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## SOYBEANS: SMALLER U.S. CROP, WILL SOUTH AMERICA FILL THE GAP?

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#### Abstract

Summary The USDA's October Crop Production report projected the 2002 U.S. soybean harvest at 2.654 billion bushels, unchanged from the September forecast and 237 million smaller than the 2001 crop. The U.S. average yield is projected at 37 bushels per acre, down 2.6 bushels from the average of a year ago. The 2002 crop is well below that of a year ago in most eastern growing areas and in far western growing areas. The largest increase occurred in Minnesota.

The smaller U.S. crop will require a significant reduction in use during the 2002-03 marketing year. That reduction is expected to come in the export of U.S. soybeans even at relatively low prices due to an anticipated increase in South American soybean production. The USDA projects that the 2003 harvest from the crop just being planted will be 243 million bushels larger than the 2002 crop. Stocks of U.S. soybeans will be reduced to the lowest level in six years by the end of the current marketing year. If the South American crop is large and soybean prices remain low, U.S. producers will likely reduce soybean acreage in 2003. For the current year, the average farm price of soybeans is expected to be near $\$ 5.45$, nearly $\$ 1.00$ higher than the annual average of the past three years. If South American production is less than currently projected, or if U.S. average yields do not recover in 2003, prices could moved higher than currently projected.


## Smaller U.S. Crop Confirmed

At 2.654 billion bushels, the USDA's October projection of the U.S. soybean crop is unchanged from the September projection and 237 million bushels smaller than the record large 2001 crop (Table 1). The projection is identical to the size of the 1999 crop. The U.S. average yield is projected at 37 bushels per acre, 2.6 bushels less than the average of a year ago and 4.4 bushels below the record yield of 1994 (Table 2). For the major soybean producing states, the largest year-over-year declines in average yield are projected for Indiana ( 9 bushels), Ohio ( 9 bushels), and Nebraska ( 8 bushels). Higher average yields are expected in lowa (2 bushels), Michigan ( 6 bushels), and Minnesota ( 7 bushels).

The USDA will release another projection of the size of the U.S. crop on November 12 and the final estimate on January 10. In recent years, the November forecast has been reasonably close to the October forecast. The difference over the past five years has ranged from 6 to 46 bushels. The difference between the October forecast and the January estimate has ranged from 5 to 53 million million bushels. The January estimate has been below the October forecast for each of the past four years. For the current year, harvest reports continue to reflect wide variations in average yield, making it difficult to form an expectation about likely changes in subsequent forecasts. For this analysis, we are using the October forecast of total production.

Stocks of soybeans at the end of the 2001-02 marketing year totaled 208 million bushels, about 13 million more than generally expected. The stocks figure validated the estimated size of the 2001 crop, suggesting that seed, feed and residual use of soybeans last year was at a normal level (Table 3).

If the crop is near the October forecast, the supply of U.S. soybeans for the current marketing year will total 2.865 billion bushels, 276 million bushels less than last year's supply and the smallest supply in five years (Table 4). Assuming that year end stocks of soybeans cannot be reduced below about 145 million bushels ( 5 percent of recent annual consumption), 2.72 billion bushels of soybeans will be available for use during the current marketing year. Use was well above that figure during each of the last two years, reaching a record 2.933 billion bushels in 2001-02.

## Domestic Crush Will Remain Large

With a slow rate of expansion in poultry production during the 2002-03 soybean meal marketing year (projected at 1.4 percent by USDA) and a modest decline in beef production (-2.4 percent) and pork production ( -0.8 percent), the domestic requirements for soybean meal should grow at a very slow rate during the current year. Some year-over-year decline in use might be expected in the last half of the marketing year when reductions in beef and pork production accelerate. Domestic soybean meal consumption has grown by 4.3 percent in each of the past two years. A growth of about 2 percent is expected during the current marketing year. At that rate, domestic use would reach 33.66 million tons (Table 5).

The world's growing appetite for soybean meal will be supplied by South America during the year ahead, if that crop is as large as advertised. The USDA projects that consumption of soybean meal in areas other than the U.S. and South America will increase by 5 percent, that South American exports will increase by 10 percent, and that U.S. exports will decline by 13 percent, to 6.6 million tons. U.S. imports of soybean meal are projected to grow from 110,000 tons last year to 240,000 tons during the current year. Based on these projections, the U.S. will need to produce 39.935 million tons of soybean meal during the current marketing year. The required crush to produce that amount of meal depends on the average yield of meal per bushel of soybeans. The average yield has been relatively large the past three years, averaging between 47.6 and 48 pounds. With a yield of 47.6 pounds, crush would need to total 1.678 billion bushels to meet the expected market for soybean meal.

If 1.678 billion bushels of soybeans are crushed, soybean oil production will total 18.458 billion to 18.96 billion pounds, depending on average yield of oil per bushel of soybeans. An estimate of 18.8 billion pounds is used here. Based on the USDA's projection of use of 19.75 billion pounds during the current marketing year, stocks of oil would be reduced to about 1.5 billion pounds by the end of the marketing year (Table 6).

