

## Commodity Spotlight



# U.S. Farmers to Expand Plantings Of Soybeans, Corn, & Cotton In 2000

On the eve of planting decisions for major field crops in 2000, U.S. farmers faced mixed price signals—prices increased about 4 percent for corn, 8 percent for soybeans, and 6 percent for cotton from a year earlier, but showed a decline of about 11 percent for winter wheat and 5 percent for spring wheat. Producers' net response was a nearly 1-million-acre increase in planting intentions from last year's planted acreage.

Planting intentions for the eight major U.S. field crops (corn, soybeans, wheat, barley, sorghum, oats, cotton, and rice) total 252.6 million acres in 2000, up 0.4 percent from last year's planted area and down 3.2 percent from the most recent peak in 1996. Farmers intend to plant a record 75 million acres of soybeans (1 percent higher than in 1999 and the ninth straight increase), expand corn plantings 1 percent to 78 million, and plant the largest cotton area (15.6 million acres, up 5 percent) since 1995.

Trend yields, along with planting intentions, suggest a corn crop slightly larger than last year and a very large U.S. soy-

bean crop in 2000. In contrast, farmers intend to plant the smallest wheat acreage since 1973—down 2 percent from last year—and if yields equal the average for the last 3 years, wheat production will decline.

Farmers' planting intentions continue to show the effects of the 1996 Farm Act, which allows program crop producers more flexibility to respond to market signals by changing their enterprise mix. For example, with producers' participation in farm programs no longer tied to base acreage planting requirements and acreage reduction restrictions, farmers are free to pursue soybeans' relatively higher net returns, and soybean plantings grew by more than 10 million acres between 1996 and 2000 (assuming 2000 intentions are realized).

Soybean acreage has expanded in the wheat-dominated Central and Northern Plains. Some wheat acreage in the Central and Northern Plains was also switched to minor oilseeds, such as sunflowers and canola. Expansion in minor oilseeds was fairly dramatic in 1997 and 1998, but except for canola, has since tapered off.

For example, sunflower plantings in North Dakota increased by about 70 percent—from 1.2 million acres in 1996 to 2 million in 1998—declining to 1.7 million in 1999. Plantings are expected down again this year to 1.4 million acres as sunflower acreage makes way for the higher-net-return canola. As a result, farmers intend to plant a record canola crop (1.5 million acres) this year.

**Soybeans.** Intended soybean acreage for 2000 is 74.9 million acres—1 percent above last year's planted acreage, in part because of expected price gains and marketing loan benefits for soybeans relative to other crops. Soybean acreage is expected to remain unchanged in Iowa and decline slightly in Illinois, the two leading soybean producing states.

The increase in intended soybean plantings in the Central and Northern Plains outpaces that in the Corn Belt this year. Soybean plantings in the Central and Northern Plains are expected up 1.2 million acres—0.5 million in South Dakota, 0.4 million in North Dakota, and 0.3 million in Nebraska—as wheat acreage is switched to soybeans. In the Corn Belt, the 0.5-million-acre expansion of soybean plantings is concentrated in Minnesota (0.3 million), Wisconsin (0.1 million), and Indiana (0.1 million).

These estimates are based on farmer surveys conducted during the first 2 weeks of March. USDA's *Prospective Plantings* report for 2000, released on March 31, provides the first indication of farmers' spring planting intentions for major field crops. With adverse weather or significant changes in crop prices, actual plantings could vary from intentions. For example, persistent wet conditions in spring could delay corn plantings and cause a switch from corn to soybeans. USDA will release acreage estimates in its June 30 *Acreage* report, after crops have been planted or when planting intentions are more definite.

The report will be available at <http://usda.mannlib.cornell.edu/reports/nassr/field/pcp-bba/>

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In contrast, farmers in the Delta and Southeast (especially Louisiana and Mississippi) intend to decrease their plantings of soybeans for the third year after a spike in 1997. Poor soybean yields in 1998 and 1999 have helped to make cotton a more attractive alternative in these areas this year.

Provisions of the marketing loan program make soybean production attractive to many producers across the U.S. because of the relatively high loan rate and the potential for marketing loan gains (repayment of government loans below the original loan rate), and loan deficiency payments (LDP's) that are expected to provide a higher per-bushel net return than for competing commodities when the market price falls below the commodity loan rate. Other factors in the record expansion of soybean acreage since 1996 include: 1) planting flexibility under the 1996 farm legislation; 2) adoption of biotech herbicide-tolerant soybeans, which reduces input costs for many farmers, increasing profit potential; and 3) relative returns for competing crops.

