



# Grain Price OUTLOOK

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## CORN: SMALLER SUPPLIES ON THE HORIZON

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### Summary

The USDA's March *Grain Stocks* and *Prospective Plantings* report released on March 30 provided some fundamentally supportive news for the corn market. While March 1 corn stocks were up 435 million bushels from stocks of a year ago, they were marginally smaller than expected. Producers intentions to plant only 76.7 million acres of corn in 2001 is also a bit of a surprise. Intentions are 2.852 million acres below last year's actual plantings and are at the lowest level since 1995. The smaller acreage, coupled with trend yields, should allow a significant reduction in stocks by the end of the 2001-02 marketing year.

Corn prices dropped sharply from the last week of December 2000 through the end of March 2001. Some modest price recovery is expected, based on prospects for a smaller crop, some improvement in the pace of exports, and on at least modest planting delays due to cool, wet weather. New crop prices may move far enough above the loan rate to provide some attractive pricing opportunities.

### Old Crop Situation

Stocks of corn on March 1, 2001 totaled 6.037 billion bushels (Table 1). Inventories were 435 million bushels larger than on the same date last year and at the highest level for that date since 1988. Even so, stocks were about 25 to 30 million bushels smaller than expected. The stocks figure implies that a record 2.485 billion bushels of corn were consumed during the second quarter of the marketing year. It is

thought that domestic processing use of corn was about 23 million bushels larger than during the same quarter last year, while exports were down about 82 million bushels. The estimated decline in exports is based on a combination of monthly Census Bureau figures through January and the USDA's weekly export inspections report. Feed and residual use during the quarter is calculated at 1.629 billion bushels, 103 million bushels above the record for the quarter established last year.

For the year, domestic processing uses of corn are expected to total 1.98 billion bushels, an increase of 67 million bushels from use of a year ago (Table 2). The increase is being led by corn used for ethanol production. The USDA has projected feed and residual use of corn during the current marketing year at 5.775 billion bushels, 109 million more than used last year. Estimated use during the first half of the year was 3.821 billion bushels, 106 million more than during the same period last year. Use during the last half of the year will be impacted by prospects for declining numbers of cattle on feed, a very modest expansion in hog numbers, and chances of better pasture conditions in western areas than existed last year. The year-over-year increase in feed and residual use during the last half of the year will likely be small, but could push use for the year up to 5.8 billion bushels (Table 2).

Corn exports during the first half of the 2000-01 marketing year are estimated at 892 million bushels, 110 million bushels less than during the same period last year. The USDA currently projects exports for the entire year at 2 billion bushels, 63 million above the exports of a year

ago. That projection is down from 2.275 billion projected in October and November 2000. The projection was lowered each month from December 2000 through March 2001. Compared to last year, the shortfall in exports have been to Japan and South Korea. Shipments to Mexico continue to expand as livestock production increases there and tariffs on U.S. corn are lowered under the North American Free Trade Agreement (NAFTA).

During the last two weeks of March, the pace of U.S. corn exports accelerated. As of March 29, inspections totaled 1.056 billion bushels, only 88 million less than on the same date last year. Last year, corn exports were fairly anemic during the last half of the year, totaling only 935 million bushels compared to 1.066 billion in the last half of the 1998-99 marketing year. To reach the USDA projection, U.S. exports need to average about 42.6 million bushels per week during the last 22 weeks of the marketing year. The average during that period last year was 35.7 million bushels.

Several factors will determine if U.S. exports will recover to reach the USDA projection of 2 billion bushels. One of those is the purchasing decisions of Japan. If StarLink contaminated corn can be successfully isolated, Japan is expected to accelerate the purchase of U.S. corn. A second factor will be Chinese corn export policy. China has aggressively exported corn to South Korea, but exportable supplies may now be limited. Those sales should slow dramatically. Rumors of potential Chinese purchase of U.S. corn circulated in late March, but seemed to be without foundation. Sales of U.S. corn to China would be a welcome surprise. The third factor will be the availability of corn from the southern hemisphere. While coarse grain production is down sharply in South Africa, production in Brazil is up sharply (Table 3). The Brazilian corn crop is estimated at 1.516 billion bushels, nearly 22 percent larger than the 2000 harvest. Brazil is expected to export 40 to 50 million bushels of corn, becoming an exporter for the first time since 1982-83. In addition, imports of corn into Brazil are expected to decline from 70 million bushels last year to about 20 million during the current year. The reduced imports will be primarily from Argentina, while Japan has expressed interest in importing Brazilian corn.

As of March 29, outstanding export sales of U.S. corn totaled only 250 million bushels, compared to 285 million on the same date last year. New sales will need to exceed 32 million bushels per week if sales are to reach the 2 billion bushel mark for the year. It now appears doubtful if that will happen. Corn exports are projected to reach 1.95 billion bushels for the year (Table 2). Corn consumption for all purposes is projected at 9.73 billion bushels for the 2000-01 marketing year. Year ending stocks are expected to be at an eight year high of 1.966 billion bushels.