## Exports Will Be Lower

If the U.S. crushes 1.678 billion bushels of soybeans during the current year, and if year ending stocks must be a minimum of about 145 million bushels, then only 877 million bushels will be available for export during the current marketing year. The USDA projects exports at 850 million bushels, 21 percent less than exports during the 2001-02 marketing year. Such a large reduction in use of U.S. soybeans can be accomplished without sharply higher prices only if South America expands production in 2003. The USDA currently projects the 2002-03 South American crop at 3.039 billion bushels, 243 million larger than the 2001-02 harvest (Table 7). That increase is almost identical to the reduction in the U.S. crop this year. Production in China is expected to be 13 million bushels larger this year, as is production in all other countries. The largest increase in South America is expected in Brazil, reflecting a 7 percent increase in area and a 3 percent increase in the average yield (Table 8). Even with a large increase in South American soybean production, total oilseed production outside of the U.S. during the current marketing year is expected to grow by only 1.2 percent (Table 9). Of the major oilseed crops other than soybeans, only sunflower seed production is expected to expand.

Smaller oilseed crops around the world and a slow expansion in palm oil production (2 percent) increases the importance of the size of the 2002-03 South American soybean crop. That crop is being planted with some early reports of adverse weather conditions in some areas of Brazil - dry to the north and wet to the south. Reportedly, this pattern is typical of an El-Nino weather system. If weather adversity continues, the market will likely begin to scale back the expectations of the size of the Brazilian crop. A smaller crop means that higher prices would be required to ration supplies.

Six weeks into the 2002-03 U.S. soybean marketing year finds export inspections running about 18 percent behind the pace of a year ago. Unshipped sales as of October 10 were 13 percent smaller than outstanding sales of a year ago. Almost all of the decline is in sales to the European Union. Sales to China are large, running about 60 percent larger than sales of a year ago. However, the current Chinese policy on importing GMO products is scheduled to expire in December and importers are being told they will have to renew authorization for importing GMO products. This creates some confusion about potential soybean exports to China.

For now, we are using the USDA's export projection of 850 million bushels, but recognize that many key factors impacting total use and the mix of exports and domestic crush are still unfolding. Unless the 2002 U.S. crop is larger than currently projected, the use of U.S. soybeans for all purposes will have to decline during the current marketing year. Whether higher prices will be required to force the decline is still not clear.

## 2003 Production Prospects

With U.S. and world inventories of wheat, feed grains, and soybeans at low levels, there is a need for increased production of all major crops in 2003. A return to trend yields in the U.S. would contribute to that increase, but there may also be a need to expand acreage of the major crops. The USDA is expected to reveal larger acreage of winter wheat in the U.S. in the January 10 report. At current price levels for the 2003 crops of corn and soybeans, U.S. producers might also expand corn acreage in 2003 and reduce soybean acreage for the third consecutive year. It would then be left to South America to continue to expand soybean acreage.

## Price Prospects

Prospects for the 2002-03 marketing year average price are far from settled. The smaller harvest in the U.S. in 2002, the shaky start to the South American planting season, uncertainty about U.S. acreage in 2003, and mixed signals about Chinese demand suggest that soybean prices will remain fairly volatile and could move significantly in either direction over the next 9 months.

November 2002 soybean futures established a contract high of $\$ 5.91$ on September 11, 2002, traded to a low of $\$ 5.2225$ on October 9 , and moved back to near $\$ 5.50$ by mid-October. The average spot cash price of soybeans in central Illinois peaked at $\$ 5.94$ on August 15, declined to $\$ 5.01$ on October 9 , and recovered to $\$ 5.32$ on October 17. Since harvest started in midSeptember, the average cash price has traded in a range of about $\$ .65$ per bushel. At the middle of October, the average cash price was about $\$ 1.15$ per bushel higher than on the same date last year. Most all of that increase was accounted for by higher soybean oil prices. At $\$ .203$ per pound, the crude oil price in central Illinois was 40 percent above the price at the same time last year. At $\$ 167$ per ton, the price of 48 percent meal in central Illinois (rail basis) was only about 3 percent higher than on the same date last year.

For the 2002-03 marketing year, current expectations for supply and demand fundamentals project to a season's average price of $\$ 175$ per ton for soybean meal, $\$ .21$ per pound for soybean oil, and $\$ 5.45$ for the farm price of soybeans. In mid-October the markets for all three commodities reflected season's average prices slightly below the projected averages.

Marketing decisions for the 2002 crop are complicated by mixed market signals. On one hand, the lack of carry in the price structure offers little return for storing the crop. On the other hand, the small U.S. crop and uncertainty about the upcoming South American crop suggest that there is potential for higher prices. On the surface, this combination suggests that cash soybeans should be sold on a basis contract or sold in the spot market and replaced with futures (or perhaps call options). However, none of these other "ownership" strategies (other than call options) offer protection from declining prices. Maintaining ownership of cash soybeans provides downside risk protection in the form of a loan deficiency payment or marketing loan gain. With cash prices just a few cents above the loan rate in many areas, placing unpriced soybeans in storage and under loan is an attractive strategy (particularly if on-farm facilities are available) even though there is little carry in the market. If weather problems in South America fail to generate higher prices this winter, a second opportunity could be generated by crop concerns in the U.S. in 2003. If prices do not move higher, the net price will be the loan rate minus storage costs.
The price for the 2003 crop is currently below the loan rate. With so much uncertainty about production and demand over the next year, there seems to be little urgency to price that crop.