**Corn.** Corn growers intend to plant 77.9 million acres in 2000, up 1 percent from last year's planted acreage because of higher expected corn prices, reflected in the new crop futures price after early January. To many producers in Illinois and Iowa, corn prices anticipated for the new crop appear attractive compared with returns for soybeans. Even though marketing loan provisions may entice producers to grow soybeans, the soybean-to-corn price ratio (after allowing for the effect of soybean marketing loans) at active planting decision times (February through March) was around 2.4 to 1—lower than the 2.5 breakeven price ratio at the national level, suggesting that corn prices could be competitive with soybean prices paid to producers in those two states. The 0.1-million-acre decline in soybean plantings in Illinois probably indicates a switch to corn plantings.

Intended corn plantings in the Corn Belt this year are largely unchanged from last year, with declines in Indiana, Minnesota, and Wisconsin (down 0.1 million acres each from last year), largely offsetting increases in Illinois and Iowa. Intended corn acreage is up a net 0.5 million acres

### Planting Intentions for Major Field Crops Nearly 1 Million Acres Above Last Year's Plantings

	1999		Harvested acreage	2000
	Intended acreage	Planted acreage		Intended acreage
<i>Million acres</i>				
Corn	78.2	77.4	70.5	77.9
Soybeans	73.1	73.8	72.5	74.9
Wheat	63.0	62.8	53.9	61.7
Sorghum	8.8	9.3	8.5	9.0
Barley	5.3	5.2	5.2	5.7
Oats	4.7	4.7	2.5	4.4
Rice	3.6	3.6	3.6	3.4
Cotton	13.9	14.9	13.4	15.6
Total	250.6	251.7	230.1	252.6

Economic Research Service, USDA

in the Central and Northern Plains, where increases in South Dakota, North Dakota, and Kansas total 0.6 million acres. Nebraska intentions indicate that producers will increase soybean plantings by 0.3 million acres, probably from acreage formerly in corn and winter wheat.

The increase in intended corn acreage is rather modest in the South (the Delta, Southeast, and Southern Plains regions), as decreases in corn acreage in Oklahoma and North Carolina offset increases in other states in the area. Corn land not being planted to corn in Oklahoma is probably switched to cotton or sorghum, or left fallow.

**Other feed grains.** Among "other feed grains," only **barley** planting intentions show an increase—10 percent above last year's planted acreage. Intended barley plantings are up 550,000 acres in North Dakota, the largest producing state, and 70,000 acres in Minnesota, the fifth-largest producing state. Factors in these increases are higher premiums for malting barley, gains of about 3 percent in barley farmgate prices, and abating concern about scab disease outbreaks from inadequate soil moisture. Producers in Montana have indicated intentions to lower barley plantings by 100,000 acres, probably because they switched to winter wheat last fall.

Planting intentions for **sorghum** are 3 percent lower than last year's planted acreage. The bulk of the acreage decline is in Texas, where sorghum area is down

about 0.4 million acres (an 11-percent decline), and in Kansas. Intended **oat** acreage is down 6 percent from last year's planted acreage, with most of the decline in Texas, the Dakotas, and Montana.

**Wheat.** Wheat area intentions for 2000 total 61.7 million acres—down 2 percent from last year's planted area. USDA's *Winter Wheat Seedings* report indicated in January that farmers had planted 42.9 million acres of winter wheat for harvest in 2000, but the *March Prospective Plantings* report revised this figure upward to 43.2 million—still the lowest since 1972 but declining only slightly from last year.

Responding to expected 11-percent-lower prices, and dryness in hard red winter wheat areas, particularly in the Central and Southern Plains, farmers in Oklahoma, Texas, Kansas, and Nebraska reduced winter wheat plantings last fall by 3.5 percent (0.9 million acres) from a year earlier and are shifting to soybeans and corn. Similarly, low prices for soft red winter wheat and dry conditions last fall led to a decline of 180,000 winter wheat acres in Illinois and Michigan. In Montana, winter wheat acreage was up 0.5 million acres from the previous year as acreage that had shifted to spring wheat last year switched back to winter wheat.