### **Prospects for 2001-02**

The USDA's March *Prospective Plantings* report provides the first look at the potential size of the 2001 U.S. crop. Producers reported intentions to plant 76.693 million acres of corn in 2001. That is 2.852 million fewer acres than planted last year and would be the smallest acreage since 1995 (Table 4). The planned reduction in corn acreage is fairly widespread. Of the major corn producing states, only Missouri and Pennsylvania show acreage unchanged for 2001, while none of the major states plan an increase in corn acreage. The largest declines are planned in Iowa (400,000) and Minnesota (300,000), with cuts of 200,000 acres planned in Illinois, Indiana, Nebraska, Ohio, South Dakota, and Texas (Table 5).

Last year, actual corn acreage exceeded March intentions by 1.664 million acres. Such an increase is rare and probably reflected the early planting season and relatively high corn prices during the spring. This year, low corn prices, high fertilizer costs (nitrogen), and a more normal planting season are all expected to hold corn acreage near March intentions. If planted acreage is near intentions, and a normal growing season unfolds, acreage harvested for grain should be near 69.9 million acres.

The U.S. average corn yield is difficult to anticipate this early in the season. History would suggest that summer weather conditions determine yield. There is little correlation of planting dates with final yields. The tendency is to use trend yield as a projection of actual yield, although actual yield rarely falls on the trend line. The U.S. average yield was at or

above trend yield in each of the past five years. The average yield was below trend in 1991, 1993, and 1995 and above trend in 1992 and 1994. The trend yield calculation for 2001 depends a bit on what time period is used to calculate the trend and what form of trend line is calculated (linear or curvilinear). Most calculate a trend for 2001 in the 136 to 137 bushel range. Assuming that producers follow through on their planting intentions, a trend yield would result in a 2001 corn crop of about 9.55 billion bushels. A crop of that size would be about 420 million bushels smaller than the 2000 crop and about equal to the average production of the past five years (Table 7). With beginning stocks of 1.966 billion and imports of 10 million bushels, marketing year supplies would total 11.526 billion bushels, about 170 million less than supplies for the current marketing year (Table 2).

Domestic consumption of corn during the 2001-02 marketing year should be well supported. Processing use of corn continues to grow at a very steady pace, driven by a growing population and expansion in ethanol production. With new facilities coming on-line, ethanol production should continue to grow into next year, particularly if petroleum prices remain relatively high. Use for all seed, food, and industrial purposes is projected at 2.06 billion bushels.

Feed and residual use of corn should be supported by profitable feeding margins and expansion in hog and poultry production. A reduction in the number of cattle being fed and the potential for a rebound in sorghum production would likely limit the growth in feed use. Use is projected at 5.875 billion bushels.

Unlike the steady growth experienced in domestic corn consumption, annual exports have been extremely volatile. Export are influenced by a wide range of factors – the price of corn, the rate of economic growth, size of crops in the rest of the world, currency values, policy decision, and perhaps other factors all have some influence. Exports of U.S. corn have been relatively stable since 1998-99, but at a modest level. The magnitude of annual exports tend to cycle, but there has clearly not been a trend increase. For the most part, feed grain production in the rest of the world has grown fast enough that

the need for U.S. corn has not increased over time. Production was consistently large from 1996 through 1999 (Table 3).

For the year ahead, the size of the Chinese corn crop and Chinese export/import policy will be extremely important for U.S. corn exports. There is some optimism that Chinese exports will diminish when they enter the World Trade Organization as subsidies will be restricted. Exports to South Korea could decline and China might once again become a net importer in the near future. The rate of growth in Brazilian corn production will also be important. Continued growth suggests that Brazil could maintain an export presence, particularly for the non-GMO market. In addition, the rate of growth in corn consumption in Mexico will be important. Reduced import tariffs will make U.S. corn very competitive in that market. For now, we anticipate a reasonable expansion in U.S. exports next year, perhaps to 2.2 billion bushels.

Early in the 2000-01 crop year, it appeared that use of corn could reach 10 billion bushels. Disappointing exports, however, means that use will fall short of that level. For the 2001-02 year, it once again appears that use could exceed 10 billion bushels, with our projection at 10.135 billion. With a crop of 9.55 billion bushels, year ending stocks (September 1, 2002) could be reduced to a more manageable 1.4 billion bushels.

### **Price Prospects**

The average farm price of corn in central Illinois averaged about \$1.89 per bushel during the first seven months of 2000-01 marketing year (September 2000 through March 2001). That price is about equal to the price during the same period last year and about \$.12 below the average in those six months in 1998-99. The lowest price of \$1.51 was reached on September 19, 2000 and the highest price of \$2.105 was established on December 29. With the majority of the crop already priced, the weighted average price for the 2000 crop is expected to be near \$1.85, on a national basis. The only thing that could alter that average significantly would be a problem with the 2001 crop.