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Table 1. United States Soybean Production Estimates








|  | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| million bushels |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| August 1 | 30.3 | 27.4 | 30.2 | 32.3 | 29.7 | 30.5 | 31.5 | 32.9 | 34.7 | 26.0 | 32.3 | 32.5 | 31.8 | 35.8 | 33.8 | 37.6 | 36.4 | 36.3 | 39.5 | 39.5 | 39.2 | 40.7 | 38.7 | 36.5 |
| September 1 | 30.9 | 27.0 | 31.2 | 32.6 | 24.9 | 30.3 | 33.2 | 33.1 | 34.0 | 25.9 | 32.0 | 32.4 | 31.0 | 35.9 | 34.0 | 38.2 | 37.0 | 35.8 | 39.3 | 40.6 | 37.9 | 39.5 | 38.2 | 37.0 |
| October 1 | 31.5 | 26.0 | 31.5 | 32.4 | 24.7 | 29.5 | 33.9 | 33.3 | 34.2 | 26.4 | 32.6 | 32.3 | 33.0 | 36.3 | 33.7 | 40.5 | 35.5 | 37.0 | 39.0 | 38.7 | 37.0 | 38.7 | 39.2 | 37.0 |
| November 1 | 31.8 | 26.5 | 31.0 | 32.4 | 25.0 | 28.5 | 34.2 | 33.8 | 34.1 | 26.6 | 32.8 | 33.7 | 33.5 | 37.3 | 32.7 | 41.5 | 35.4 | 37.9 | 39.2 | 38.6 | 36.7 | 38.0 | 39.4 |  |
| January 1 | 32.2 | 26.8 | 30.4 | 32.2 | 25.7 | 28.2 | 34.1 | 33.8 | 33.7 | 26.8 | 32.4 | 34.0 | 34.3 | 37.6 | 32.0 | 41.9 | 34.9 | 37.6 | 39.0 | 38.9 | 36.5 | 38.1 | 39.6 |  |
| FINAL | 32.1 | 26.5 | 30.1 | 31.5 | 26.2 | 28.1 | 34.1 | 33.3 | 33.9 | 27.0 | 32.3 | 34.1 | 34.2 | 37.6 | 32.6 | 41.4 | 35.3 | 37.6 | 38.9 | 38.9 | 36.6 | 38.1 |  |  |