In 2000, U.S. farmers intend to lower spring wheat plantings (including durum) to 18.4 million acres, a decrease of 1 million from last year's planted area.

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### Expected Cutback in Biotech Share of Corn & Cotton Plantings

U.S. farmers have indicated intentions to cut back the share of acreage planted to corn and cotton developed through biotechnology. In 2000, shares of intended plantings for bio-engineered (biotech) corn and cotton are down in major producing states—from 33 percent to 25 percent for corn, and from 55 percent to 48 percent for cotton. This signals a reversal of rapid adoption trends for biotech corn and cotton since 1996, when biotech seed was introduced. Change in the share of intended plantings of biotech soybeans is less clear, but the biotech share of soybean intended plantings accounts for 52 percent of total soybean acreage this year.

The adoption momentum for biotech corn and cotton has slackened. Factors that affect farmers' net returns—such as whether yield-increasing potential offsets a higher cost for biotech seed, and whether observed infestation levels of certain target pests indicate likely savings on pesticide costs—play a major role in producers' decisions regarding planting biotech crops vs. using conventional varieties. Uncertain market prospects for biotech crops triggered by potentially widening interest in food labeling regulation in various countries, as well as possible shifts in consumer preferences toward nonbiotech foods might also contribute to the cutback (AO April 2000).

Although the decline in *biotech corn* plantings this year might partially reflect an overall market uncertainty for biotech crops, market demand for nonbiotech corn is currently very limited, accounting for only 1 percent of 1999 U.S. corn production, according to USDA's Economic Research Service. However, a reportedly record-low infestation level of European corn borers (ECB) in 1999, resulting from a general decline in borer populations, reduces the cost-effectiveness of biotech Bt varieties, which produce a protein that is toxic to the borer.

USDA's Cooperative State Research, Education, and Extension Service, as well as university studies, report that ECB density in a few big corn-producing states—e.g., Illinois, Wisconsin, and Minnesota—declined to less than 0.5 borers per stalk in 1998 and 1999, compared with the recent peak of 1.5-3.5 in 1995. Some university studies also indicate that Bt corn's yield-increasing potential and pesticide cost saving may not offset the higher seed cost (about \$9 per acre

more than conventional varieties). As a result, the share of acreage planted to Bt corn declined to 19 percent in major producing states from 25 percent last year. The share of intended plantings of herbicide-tolerant corn remains at 4 percent, but the share in 1999 included both biotech and conventional varieties.

Market demand for nonbiotech soybeans accounts for only about 2 percent of U.S. soybean production. In contrast to corn, *herbicide-tolerant soybeans*—the most rapidly adopted biotech crop to date—remain popular with farmers this year. USDA's National Agricultural Statistics Service (NASS) estimates that just over half (52 percent) of this year's soybean acreage will be planted to herbicide-tolerant soybeans (excluding nonbiotech herbicide-tolerant varieties) compared with 57 percent last year (when NASS estimates included both biotech and conventional herbicide-tolerant varieties).

According to a recent study by the National Center for Food and Agricultural Policy, herbicide-tolerant soybean varieties are popular with farmers not because of any significant yield-increasing potential, but rather because of the simplicity and flexibility of a weed control program that utilizes a single herbicide without causing crop injury. In addition, planting herbicide-tolerant soybeans may provide cost savings from fewer herbicide applications, and herbicide-tolerant soybean production is compatible with low-tillage and narrow-row planting systems, which gained popularity over the last decade. These distinctive advantages for herbicide-tolerant soybeans probably play a key role in keeping biotech soybean planting intentions near one-half of soybean acreage.

The share of planting intentions for *herbicide-tolerant cotton* is down, dropping from 28 percent last year to 20 percent. The increase of nearly 200,000 acres in mostly conventional upland cotton acreage in California, where little biotech cotton is grown, explains about half the decline. Another factor is the inflated 1999 share of biotech cotton following the large abandonment of cotton acreage (about 1 million acres, more likely conventional acreage) in Texas last year, because last year's shares are calculated as a percent of *harvested* acres. The expected biotech share in 2000 is calculated as intended biotech plantings divided by total intended *planted* acreage.

Prospective durum wheat plantings are down 0.4 million acres—an 11-percent drop from last year—and other spring wheat acreage will fall by 0.4 percent to 0.5 million acres, with reductions mostly in South Dakota and Montana.