For the 2001-02 marketing year, prospects of declining stocks point to slightly higher average prices. In recent years when ending stocks were about 1.5 billion or less, the seasons average price was in the range of \$2.26 to \$2.45 per bushel (Table 2). Based on the projections developed here, the ending stocks to use ratio for the 2001-02 marketing year is about 13.7 percent. That is a smaller ratio than in years with a similar level of stocks. That ratio was 16.6 percent in 1989-90, 19.6 percent in 1990-91, 16.7 percent in 1994-95, and 14.9 percent in 1997-98. On the surface then, it appears that the average price during the upcoming marketing year should be at least as high as during those years cited. However, there appears to be less demand for inventory than during the pre "freedom to farm" era. Part of the decline in demand for inventory likely reflects the fact that there is less need for buffer stocks in an era of full production (no acreage reduction programs). The shift in demand for inventory, if in fact it has occurred, means that the relationship between the stocks-to-use ratio and the average price has shifted. The market is more comfortable with stocks at a low level. The price impact of the demand shift appears to be large, although a short crop year has not been experienced in the post "freedom-to-farm" era to provide a complete test. An average marketing year price of about \$2.10 might be expected, rather than an average near \$2.35.

The futures market is currently offering a marketing year average price of about \$2.25 for the 2001 crop (December futures at \$2.38). Based on our analysis, there is a relatively small risk premium reflected in the current market. That is probably justified by the outlook for a generally favorable growing season. A change to a more unfavorable outlook could readily add \$.20 to \$.25 to that risk premium. On the other hand, a very favorably growing season with an average yield of 140 bushels or higher could push December futures back to near \$2.00.

### **What to Do**

For old crop corn that is in inventory and either under loan or still eligible for marketing loan benefits, a case can be made for continued patience. With the loan price as a floor, holding for a spring or early summer weather

rally is a low risk proposition. For old crop corn that is no longer eligible for marketing loan benefits, there is still risk in ownership if the early part of the growing season is favorable. Pricing additional quantities early may be a prudent strategy. Otherwise, slightly out of the money July options might be considered. While basis levels are generally weak by historic standards, significant improvement may once again prove difficult this spring and summer. Without significant basis strength, replacing inventory with call options might be considered, although there is still a bit of carry in the market. Retaining ownership and buying put options for farm stored corn might be considered a low cost way to speculate on some basis improvement.

For new crop corn, the price for harvest delivery in most areas is slightly above the loan rate. There seems to be little incentive to price much of the crop with such limited downside risk. More aggressive selling would be warranted if weather rallies push December futures back near the \$2.50 mark.

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Table 1. Corn Quarterly Balance Sheet