Table 3. Soybean Quarterly Balance Sheet

|  | 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 | 2001-02 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| September 1 stocks | 254.5 | 344.6 | 175.7 | 316.1 | 536.4 | 436.4 | 302.5 | 182.0 | 239.1 | 329.0 | 278.4 | 292.3 | 209.1 | 334.8 | 183.5 | 131.8 | 199.8 | 348.5 | 290.2 | 247.7 |
| Production | 2,190.3 | 1,635.8 | 1,860.9 | 2,099.1 | 1,942.6 | 1,937.7 | 1,548.8 | 1,923.8 | 1,925.9 | 1,986.6 | 2,190.4 | 1,869.7 | 2,514.9 | 2,174.3 | 2,380.3 | 2,688.8 | 2,741.0 | 2,653.8 | 2,757.8 | 2,890.6 |
| TOTAL | 2,444.8 | 1,980.4 | 2,036.6 | 2,415.2 | 2,479.0 | 2,374.1 | 1,855.3 | 2,108.8 | 2,167.0 | 2,319.6 | 2,470.8 | 2,167.0 | 2,730.0 | 2,514.1 | 2,572.8 | 2,825.6 | 2,943.8 | 3,006.3 | 3,052.0 | 3,143.3 |
| September-November |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Crush | 284.2 | 269.6 | 253.7 | 267.5 | 295.8 | 293.4 | 275.4 | 273.0 | 304.1 | 322.0 | 328.2 | 329.6 | 346.2 | 351.4 | 360.6 | 395.8 | 409.3 | 426.7 | 420.9 | 427.7 |
| Export | 245.9 | 190.6 | 153.4 | 166.5 | 216.5 | 260.8 | 138.3 | 168.5 | 120.1 | 167.1 | 235.9 | 176.0 | 230.9 | 233.6 | 289.7 | 365.3 | 268.5 | 297.8 | 315.5 | 348.3 |
| Seed, residual | -36.2 | 48.5 | 14.8 | 21.5 | 10.1 | 64.6 | 74.8 | 56.6 | 58.8 | 51.5 | 70.7 | 79.8 | 50.9 | 95.7 | 97.4 | 66.9 | 78.5 | 98.9 | 75.6 | 89.7 |
| TOTAL | 493.9 | 508.7 | 421.9 | 455.4 | 522.4 | 618.8 | 488.5 | 498.1 | 483.0 | 540.6 | 634.8 | 585.4 | 628.0 | 681.7 | 747.7 | 826.2 | 758.8 | 823.4 | 812.0 | 865.7 |
| December 1 stocks | 1,950.9 | 1,471.7 | 1,614.7 | 1,959.8 | 1,956.6 | 1,755.3 | 1,366.8 | 1,610.7 | 1,684.0 | 1,779.0 | 1,836.0 | 1,573.6 | 2,102.0 | 1,833.4 | 1,825.1 | 1,999.4 | 2,186.0 | 2,182.9 | 2,240.0 | 2,275.6 |
| Crush | 314.9 | 262.5 | 276.4 | 281.9 | 320.1 | 317.3 | 286.3 | 304.3 | 301.4 | 323.1 | 335.2 | 327.2 | 371.8 | 359.0 | 400.7 | 443.1 | 408.6 | 408.1 | 417.9 | 446.6 |
| Export | 263.6 | 234.6 | 230.2 | 270.9 | 233.7 | 258.9 | 197.0 | 217.0 | 179.7 | 259.6 | 255.9 | 212.7 | 283.5 | 278.7 | 333.1 | 306.4 | 243.1 | 315.4 | 338.4 | 422.8 |
| Seed, residual | 26.6 | 18.8 | 47.0 | 35.7 | 63.8 | 33.0 | -6.7 | 33.9 | 12.8 | 19.6 | 29.3 | 12.1 | 76.5 | 5.3 | 35.5 | 46.9 | 77.0 | 63.2 | 79.8 | 70.2 |
| TOTAL | 605.1 | 515.9 | 553.6 | 588.5 | 617.6 | 609.2 | 476.6 | 555.2 | 493.9 | 602.3 | 620.4 | 552.0 | 731.8 | 643.0 | 769.3 | 796.5 | 728.7 | 786.7 | 836.1 | 939.6 |
| March 1 stocks | 1,345.8 | 955.8 | 1,061.1 | 1,371.3 | 1,339.0 | 1,146.1 | 890.2 | 1,055.5 | 1,190.1 | 1,177.3 | 1,215.6 | 1,021.6 | 1,370.2 | 1,190.4 | 1,055.8 | 1,202.9 | 1,457.3 | 1,396.0 | 1,403.9 | 1,336.0 |
| Crush | 260.1 | 240.0 | 258.2 | 262.3 | 297.2 | 308.3 | 270.1 | 290.7 | 295.5 | 304.0 | 325.4 | 320.4 | 361.7 | 334.0 | 355.7 | 404.9 | 396.4 | 373.9 | 405.4 | 429.6 |
| Export | 216.2 | 204.2 | 153.4 | 226.4 | 159.3 | 185.0 | 135.5 | 153.2 | 146.9 | 148.2 | 186.7 | 120.6 | 216.6 | 188.5 | 165.9 | 120.0 | 161.9 | 205.8 | 220.8 | 150.0 |
| Seed, residual | 78.9 | 39.9 | 41.1 | 33.7 | 45.7 | -2.5 | 20.1 | 15.7 | 24.2 | 29.4 | 20.1 | 25.3 | 0.0 | 44.9 | 34.3 | 84.4 | 50.4 | 58.9 | 69.5 | 71.5 |
| TOTAL | 555.2 | 484.1 | 452.7 | 522.4 | 502.2 | 490.8 | 425.7 | 459.6 | 466.6 | 481.6 | 532.2 | 466.3 | 578.3 | 567.4 | 555.9 | 609.2 | 608.7 | 621.8 | 695.7 | 651.1 |
| June 1 stocks | 790.6 | 471.7 | 608.4 | 848.9 | 836.8 | 655.3 | 464.5 | 595.9 | 723.5 | 695.7 | 683.4 | 555.3 | 791.9 | 622.8 | 499.9 | 593.7 | 848.6 | 774.4 | 708.2 | 684.9 |
| Crush | 248.8 | 210.6 | 242.1 | 241.1 | 265.5 | 255.5 | 225.8 | 278.4 | 285.9 | 304.6 | 290.0 | 298.4 | 325.5 | 324.9 | 318.7 | 353.2 | 375.4 | 370.1 | 395.8 | 395.0 |
| Export | 179.5 | 113.6 | 61.1 | 76.3 | 147.4 | 97.6 | 56.2 | 84.2 | 110.4 | 109.0 | 91.0 | 79.7 | 107.0 | 150.5 | 93.0 | 78.7 | 127.5 | 171.6 | 121.3 | 143.9 |
| Seed, residual | 17.7 | -28.2 | -10.9 | -4.9 | -12.5 | 0.3 | 0.5 | -5.8 | -1.8 | 3.1 | 10.1 | -31.9 | 24.6 | -35.2 | -43.6 | -37.9 | -1.3 | -55.0 | -56.6 | -62.2 |
| TOTAL | 446.0 | 296.0 | 292.3 | 312.5 | 400.4 | 352.8 | 282.5 | 356.8 | 394.5 | 416.7 | 391.1 | 346.2 | 457.1 | 439.6 | 368.1 | 393.9 | 501.6 | 486.7 | 460.5 | 476.7 |
| September 1 stocks | 344.6 | 175.7 | 316.1 | 536.4 | 436.4 | 302.5 | 182.0 | 239.1 | 329.0 | 278.4 | 292.3 | 209.1 | 334.8 | 183.5 | 131.8 | 199.8 | 348.5 | 290.2 | 247.7 | 208.2 |
| Annual |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Crush | 1,108.0 | 982.7 | 1,030.4 | 1,052.8 | 1,178.7 | 1,174.5 | 1,057.6 | 1,146.4 | 1,186.9 | 1,253.7 | 1,278.8 | 1,275.6 | 1,405.2 | 1,369.4 | 1,435.7 | 1,595.1 | 1,589.7 | 1,578.8 | 1,650.0 | 1,698.9 |
| Export | 905.2 | 743.0 | 598.1 | 740.1 | 756.9 | 801.7 | 527.0 | 622.9 | 557.1 | 683.9 | 769.5 | 589.0 | 838.0 | 851.2 | 881.7 | 870.4 | 801.0 | 973.8 | 996.0 | 1,065.0 |
| Seed, residual | 87.0 | 79.0 | 92.0 | 85.9 | 107.0 | 95.4 | 88.7 | 100.4 | 94.0 | 103.6 | 130.2 | 85.3 | 152.0 | 110.4 | 123.6 | 160.3 | 204.6 | 166.2 | 168.3 | 169.2 |
| TOTAL | 2,100.2 | 1,804.7 | 1,720.5 | 1,878.8 | 2,042.6 | 2,071.6 | 1,673.3 | 1,869.7 | 1,838.0 | 2,041.2 | 2,178.5 | 1,949.9 | 2,397.0 | 2,330.9 | 2,441.0 | 2,625.8 | 2,595.3 | 2,718.8 | 2,803.10 | 2933.1 |

