-buster corn crop of 127 million tons, boosted exports, and built huge stocks.

China's corn supplies in 1997/98 are projected at 151 million tons, down from last year but higher than any other year. Despite reduced production, China has continued to export old-crop stocks in 1997/98 to clear excess supplies in north

China. However, corn exports are expected to fall to 40 percent of last year's level.

Argentina and South Africa, normally major corn exporters, are expected to have reduced export supplies in 1997/98. Trend yields are assumed at this time, but production prospects are down due to reduced acreage.

With higher coarse grain production and supplies, the European Union and Eastern Europe are the only U.S. competitors expected to increase exports in 1997/98. In addition, heavy rain during wheat harvests in some regions from the United Kingdom to the Ukraine will boost the amount of wheat in Europe that is not of milling quality and may be fed to livestock. However, it is unclear how much will be exported, consumed internally, or stocked.

The forecast of increased U.S. corn exports in 1997/98 is based on supply-and-demand fundamentals, not on the pace of preseason sales. At the start of the marketing year, on September 4, according to *U.S. Export Sales*, outstanding corn sales were only 7.7 million tons, about half the level of a year ago, when sales were unusually high.

Contributing to the slower start of corn sales is more early-season competition and less concern on the part of importers about supply availability. Last summer, U.S. corn supplies were critically tight because of the short 1995 crop. Corn prices were high, and importers were worried that not enough corn would be available, so they purchased more than usual in advance. It is more reasonable to compare this year's early sales to the 1990-95 average of 7.5 million than to last year's exceptional sales.

Moreover, China and Argentina have been marketing old-crop supplies this summer, cutting into demand for U.S. corn. This competition is expected to wane as old-crop supplies are used up, and U.S. export sales are expected to increase.

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However, by mid-July, just prior to the critical reproductive stage (pollination), conditions began to deteriorate, especially in Illinois, the second-largest producing state. Corn prices began to rebound as a weather market developed, like in many other years, with traders skittishly reacting to changes in weather forecasts as well as actual events. Nationally, crop conditions worsened through most of the summer before beginning to stabilize in late August.

Over the past several years, U.S. corn production has been characterized by sharp fluctuations. In the last decade (1987-96),

the annual swing in corn production has averaged more than 2 billion bushels per year, split equally between increases or declines. Extreme weather patterns such as excessive moisture or drought were common, with a few seasons such as 1994 when conditions were near-perfect. Despite a strong underlying upward trend in yields, reflecting gains from genetic improvements and better management, there is very strong annual variability around that trend.

This year's crop stands out because output will be so close to the previous year's, and this stability is contributing to the rel-

ative calm market atmosphere this fall. The explanation for the recent stability lies largely in a break over the past 2 years from weather extremes.

#### ***Domestic Use Pegged At Record High for 1997/98***

Domestic demand for corn is expected to be strong over the next year, with use projected at 7.3 billion bushels, about 100 million bushels above the 1994/95 record and topping 1996/97 by more than 300 million.

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Feed and residual use of corn is projected to increase 5 percent to 5.55 billion bushels. Production and supplies of other feed grains will be down in 1997/98, particularly sorghum, reinforcing strong demand for corn. Strong meat exports will again support increases in meat production and feed demand. Hogs and broilers are expected to account for most growth. The cattle sector is moving toward the end of the liquidation phase caused by high feed and forage costs in late 1995 and 1996.

Food, seed, and industrial (FSI) use of corn is also projected to rise 5 percent in 1997/98 to 1.78 billion bushels. Continued recovery in corn used for fuel alcohol (ethanol) will lead growth. Although corn for ethanol use is forecast to increase 11 percent to 485 million bushels, it will not rebound to the peak level of 533 million reached in 1994/95.

Some new ethanol plants have opened in recent months, but a few plants were permanently shut during 1995/96, when industry margins were sharply squeezed. While the outlook for corn prices is fairly stable, ethanol industry margins are also dependent on product prices largely influenced by the petroleum market, along with returns generated by sales of co-products such as corn oil and corn gluten feed. Prospects for beverage alcohol have been improving, reflecting a dynamic export market. Production of beverage alcohol from corn has increased recently as some ethanol producers have added equipment in order to diversify their production mix.

Other segments of food and industrial use are forecast to continue growth in 1997/98. Use for sweeteners accounts for the largest share of FSI use. Corn demand for these other uses tends to be inelastic, and expansion has been relatively steady over the past several years, except for a small downturn in corn used for starch in 1995/96.