|                    | 1981-82         | 1982-83 | 1983-84 | 1984-85 | 1985-86 | 1986-87 | 1987-88 | 1988-89 | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 | 1999-00 | 2000-01 |
|--------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                    | million bushels |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| September 1 stocks | 1,392           | 2,537   | 3,523   | 1,006   | 1,648   | 4,040   | 4,882   | 4,259   | 1,930   | 1,344   | 1,521   | 1,100   | 2,113   | 850     | 1,558   | 426     | 883     | 1,308   | 1,787   | 1,718   |
| Production         | 8,119           | 8,235   | 4,174   | 7,672   | 8,875   | 8,226   | 7,131   | 4,929   | 7,532   | 7,934   | 7,475   | 9,477   | 6,338   | 10,051  | 7,400   | 9,233   | 9,207   | 9,759   | 9,431   | 9,968   |
| TOTAL <sup>a</sup> | 9,511           | 10,772  | 7,699   | 8,680   | 10,534  | 12,267  | 12,016  | 9,191   | 9,464   | 9,282   | 9,016   | 10,584  | 8,472   | 10,910  | 8,974   | 9,672   | 10,099  | 11,085  | 11,232  | 11,696  |
| September-November |                 |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Seed, food, ind.   | 173             | 208     | 227     | 244     | 276     | 295     | 296     | 302     | 312     | 338     | 361     | 370     | 383     | 410     | 417     | 388     | 435     | 450     | 459     | 468     |
| Export             | 519             | 443     | 493     | 503     | 415     | 318     | 396     | 471     | 582     | 383     | 421     | 488     | 435     | 449     | 660     | 487     | 380     | 450     | 534     | 506     |
| Feed, residual     | 1,218           | 1,215   | 1,326   | 1,301   | 1,219   | 1,348   | 1,551   | 1,344   | 1,487   | 1,619   | 1,673   | 1,814   | 1,701   | 1,963   | 1,778   | 1,885   | 2,030   | 2,118   | 2,189   | 2,192   |
| TOTAL              | 1,910           | 1,866   | 2,046   | 2,048   | 1,910   | 1,961   | 2,243   | 2,117   | 2,381   | 2,339   | 2,455   | 2,672   | 2,519   | 2,822   | 2,856   | 2,759   | 2,845   | 3,018   | 3,182   | 3,166   |
| December 1 stocks  | 7,601           | 8,906   | 5,652   | 6,631   | 8,615   | 10,305  | 9,771   | 7,072   | 7,082   | 6,940   | 6,547   | 7,906   | 5,937   | 8,080   | 6,106   | 6,903   | 7,247   | 8,052   | 8,039   | 8,522   |
| Seed, food, ind.   | 166             | 192     | 212     | 236     | 262     | 281     | 288     | 301     | 313     | 330     | 362     | 365     | 379     | 410     | 405     | 400     | 425     | 434     | 447     | 470     |
| Export             | 470             | 510     | 506     | 580     | 460     | 313     | 405     | 502     | 682     | 471     | 362     | 463     | 330     | 590     | 562     | 525     | 380     | 465     | 468     | 386     |
| Feed, residual     | 1,199           | 1,305   | 1,069   | 1,192   | 1,306   | 1,463   | 1,444   | 1,065   | 1,276   | 1,351   | 1,267   | 1,401   | 1,240   | 1,492   | 1,344   | 1,486   | 1,503   | 1,460   | 1,526   | 1,629   |
| TOTAL              | 1,835           | 2,007   | 1,787   | 2,008   | 2,028   | 2,057   | 2,137   | 1,868   | 2,271   | 2,152   | 1,991   | 2,229   | 1,949   | 2,493   | 2,311   | 2,411   | 2,308   | 2,359   | 2,426   | 2,485   |
| March 1 stocks     | 5,766           | 6,899   | 3,865   | 4,623   | 6,587   | 8,248   | 7,636   | 5,204   | 4,812   | 4,789   | 4,561   | 5,678   | 3,996   | 5,592   | 3,800   | 4,494   | 4,940   | 5,698   | 5,602   | 6,037   |
| Seed, food, ind.   | 201             | 228     | 253     | 294     | 307     | 333     | 337     | 353     | 376     | 384     | 414     | 414     | 423     | 452     | 433     | 471     | 470     | 495     | 512     |         |
| Export             | 596             | 475     | 513     | 475     | 201     | 496     | 510     | 592     | 601     | 454     | 371     | 411     | 270     | 568     | 610     | 433     | 350     | 497     | 451     |         |
| Feed, residual     | 1,089           | 1,272   | 954     | 1,019   | 1,091   | 1,088   | 951     | 841     | 993     | 960     | 1,042   | 1,146   | 950     | 1,159   | 1,044   | 1,097   | 1,084   | 1,097   | 1,059   |         |
| TOTAL              | 1,886           | 1,975   | 1,720   | 1,788   | 1,599   | 1,917   | 1,798   | 1,786   | 1,970   | 1,798   | 1,828   | 1,971   | 1,642   | 2,180   | 2,087   | 2,001   | 1,904   | 2,089   | 2,022   |         |
| June 1 stocks      | 3,880           | 4,924   | 2,145   | 2,836   | 4,990   | 6,332   | 5,839   | 3,419   | 2,843   | 2,992   | 2,739   | 3,709   | 2,360   | 3,415   | 1,718   | 2,497   | 3,040   | 3,616   | 3,586   |         |
| Seed, food, ind.   | 193             | 227     | 238     | 293     | 307     | 324     | 331     | 341     | 369     | 374     | 396     | 407     | 429     | 442     | 373     | 460     | 475     | 467     | 495     |         |
| Export             | 412             | 393     | 374     | 292     | 151     | 365     | 406     | 463     | 503     | 419     | 430     | 301     | 293     | 570     | 396     | 353     | 394     | 569     | 484     |         |
| Feed, residual     | 739             | 781     | 527     | 603     | 499     | 761     | 843     | 685     | 627     | 679     | 816     | 891     | 789     | 846     | 527     | 809     | 865     | 795     | 890     |         |
| TOTAL              | 1,344           | 1,401   | 1,139   | 1,188   | 957     | 1,450   | 1,580   | 1,489   | 1,499   | 1,472   | 1,642   | 1,599   | 1,511   | 1,858   | 1,295   | 1,617   | 1,734   | 1,831   | 1,873   |         |
| September 1 stocks | 2,537           | 3,523   | 1,006   | 1,648   | 4,040   | 4,882   | 4,259   | 1,930   | 1,344   | 1,521   | 1,100   | 2,113   | 850     | 1,558   | 426     | 883     | 1,308   | 1,787   | 1,718   |         |
| Annual             |                 |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Seed, food, ind.   | 733             | 855     | 930     | 1,067   | 1,152   | 1,233   | 1,251   | 1,298   | 1,370   | 1,425   | 1,533   | 1,556   | 1,613   | 1,715   | 1,628   | 1,714   | 1,805   | 1,846   | 1,913   |         |
| Export             | 1,997           | 1,821   | 1,887   | 1,850   | 1,227   | 1,492   | 1,716   | 2,029   | 2,367   | 1,727   | 1,584   | 1,663   | 1,328   | 2,177   | 2,228   | 1,797   | 1,504   | 1,981   | 1,937   |         |
| Feed, residual     | 4,245           | 4,573   | 3,876   | 4,115   | 4,114   | 4,660   | 4,789   | 3,934   | 4,382   | 4,609   | 4,798   | 5,252   | 4,680   | 5,460   | 4,693   | 5,277   | 5,482   | 5,471   | 5,664   |         |
| TOTAL              | 6,975           | 7,249   | 6,693   | 7,032   | 6,494   | 7,385   | 7,757   | 7,260   | 8,120   | 7,761   | 7,916   | 8,471   | 7,622   | 9,352   | 8,548   | 8,789   | 8,791   | 9,298   | 9,524   |         |