Table 4. Soybean Balance Sheet -- Years Beginning September 1


Table 5. Soybean Meal Balance Sheet -- Years Beginning October 1

|  | 1989-90 | 1990-91 | 1991-92 | 1992-93 | 1993-94 | 1994-95 | 1995-96 | 1996-97 | 1997-98 | 1998-99 | 1999-00 | 2000-01 | 2001-02 | 2002-03 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | thousand tons |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Beginning stocks | 173 | 318 | 285 | 230 | 204 | 150 | 223 | 212 | 210 | 218 | 330 | 293 | 383 | 225 |
| Production | 27,719 | 28,325 | 29,831 | 30,364 | 30,514 | 33,270 | 32,527 | 34,210 | 38,176 | 37,792 | 37,591 | 39,385 | 40,332 | 39,935 |
| TOTAL ${ }^{\text {a }}$ | 27,982 | 28,688 | 30,183 | 30,687 | 30,788 | 33,483 | 32,825 | 34,524 | 38,443 | 38,109 | 37,970 | 39,729 | 40,825 | 40,400 |
| Domestic | 22,291 | 22,934 | 23,007 | 24,251 | 25,283 | 26,542 | 26,611 | 27,320 | 28,895 | 30,657 | 30,345 | 31,643 | 33,000 | 33,600 |
| Exports | 5,319 | 5,469 | 6,946 | 6,232 | 5,356 | 6,717 | 6,002 | 6,994 | 9,330 | 7,122 | 7,332 | 7,703 | 7,600 | 6,600 |
| TOTAL | 27,610 | 28,403 | 29,953 | 30,483 | 30,639 | 33,260 | 32,613 | 34,314 | 38,225 | 37,779 | 37,678 | 39,346 | 40,600 | 40,200 |
| Ending stocks | 318 | 285 | 230 | 204 | 150 | 223 | 212 | 210 | 218 | 330 | 293 | 383 | 225 | 200 |
| Price ${ }^{\text {b }}$ | \$186.48 | \$181.38 | \$189.21 | \$193.75 | \$192.86 | \$162.55 | \$235.92 | \$270.90 | \$185.28 | \$138.55 | \$167.70 | \$173.60 | \$168.00 | \$175.00 |

${ }^{\text {a }}$ Includes imports
${ }^{\mathrm{b}}$ Bulk, Decatur, Illinois 48\%

Table 6. Soybean Oil Balance Sheet -- Years Beginning October 1


| million pounds |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Beginning stocks | 1,715 | 1,305 | 1,786 | 2,239 | 1,555 | 1,103 | 1,137 | 2,015 | 1,520 | 1,382 | 1,520 | 1,995 | 2,877 | 2,385 |
| Production | 13,003 | 13,406 | 14,346 | 13,778 | 13,951 | 15,613 | 15,240 | 15,752 | 18,143 | 18,081 | 17,825 | 18,420 | 18,865 | 18,800 |
| TOTAL ${ }^{\text {a }}$ | 14,740 | 14,728 | 16,132 | 16,027 | 15,574 | 16,733 | 16,472 | 17,821 | 19,723 | 19,546 | 19,427 | 20,488 | 21,785 | 21,250 |
| Domestic | 12,082 | 12,163 | 12,246 | 13,053 | 12,941 | 12,916 | 13,465 | 14,263 | 15,262 | 15,655 | 16,056 | 16,210 | 16,900 | 17,350 |
| Exports | 1,353 | 779 | 1,647 | 1,419 | 1,529 | 2,680 | 992 | 2,037 | 3,079 | 2,372 | 1,376 | 1,401 | 2,500 | 2,400 |
| TOTAL | 13,435 | 12,942 | 13,893 | 14,472 | 14,471 | 15,596 | 14,457 | 16,300 | 18,341 | 18,027 | 17,432 | 17,611 | 19,400 | 19,750 |
| Ending stocks | 1,305 | 1,786 | 2,239 | 1,555 | 1,103 | 1,137 | 2,015 | 1,520 | 1,382 | 1,520 | 1,995 | 2,877 | 2,385 | 1,500 |
| Average Price ${ }^{\text {b }}$ | 22.3 ¢ | 21.0¢ | 19.14 | 21.4¢ | 27.14 | 27.6¢ | 24.75¢ | 22.5¢ | 25.8¢ | 19.9¢ | 15.6¢ | 14.2¢ | 16.5¢ | 21.0¢ |