U.S. corn exports are projected to increase nearly 13 percent in 1997/98 because of increases in world corn imports and gains in the U.S. market share as competitor shipments decline. Exports are likely to increase, but the magnitude of the gain is subject to some doubt, due mainly to uncertainty about China's role. Despite a

major drought that overlapped important corn producing areas, China has continued to sell corn in recent weeks, mainly in neighboring Asian markets, reflecting huge stockpiles.

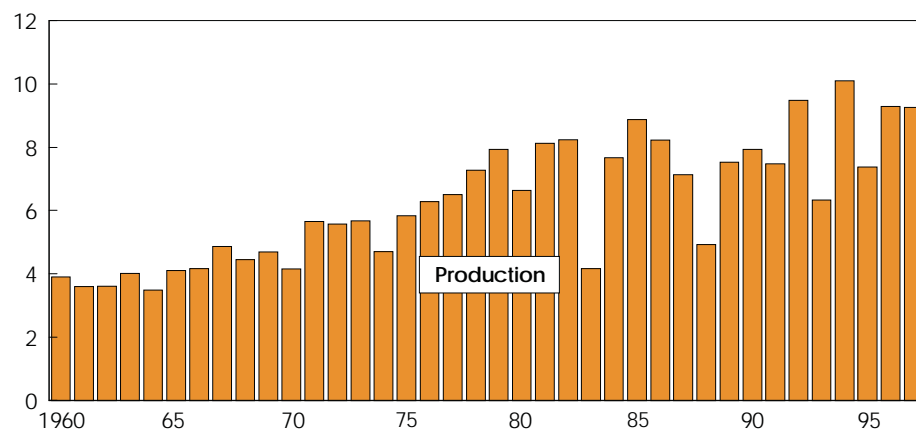
Importers have shown little urgency to buy from the U.S., not only because of exports from China but also in anticipation of a relatively good U.S. harvest. Buyers typically try to hit harvest-time lows in prices. Corn prices generally strengthen seasonally after November, but they could increase considerably depending on whether or not China curtails export sales.

Although corn supply is projected to be the highest in 3 years, strong use is expected to keep stocks relatively low. Ending stocks in 1995/96 fell to the lowest since the 1940's, at 426 million bushels, and have recovered only partially. In 1997/98, ending stocks are projected at 864 million bushels, down 77 million from the previous year, and the third straight year below 1 billion.

Given increasing use, this provides only a small cushion against contingencies. The ratio of stocks to use is projected at 9.2 percent in 1997/98, down from 10.7 forecast in 1996/97, but up from the recent low of 5 percent in 1995/96.

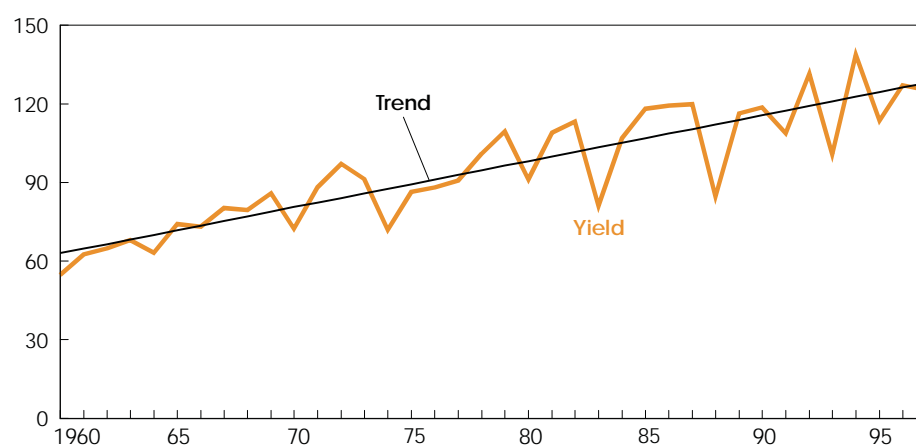
### Corn Output Reflects Changes in Yields

Billion bu.



1997 forecast as of September 12.

Bu./acre



1997 forecast as of September 1.

Economic Research Service, USDA

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### Caution on El Niño

USDA is carefully monitoring the current El Niño weather phenomenon—a periodic, large-scale warming of the tropical Pacific Ocean. When an El Niño develops, it can disrupt weather patterns across the globe due to the significant ocean-atmosphere interaction.