<sup>a</sup> Includes imports for the entire year.

Table 2. Corn Annual Balance Sheet

|                        | 1989-90         | 1990-91      | 1991-92      | 1992-93      | 1993-94      | 1994-95       | 1995-96      | 1996-97      | 1997-98      | 1998-99      | 1999-00      | 2000-01 <sup>a</sup> | 2001-02 <sup>a</sup> |
|------------------------|-----------------|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|--------------|----------------------|----------------------|
|                        | million bushels |              |              |              |              |               |              |              |              |              |              |                      |                      |
| Carryin                | 1,930           | 1,344        | 1,521        | 1,100        | 2,113        | 850           | 1,558        | 426          | 883          | 1,308        | 1,787        | 1,718                | 1,966                |
| Production             | <u>7,532</u>    | <u>7,934</u> | <u>7,475</u> | <u>9,477</u> | <u>6,338</u> | <u>10,051</u> | <u>7,400</u> | <u>9,233</u> | <u>9,207</u> | <u>9,759</u> | <u>9,431</u> | <u>9,968</u>         | <u>9,550</u>         |
| TOTAL <sup>b</sup>     | 9,464           | 9,282        | 9,016        | 10,584       | 8,472        | 10,910        | 8,974        | 9,672        | 10,099       | 11,085       | 11,232       | 11,696               | 11,526               |
| Seed, food, industrial | 1,370           | 1,425        | 1,533        | 1,556        | 1,613        | 1,715         | 1,628        | 1,714        | 1,805        | 1,846        | 1,913        | 1,980                | 2,060                |
| Export                 | 2,367           | 1,727        | 1,584        | 1,663        | 1,328        | 2,177         | 2,228        | 1,797        | 1,504        | 1,981        | 1,937        | 1,950                | 2,200                |
| Feed and residual      | <u>4,382</u>    | <u>4,609</u> | <u>4,798</u> | <u>5,252</u> | <u>4,680</u> | <u>5,460</u>  | <u>4,693</u> | <u>5,277</u> | <u>5,482</u> | <u>5,471</u> | <u>5,664</u> | <u>5,800</u>         | <u>5,875</u>         |
| TOTAL                  | 8,120           | 7,761        | 7,915        | 8,471        | 7,621        | 9,352         | 8,548        | 8,789        | 8,791        | 9,298        | 9,515        | 9,730                | 10,135               |
| Carryout               | 1,344           | 1,521        | 1,100        | 2,113        | 850          | 1,558         | 426          | 883          | 1,308        | 1,787        | 1,718        | 1,966                | 1,391                |
| U.S. average price     | \$2.36          | \$2.28       | \$2.37       | \$2.07       | \$2.50       | \$2.26        | \$3.24       | \$2.71       | \$2.45       | \$1.94       | \$1.82       | \$1.85               | \$2.10               |