${ }^{\text {a }}$ Includes imports
${ }^{\text {b }}$ Bulk, Decatur, Illinois 44\%
${ }^{\text {c }}$ Projected

Table 7. Soybean Production by Country

| Year | United States | Brazil ${ }^{\text {a }}$ | Argentina ${ }^{\text {a }}$ | Paraguay ${ }^{\text {a }}$ | China | Other | World | All Foreign |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| million bushels |  |  |  |  |  |  |  |  |
| 1970 | 1,127 | 76 | 2 | 3 | 254 | 165 | 1,627 | 500 |
| 1971 | 1,176 | 135 | 3 | 4 | 290 | 126 | 1,734 | 558 |
| 1972 | 1,283 | 184 | 10 | 4 | 320 | 66 | 1,867 | 584 |
| 1973 | 1,547 | 289 | 18 | 7 | 367 | 64 | 2,292 | 745 |
| 1974 | 1,215 | 363 | 18 | 8 | 349 | 54 | 2,007 | 792 |
| 1975 | 1,547 | 413 | 26 | 10 | 367 | 46 | 2,409 | 862 |
| 1976 | 1,288 | 460 | 51 | 14 | 242 | 128 | 2,183 | 895 |
| 1977 | 1,762 | 350 | 99 | 12 | 266 | 154 | 2,643 | 881 |
| 1978 | 1,870 | 557 | 136 | 20 | 278 | 167 | 2,847 | 977 |
| 1979 | 2,261 | 376 | 132 | 21 | 274 | 191 | 3,255 | 994 |
| 1980 | 1,798 | 558 | 129 | 22 | 292 | 176 | 2,975 | 1,177 |
| 1981 | 1,989 | 471 | 152 | 22 | 342 | 186 | 3,162 | 1,173 |
| 1982 | 2,190 | 542 | 154 | 19 | 332 | 200 | 3,437 | 1,247 |
| 1983 | 1,636 | 571 | 257 | 20 | 359 | 213 | 3,056 | 1,420 |
| 1984 | 1,861 | 672 | 248 | 35 | 356 | 248 | 3,421 | 1,561 |
| 1985 | 2,099 | 518 | 268 | 22 | 386 | 272 | 3,565 | 1,466 |
| 1986 | 1,943 | 636 | 257 | 35 | 427 | 303 | 3,601 | 1,658 |
| 1987 | 1,938 | 662 | 356 | 40 | 457 | 359 | 3,812 | 1,874 |
| 1988 | 1,549 | 852 | 235 | 60 | 428 | 387 | 3,506 | 1,957 |
| 1989 | 1,924 | 747 | 395 | 58 | 376 | 445 | 3,945 | 2,020 |
| 1990 | 1,926 | 579 | 423 | 48 | 404 | 446 | 3,826 | 1,900 |
| 1991 | 1,987 | 709 | 410 | 48 | 357 | 435 | 3,946 | 1,959 |
| 1992 | 2,188 | 827 | 417 | 64 | 378 | 434 | 4,308 | 2,120 |
| 1993 | 1,871 | 908 | 456 | 66 | 563 | 454 | 4,318 | 2,447 |
| 1994 | 2,517 | 952 | 459 | 81 | 588 | 460 | 5,057 | 2,540 |
| 1995 | 2,177 | 887 | 457 | 88 | 496 | 487 | 4,591 | 2,415 |
| 1996 | 2,380 | 1,003 | 412 | 102 | 486 | 474 | 4,857 | 2,477 |
| 1997 | 2,689 | 1,194 | 717 | 110 | 551 | 545 | 5,806 | 3,117 |
| 1998 | 2,741 | 1,150 | 735 | 112 | 557 | 577 | 5,872 | 3,131 |
| 1999 | 2,654 | 1,257 | 779 | 107 | 525 | 527 | 5,875 | 3,221 |
| 2000 | 2,758 | 1,433 | 1,021 | 129 | 566 | 527 | 6,434 | 3,676 |
| 2001 | 2,891 | 1,598 | 1,084 | 114 | 566 | 500 | 6,753 | 3,862 |
| 2002 | 2,654 | 1,764 | 1,139 | 136 | 573 | 513 | 6,779 | 4,125 |