Despite indications that the current El Niño is very strong, the implications for agricultural production are far from certain. The timing of the onset, severity, and duration of the event all contribute to its impact on agriculture. In forecasting crop production, USDA incorporates the impact of weather to date into its assessments. Given the uncertainty of weather, the forecasts assume normal weather in the period ahead. However, USDA carefully monitors weather events such as the El Niño phenomenon as they unfold.

There are some general tendencies associated with El Niño, but the intensity and timing of the effects are not perfectly predictable. The case of Australia is illustrative. Australia typically experiences severe drought in an El Niño event, cutting output of its wheat and barley crops, which are mainly harvested in the southeast in November and December. Although Australian authorities reduced production forecasts substantially this spring, anticipating heavy drought damage, rains in eastern crop areas in recent weeks were substantial enough to improve crop prospects.

So far, there are clear indications of reduced output in Southeast Asia, especially in Indonesia. Some analysts interpret a widespread drought in China over the last several months as evidence of El Niño's impact, but correlations are weak. There has also been much concern about India, where crops are also historically subject to El Niño-related drought damage, but rainfall this past summer has been adequate to forestall serious crop reductions.

For the corn market, the most critical effects are generally felt in southern Africa, where South Africa, Zimbabwe, and other countries often experience intense drought during El Niño. Corn is the region's staple food, and authorities in the region are preparing for the worst. Planting of corn is just getting underway in these regions at this time. Crop output in southern Africa will not be known with certainty until early 1998.

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Although shortages and soaring prices were very disruptive for many users in 1995/96, it is not clear if many will try to hold larger inventories for their operations in the future. As in other industries, "just-in-time" deliveries can hold down costs. Most corn processing plants are located in the heart of the Corn Belt, especially in Iowa and Illinois, facilitating this approach.

However, most of the growth in livestock and poultry production in the last decade has been outside the Corn Belt. The broiler industry is concentrated in corn deficit areas of the South and Southeast. The hog industry has expanded dramatically in North Carolina, and recently has started to grow in some western states that also produce relatively small quantities of corn. In each case, operations are critically dependent on regular shipments from

the Corn Belt, making them vulnerable to any transportation delays. It is unclear whether operations outside the Corn Belt will try to rely on just-in-time deliveries or to hold inventories.

### Corn Prices To Show Little Change

The season-average price of corn received by farmers is forecast at \$2.45-\$2.85 per bushel in 1997/98. The midpoint of the forecast is slightly below the 1996/97 price of \$2.70, despite a tighter outlook. This is because the 1996/97 average was pulled up by very high prices at the onset of the marketing year, before supplies were replenished. While down from the 1995/96 record of \$3.24 per bushel, corn prices will still be relatively strong compared with the \$2.30 average of the 1990/91-1994/95 period.

Have we moved to a higher price plateau? Growers are hopeful of a repeat of the experience of the early 1970's, when corn prices advanced from a range under \$1.50 per bushel to over \$2 as world grain demand took off. Although the 1997/98 forecast is again above recent averages, it is probably unrealistic to think that prices could not fall back substantially. More favorable weather this year could have brought the price down significantly. For example, early this summer—when many expected a corn crop in excess of 10 billion bushels—new-crop elevator bids in many parts of the Corn Belt were skidding toward \$2 per bushel. Lacking program alternatives such as set-aside, corn acreage is unlikely to shrink much in the next few years.

Regardless of the final price outcome this year, corn sector income will be bolstered by production flexibility contract payments authorized by the 1996 Farm Act, which will total \$3.4 billion in fiscal 1997. These payments are intended to ease the transition to the new environment that excludes most of the government "safety net" programs. Given the nearly full participation by corn growers, the payment rate will work out to about 49 cents per bushel for eligible 1997 production, the peak year of support. Payments will decline over the remaining 5-year period.

Even without the transition payments, market-generated strength in corn prices has minimized adjustments to the new farm legislation. New approaches to risk management have attracted increasing attention in the last 2 years, but as yet there is little conclusive evidence of any major change in farmers' marketing behavior.

The fact that many corn farmers missed the record market highs of 1995/96 is likely to influence corn marketings in 1997/98. Nearly two-thirds of the 1995/96 crop was marketed by the end of January, mostly under \$3 per bushel, before huge price spikes pushed farm prices well above \$4 in the spring. As a result, many farmers may be more inclined to delay a larger portion of sales to later in the marketing year, despite added storage costs, to avoid missing out on potential price rallies.

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