<sup>a</sup> Projected

<sup>b</sup> Includes imports

Table 3. World Coarse Grain Production

|                    | 1983                | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  |
|--------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                    | million metric tons |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| United States      | 137.1               | 237.7 | 274.9 | 252.8 | 215.9 | 149.7 | 221.4 | 230.7 | 218.6 | 277.4 | 186.5 | 284.9 | 210.0 | 265.7 | 260.4 | 271.5 | 263.2 | 274.5 |
| Former USSR        | 99.0                | 90.5  | 100.0 | 105.9 | 113.7 | 97.5  | 104.8 | 99.4  | 80.4  | 95.3  | 95.6  | 79.2  | 57.4  | 52.0  | 67.9  | 38.0  | 40.4  | 49.7  |
| Western Europe     | 86.2                | 103.6 | 101.4 | 94.0  | 93.3  | 99.5  | 102.2 | 97.6  | 104.3 | 93.8  | 96.1  | 86.6  | 88.5  | 103.8 | 109.4 | 105.6 | 103.1 | 108.3 |
| China              | 92.7                | 96.2  | 82.3  | 87.0  | 95.8  | 94.2  | 93.5  | 111.7 | 112.3 | 108.4 | 117.8 | 114.3 | 124.5 | 141.3 | 114.7 | 144.2 | 137.8 | 113.9 |
| Eastern Europe     | 67.1                | 72.8  | 65.5  | 73.9  | 63.9  | 61.3  | 60.2  | 51.4  | 64.7  | 43.2  | 44.5  | 46.9  | 51.4  | 50.0  | 59.0  | 51.0  | 54.8  | 36.0  |
| Canada             | 21.0                | 22.0  | 23.9  | 25.5  | 25.5  | 19.7  | 23.5  | 24.8  | 21.8  | 19.6  | 24.0  | 23.4  | 24.1  | 28.2  | 25.1  | 26.6  | 26.8  | 24.4  |
| India              | 34.1                | 31.4  | 25.8  | 26.6  | 23.5  | 31.3  | 34.6  | 32.6  | 25.9  | 36.8  | 31.0  | 30.1  | 29.8  | 34.3  | 30.9  | 31.7  | 30.5  | 30.5  |
| Brazil             | 21.5                | 22.5  | 21.7  | 27.3  | 25.4  | 26.7  | 22.5  | 24.4  | 31.4  | 29.9  | 33.8  | 38.2  | 33.2  | 36.6  | 31.3  | 33.5  | 32.6  | 39.6  |
| Argentina          | 17.4                | 18.9  | 17.4  | 13.0  | 13.1  | 7.3   | 8.3   | 10.8  | 14.5  | 14.1  | 13.3  | 13.9  | 14.1  | 18.9  | 24.7  | 17.8  | 21.7  | 19.1  |
| South Africa       | 5.1                 | 9.0   | 8.9   | 7.9   | 7.9   | 13.0  | 9.5   | 8.9   | 3.6   | 10.7  | 14.0  | 5.4   | 11.0  | 10.7  | 8.2   | 8.1   | 11.1  | 7.9   |
| World              | 685.4               | 814.1 | 843.3 | 835.2 | 791.5 | 731.2 | 802.6 | 819.5 | 804.2 | 869.1 | 799.9 | 873.6 | 802.9 | 908.3 | 883.2 | 890.1 | 876.7 | 856.3 |
| Excluding the U.S. | 548.3               | 576.4 | 568.4 | 582.4 | 575.7 | 581.5 | 581.2 | 588.8 | 585.6 | 591.7 | 613.4 | 588.7 | 592.9 | 642.6 | 622.8 | 618.4 | 612.5 | 581.8 |

Source: USDA, FAS, World Crop Production, Mar. 2001 and earlier issues.

Table 4. United States Corn Planting Intentions, Actual Plantings, and Acres Harvested

| Year | Planted Acreage                |                     |                    |        | Harvested<br>Acreage |
|------|--------------------------------|---------------------|--------------------|--------|----------------------|
|      | February/January<br>Intentions | March<br>Intentions | June<br>Intentions | Actual |                      |
|      |                                |                     | thousand acres     |        |                      |
| 1976 | 80,822                         | 82,727              | 84,092             | 84,588 | 71,506               |
| 1977 | 84,526                         | 83,923              | 82,735             | 84,328 | 71,614               |
| 1978 | 80,944                         | 80,237              | 78,717             | 81,675 | 71,930               |
| 1979 | 80,676                         | 79,209              | 79,751             | 81,394 | 72,400               |
| 1980 | 83,131                         | 82,022              | 83,478             | 84,043 | 72,961               |
| 1981 | ...                            | 83,977              | 84,677             | 84,097 | 74,524               |
| 1982 | ...                            | 84,735              | 82,129             | 81,857 | 72,719               |
| 1983 | 69,569 <sup>a</sup>            | 58,812              | 60,129             | 60,217 | 51,479               |
| 1984 | ...                            | 81,766              | 79,940             | 80,617 | 71,897               |
| 1985 | ...                            | 82,021              | 83,217             | 83,398 | 75,209               |
| 1986 | ...                            | 78,066              | 76,646             | 76,580 | 68,907               |
| 1987 | ...                            | 67,556              | 66,024             | 66,200 | 59,505               |
| 1988 | ...                            | 66,926              | 67,519             | 67,717 | 58,250               |
| 1989 | ...                            | 73,253              | 72,790             | 72,322 | 64,783               |
| 1990 | ...                            | 74,804              | 74,574             | 74,166 | 66,952               |
| 1991 | 77,500                         | 76,124              | 75,909             | 75,957 | 68,822               |
| 1992 |                                | 79,007              | 79,335             | 79,311 | 72,077               |
| 1993 |                                | 76,486              | 74,259             | 73,239 | 62,933               |
| 1994 |                                | 78,625              | 78,767             | 78,921 | 72,514               |
| 1995 |                                | 75,323              | 72,800             | 71,479 | 65,210               |
| 1996 |                                | 79,920              | 80,355             | 79,229 | 72,644               |
| 1997 |                                | 81,416              | 80,227             | 79,537 | 72,671               |
| 1998 |                                | 80,781              | 80,798             | 80,165 | 72,589               |
| 1999 |                                | 78,219              | 77,611             | 77,386 | 70,487               |
| 2000 |                                | 77,881              | 79,579             | 79,545 | 72,732               |
| 2001 |                                | 76,693              |                    |        | (69,893)             |