[^0]Table 8. South American Soybean Area, Yield and, Production, 1988 to Date

| Year | Brazil |  |  | Argentina |  |  | Paraguay |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Area | Yield | Production | Area | Yield | Production | Area | Yield | Production |
|  | mil. ha. | t/ha. | mil.t | mil. ha. | t/ha. | mil. t. | mil. ha. | t/ha. | mil. t. |
| 1988-89 | 12.15 | 1.94 | 23.60 | 4.00 | 1.63 | 6.50 | 0.85 | 1.90 | 1.62 |
| 1989-90 | 11.55 | 1.76 | 20.34 | 4.95 | 2.17 | 10.75 | 0.98 | 1.61 | 1.58 |
| 1990-91 | 9.75 | 1.62 | 15.75 | 4.75 | 2.42 | 11.50 | 0.89 | 1.46 | 1.30 |
| 1991-92 | 9.70 | 1.99 | 19.30 | 4.80 | 2.32 | 11.15 | 0.90 | 1.44 | 1.30 |
| 1992-93 | 10.63 | 2.12 | 22.50 | 4.90 | 2.32 | 11.35 | 0.98 | 1.79 | 1.75 |
| 1993-94 | 11.44 | 2.16 | 24.70 | 5.40 | 2.30 | 12.40 | 1.05 | 1.71 | 1.80 |
| 1994-95 | 11.68 | 2.22 | 25.90 | 5.70 | 2.19 | 12.50 | 1.10 | 2.00 | 2.20 |
| 1995-96 | 10.95 | 2.21 | 24.15 | 5.98 | 2.08 | 12.43 | 1.10 | 2.18 | 2.40 |
| 1996-97 | 11.80 | 2.27 | 26.80 | 6.26 | 1.81 | 11.20 | 1.20 | 2.31 | 2.77 |
| 1997-98 | 13.00 | 2.50 | 32.50 | 6.95 | 2.80 | 19.50 | 1.20 | 2.49 | 2.99 |
| 1998-99 | 12.90 | 2.43 | 31.30 | 8.17 | 2.45 | 20.00 | 1.20 | 2.54 | 3.05 |
| 1999-00 | 13.60 | 2.51 | 34.20 | 8.58 | 2.47 | 21.20 | 1.15 | 2.52 | 2.90 |
| 2000-01 | 13.93 | 2.80 | 39.00 | 10.40 | 2.67 | 27.80 | 1.35 | 2.61 | 3.52 |
| 2001-02 | 16.35 | 2.66 | 43.50 | 11.30 | 2.61 | 29.50 | 1.42 | 2.18 | 3.10 |
| 2002-03 | 17.50 | 2.74 | 48.00 | 12.00 | 2.58 | 31.00 | 1.45 | 2.55 | 3.70 |

Source: USDA, FAS

Table 9. World Oilseed and Soybean Production

|  | Major Oilseeds |  |  | Soybeans |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | United States | Ex-United Stated | Total | United States | Ex-United States | Total |
|  |  | million metric tons |  |  |  |  |
| $1977-78$ | 56.5 | 93.7 | 150.20 | 47.95 | 23.98 | 71.93 |
| $1978-79$ | 58.6 | 92.0 | 150.60 | 50.86 | 26.62 | 77.48 |
| $1979-80$ | 72.4 | 98.1 | 170.50 | 61.72 | 31.79 | 93.51 |
| $1980-81$ | 55.8 | 99.8 | 155.60 | 48.77 | 32.20 | 80.97 |
| $1981-82$ | 64.0 | 105.5 | 169.50 | 54.13 | 31.93 | 86.06 |
| $1982-83$ | 68.2 | 110.1 | 178.30 | 59.61 | 33.96 | 93.57 |
| $1983-84$ | 50.4 | 115.1 | 165.50 | 44.52 | 38.64 | 84.16 |
| $1984-85$ | 59.2 | 131.7 | 191.10 | 50.64 | 42.50 | 93.14 |
| $1985-86$ | 65.4 | 130.8 | 196.20 | 57.13 | 39.92 | 97.05 |
| $1986-87$ | 59.4 | 135.0 | 194.40 | 52.87 | 45.21 | 98.08 |
| $1987-88$ | 60.6 | 150.0 | 210.60 | 52.75 | 51.06 | 103.81 |
| $1988-89$ | 50.3 | 153.9 | 204.20 | 42.15 | 53.49 | 95.64 |
| $1989-90$ | 59.3 | 153.1 | 212.40 | 52.35 | 55.02 | 107.37 |
| $1990-91$ | 60.6 | 155.1 | 215.70 | 52.42 | 51.57 | 103.99 |
| $1991-92$ | 64.3 | 160.0 | 224.30 | 54.07 | 53.31 | 107.38 |
| $1992-93$ | 68.4 | 158.9 | 227.40 | 59.61 | 57.69 | 117.30 |
| $1993-94$ | 59.5 | 168.4 | 227.90 | 50.92 | 66.58 | 117.50 |
| $1994-95$ | 79.7 | 181.2 | 260.90 | 68.49 | 69.14 | 137.63 |
| $1995-96$ | 69.1 | 190.6 | 259.70 | 59.24 | 65.72 | 124.96 |
| $1996-97$ | 74.8 | 187.0 | 261.80 | 64.78 | 67.40 | 132.18 |
| $1997-98$ | 83.1 | 203.9 | 287.00 | 73.18 | 84.90 | 158.07 |
| $1998-99$ | 84.4 | 210.3 | 294.70 | 74.60 | 85.21 | 159.81 |
| $1999-00$ | 82.3 | 221.1 | 303.40 | 72.22 | 87.68 | 159.90 |
| $2000-01$ | 84.9 | 228.5 | 313.40 | 75.06 | 100.04 | 175.10 |
| $2001-02$ | 89.8 | 233.3 | 323.10 | 78.67 | 105.11 | 183.78 |
| $2002-03$ | 81.9 | 236.0 | 317.90 | 72.23 | 112.26 | 184.49 |

${ }^{1}$ WASDE Oct. 2002 and earlier.