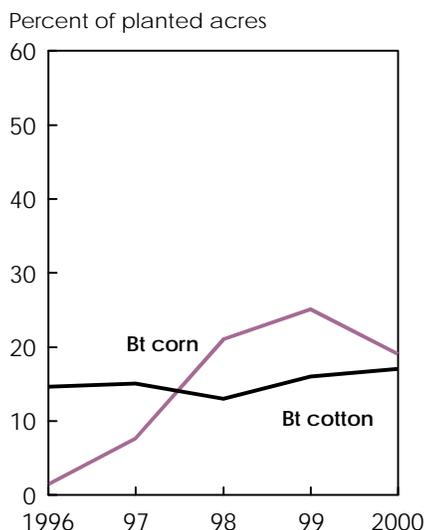
In North Dakota, other spring wheat intended plantings are up 0.2 million acres, reversing last year's shift from other spring wheat to durum. The 1999

shift to durum resulted from availability of an attractive crop insurance policy that overwhelmed market signals that would otherwise have reduced production of durum, but instead stimulated an increase of 0.5 million acres in North Dakota durum plantings. The insurance policy is cut back substantially this year in terms of number of counties where coverage is offered and in the level of price guarantees, which are now more in line with cur-

rent market prices. Some farmers have returned to planting other spring wheat. Nevertheless, intended plantings for other spring wheat are still down 0.5 million acres overall from last year as producers switch to more profitable alternatives such as soybeans and corn.

**Cotton.** Planting intentions for cotton total 15.6 million acres, an increase of 5 percent from last year. Although cotton area

**One-Fifth of Corn Plantings in 2000 To Be Insect-Resistant Varieties...**



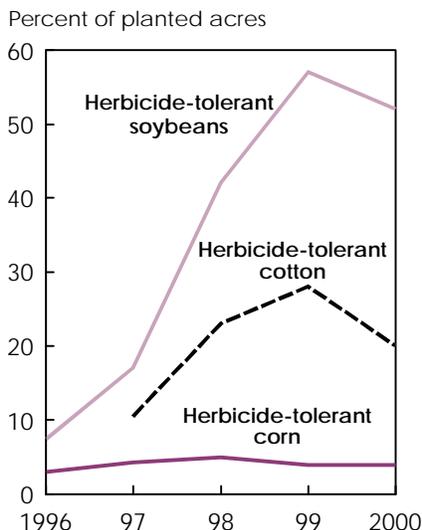
Excludes stacked-gene corn and cotton, which have both insect-resistant and herbicide-tolerant traits. 2000 projected. 1996-97 data from USDA's Agricultural Resource Management Study; 1998-2000 from National Agricultural Statistics Service, USDA.

Economic Research Service, USDA

is anticipated higher in all producing states, the bulk of the increase is expected in five states: Texas, California, Louisiana, North Carolina, and Mississippi. While market prices for cotton increased about 6 percent from last year, the expected per-unit return in 2000 (after adjusting for marketing loan gains and LDP's) shows an increase of about 7 percent. This makes cotton plantings attractive relative to competing crops such as corn, wheat, sorghum, and even soybeans.

In the South, planting intentions indicate soybean acreage (expected to decline

**...and Over Half of Soybean Plantings to Be Herbicide-Tolerant**



about 0.4 million acres) will likely be switched to cotton (expected to increase 0.3 million acres). Expected net returns are higher for cotton than for soybeans, reflecting a soybean-to-cotton price ratio of about 8 (after adjusting for the effects of both cotton and soybean marketing loans) at the planting decision point (February through March). This compares with an estimated breakeven price ratio of about 10 between these two competing crops. In addition, an improved crop insurance program attracted some producers to growing cotton this year.

**Rice.** Growers intend to plant nearly 3.4 million acres to rice, an overall 6-percent decline from 1999, with long grain plantings down 8 percent and combined medium and short grain plantings up 4 percent from last year. Planting intentions are lower this year in all southern states except Missouri, with Mississippi and Texas indicating the largest percentage declines. In contrast, growers in California indicate a 5-percent expansion in rice plantings, a result of relatively strong prices for medium grain rice, the bulk of the state's crop. A record 1999 U.S. rice crop and an 80-percent increase in ending stocks from last year have lowered the expected price for the 2000 rice crop, making plantings to competing crops such as cotton and soybeans more attractive. **AO**

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**The first production and price forecasts for field crops in 2000/01**



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