<sup>a</sup> February



Table 5. Planted Acreage of Corn by State

| State          | 1990           | 1991   | 1992   | 1993   | 1994   | 1995   | 1996   | 1997   | 1998   | 1999   | 2000   | 2001 <sup>1</sup> |
|----------------|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------|
|                | thousand acres |        |        |        |        |        |        |        |        |        |        |                   |
| Georgia        | 660            | 600    | 750    | 650    | 600    | 400    | 580    | 550    | 500    | 350    | 400    | 300               |
| Illinois       | 10,600         | 11,200 | 11,200 | 10,590 | 11,600 | 10,200 | 11,000 | 11,200 | 10,600 | 10,800 | 11,200 | 11,000            |
| Indiana        | 5,600          | 5,700  | 6,100  | 5,550  | 6,100  | 5,400  | 5,600  | 5,900  | 5,800  | 5,800  | 5,700  | 5,500             |
| Iowa           | 12,800         | 12,500 | 13,200 | 12,000 | 13,000 | 11,700 | 12,700 | 12,200 | 12,500 | 12,100 | 12,300 | 11,900            |
| Kansas         | 1,600          | 1,800  | 1,850  | 2,000  | 2,280  | 2,150  | 2,500  | 2,750  | 3,000  | 3,150  | 3,450  | 3,400             |
| Kentucky       | 1,350          | 1,400  | 1,420  | 1,370  | 1,350  | 1,280  | 1,300  | 1,270  | 1,300  | 1,320  | 1,330  | 1,280             |
| Michigan       | 2,400          | 2,600  | 2,700  | 2,500  | 2,550  | 2,450  | 2,650  | 2,500  | 2,300  | 2,200  | 2,200  | 2,150             |
| Minnesota      | 6,700          | 6,600  | 7,200  | 6,300  | 7,000  | 6,700  | 7,500  | 7,000  | 7,300  | 7,100  | 7,100  | 6,800             |
| Missouri       | 2,100          | 2,300  | 2,500  | 2,200  | 2,400  | 1,650  | 2,750  | 2,700  | 2,650  | 2,650  | 2,850  | 2,850             |
| Nebraska       | 7,700          | 8,200  | 8,300  | 8,000  | 8,600  | 8,000  | 8,500  | 8,900  | 8,800  | 8,600  | 8,500  | 8,300             |
| North Carolina | 1,200          | 1,050  | 1,150  | 1,000  | 1,000  | 800    | 1,000  | 960    | 860    | 750    | 730    | 710               |
| Ohio           | 3,700          | 3,700  | 3,800  | 3,500  | 3,700  | 3,300  | 2,900  | 3,800  | 3,550  | 3,450  | 3,550  | 3,350             |
| Pennsylvania   | 1,380          | 1,400  | 1,380  | 1,370  | 1,400  | 1,380  | 1,450  | 1,550  | 1,550  | 1,500  | 1,550  | 1,550             |
| South Dakota   | 3,400          | 3,750  | 3,800  | 3,350  | 3,800  | 2,800  | 4,000  | 3,800  | 3,900  | 3,600  | 4,300  | 4,100             |
| Tennessee      | 620            | 620    | 740    | 660    | 670    | 640    | 770    | 700    | 700    | 630    | 650    | 640               |
| Texas          | 1,650          | 1,700  | 1,750  | 2,000  | 2,150  | 2,100  | 2,100  | 2,000  | 2,400  | 1,950  | 2,100  | 1,900             |
| Wisconsin      | 3,700          | 3,800  | 3,900  | 3,400  | 3,750  | 3,650  | 3,900  | 3,850  | 3,700  | 3,600  | 3,500  | 3,400             |
| United States  | 74,171         | 75,951 | 79,325 | 73,323 | 79,158 | 71,245 | 79,487 | 79,537 | 80,165 | 77,386 | 79,545 | 76,693            |

<sup>1</sup> March intentions

Table 6. United States Corn Yield Estimates

|             | 1975             | 1976 | 1977 | 1978  | 1979  | 1980 | 1981  | 1982  | 1983 | 1984  | 1985  | 1986  | 1987  | 1988 | 1989  | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  |
|-------------|------------------|------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | bushels per acre |      |      |       |       |      |       |       |      |       |       |       |       |      |       |       |       |       |       |       |       |       |       |       |       |       |
| July 1      | 93.0             | 90.5 | 89.4 | 90.1  | 95.8  | 99.3 | 95.9  | ...   | ...  | ...   | ...   | ...   | ...   | 87.0 |       |       |       |       |       |       |       |       |       |       |       |       |
| August 1    | 87.4             | 86.7 | 87.3 | 96.1  | 102.1 | 93.0 | 104.3 | 113.9 | 99.9 | 107.9 | 110.6 | 120.4 | 121.4 | 78.5 | 112.8 | 117.7 | 107.8 | 121.3 | 116.0 | 128.4 | 125.6 | 118.7 | 125.3 | 130.0 | 134.7 | 141.9 |
| September 1 | 85.1             | 82.8 | 89.7 | 100.3 | 104.6 | 91.8 | 107.1 | 113.9 | 85.1 | 106.3 | 113.3 | 119.7 | 119.9 | 78.5 | 112.4 | 121.7 | 106.1 | 121.4 | 113.1 | 129.0 | 121.1 | 120.2 | 125.2 | 132.0 | 132.2 | 141.8 |
| October 1   | 86.2             | 82.7 | 90.8 | 100.7 | 106.4 | 90.8 | 109.0 | 114.2 | 82.9 | 105.5 | 115.1 | 119.2 | 119.9 | 80.2 | 114.4 | 120.3 | 108.8 | 123.8 | 110.3 | 133.8 | 116.6 | 123.0 | 125.8 | 132.0 | 133.5 | 139.6 |
| November 1  | 87.2             | 85.5 | 91.5 | 101.2 | 109.2 | 90.8 | 109.2 | 114.2 | 80.5 | 105.9 | 116.6 | 119.3 | 120.3 | 82.3 | 116.6 | 119.0 | 108.6 | 129.3 | 103.1 | 138.4 | 113.7 | 126.5 | 126.4 | 133.3 | 134.5 | 137.7 |
| January 1   | 86.2             | 87.4 | 90.8 | 101.2 | 109.4 | 91.0 | 109.9 | 114.8 | 81.6 | 106.6 | 118.0 | 119.3 | 119.4 | 84.6 | 116.2 | 118.5 | 108.6 | 131.4 | 100.7 | 138.6 | 113.5 | 127.1 | 127.0 | 134.4 | 133.8 | 137.1 |
| FINAL       | 86.4             | 88.0 | 90.8 | 101.0 | 109.5 | 91.0 | 108.9 | 113.2 | 81.1 | 106.7 | 118.0 | 119.3 | 119.8 | 84.6 | 116.3 | 118.5 | 108.6 | 131.5 | 100.7 | 138.6 | 113.5 | 127.1 | 126.7 | 134.4 | 133.8 |       |

Table 7. United States Corn Production Estimates

|           | 1981            | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993  | 1994   | 1995  | 1996  | 1997  | 1998  | 1999  | 2000   |
|-----------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|
|           | million bushels |       |       |       |       |       |       |       |       |       |       |       |       |        |       |       |       |       |       |        |
| July      | 7,116           | ...   | ...   | ...   | ...   | ...   | ...   | 5,200 |       |       |       |       |       |        |       |       |       |       |       |        |
| August    | 7,735           | 8,315 | 5,237 | 7,668 | 8,266 | 8,316 | 7,231 | 4,479 | 7,348 | 7,850 | 7,418 | 8,762 | 7,423 | 9,214  | 8,122 | 8,695 | 9,276 | 9,592 | 9,561 | 10,369 |
| September | 7,940           | 8,319 | 4,390 | 7,552 | 8,469 | 8,268 | 7,141 | 4,462 | 7,321 | 8,118 | 7,295 | 8,770 | 7,229 | 9,257  | 7,832 | 8,804 | 9,268 | 9,738 | 9,381 | 10,362 |
| October   | 8,081           | 8,315 | 4,259 | 7,498 | 8,603 | 8,220 | 7,139 | 4,553 | 7,449 | 8,022 | 7,479 | 8,938 | 6,962 | 9,602  | 7,541 | 9,012 | 9,312 | 9,743 | 9,467 | 10,192 |
| November  | 8,097           | 8,330 | 4,121 | 7,527 | 8,717 | 8,223 | 7,166 | 4,671 | 7,590 | 7,935 | 7,479 | 9,329 | 6,503 | 10,010 | 7,374 | 9,265 | 9,359 | 9,836 | 9,537 | 10,054 |
| January   | 8,201           | 8,397 | 4,204 | 7,656 | 8,865 | 8,253 | 7,064 | 4,921 | 7,527 | 7,933 | 7,474 | 9,479 | 6,344 | 10,103 | 7,374 | 9,293 | 9,366 | 9,761 | 9,437 | 9,968  |
| FINAL     | 8,119           | 8,235 | 4,174 | 7,672 | 8,875 | 8,226 | 7,131 | 4,929 | 7,532 | 7,934 | 7,475 | 9,477 | 6,338 | 10,051 | 7,400 | 9,233 | 9,207 | 9,759 | 9,431 |        |