Table 10. Soybean Planting Intentions, Actual Plantings, and Acres Harvested

| Year | January <br> Intentions | Mar./April <br> Intentions | June/July <br> Intentions | Actual | Harvested <br> Acreage |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  |  | million acres |  |  |
| 1975 | 57.5 | 56.6 | 54.6 | 54.6 | 53.8 |
| 1976 | 50.9 | 49.3 | 49.0 | 50.3 | 49.4 |
| 1977 | 53.1 | 55.7 | 59.0 | 59.0 | 57.6 |
| 1978 | 63.9 | 63.7 | 64.0 | 64.7 | 63.3 |
| 1979 | 66.3 | 68.8 | 71.6 | 71.4 | 70.3 |
| 1980 | 71.6 | 71.3 | 70.3 | 69.9 | 67.8 |
| 1981 | --- | 69.8 | 68.5 | 67.5 | 66.2 |
| 1982 | $69.5^{\text {a }}$ | --- | 72.2 | 70.9 | 69.4 |
| 1983 | $68.8^{\text {a }}$ | $65.8^{\text {b }}$ | 63.3 | 63.8 | 62.5 |
| 1984 | $65.2^{\text {a }}$ | --- | 68.0 | 67.8 | 66.1 |
| 1985 | $64.4^{\text {a }}$ | --- | 63.3 | 63.1 | 61.6 |
| 1886 | --- | 62.0 | 61.8 | 60.4 | 58.3 |
| 1987 | --- | 56.9 | 58.7 | 58.180 | 57.172 |
| 1988 | --- | 58.0 | 58.5 | 58.840 | 57.373 |
| 1989 | --- | 61.7 | 61.3 | 60.820 | 59.282 |
| 1990 |  | 59.42 | 58.05 | 57.795 | 56.283 |
| 1991 | 58.5 | 57.12 | 59.78 | 59.180 | 58.169 |
| 1992 |  | 5.42 | 59.03 | 59.180 | 58.233 |
| 1993 |  | 59.30 | 61.58 | 60.085 | 57.307 |
| 1994 |  | 61.12 | 61.78 | 61.620 | 60.809 |
| 1995 |  | 61.45 | 63.105 | 62.495 | 61.544 |
| 1996 |  | 62.478 | 63.895 | 64.195 | 63.349 |
| 1997 |  | 68.800 | 70.850 | 70.005 | 69.110 |
| 1998 |  | 72.000 | 72.720 | 72.025 | 70.441 |
| 1999 |  | 73.105 | 74.205 | 73.730 | 72.446 |
| 2000 |  | 74.871 | 74.501 | 74.266 | 72.408 |
| 2001 |  | 76.657 | 75.416 | 74.105 | 72.975 |
| 2002 |  | 72.966 | 72.993 |  | 71.799 |
| F |  |  |  |  |  |

${ }^{\text {a }}$ February 1
${ }^{\text {b }}$ May 1

Table 11. Planted Acres of Soybeans by Region

|  | Western Corn Belt ${ }^{\text {a }}$ |  | Eastern Corn Belt ${ }^{\text {b }}$ |  | Mid-South ${ }^{\text {c }}$ |  | Southeast ${ }^{\text {d }}$ |  | East Coast ${ }^{\text {e }}$ |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Region | 000 acres | \% | 000 acres | \% | 000 acres | \% | 000 acres | \% | 000 acres | \% | 000 acres | \% |
| 1976 | 16,145 | 32.1 | 14,530 | 28.9 | 13,630 | 27.1 | 4,799 | 9.6 | 1,122 | 2.3 | 50,226 | 100.0 |
| 1979 | 23,370 | 32.7 | 19,620 | 27.5 | 18,470 | 25.9 | 8,360 | 11.7 | 1,591 | 2.2 | 71,411 | 100.0 |
| 1986 | 24,875 | 41.2 | 18,300 | 30.3 | 10,995 | 18.2 | 4,680 | 7.8 | 1,535 | 2.5 | 60,385 | 100.0 |
| 1987 | 24,120 | 41.5 | 18,580 | 31.9 | 10,330 | 17.8 | 3,675 | 6.3 | 1,475 | 2.5 | 58,180 | 100.0 |
| 1988 | 24,310 | 41.3 | 18,680 | 31.7 | 10,460 | 17.8 | 3,810 | 6.5 | 1,580 | 2.7 | 58,840 | 100.0 |
| 1989 | 24,790 | 40.8 | 19,020 | 31.3 | 10,750 | 17.7 | 4,460 | 7.3 | 1,800 | 2.9 | 60,820 | 100.0 |
| 1990 | 23,750 | 41.1 | 18,490 | 32.0 | 10,270 | 17.2 | 3,650 | 6.3 | 1,635 | 2.8 | 57,795 | 100.0 |
| 1991 | 26,035 | 44.0 | 19,420 | 32.8 | 8,990 | 15.2 | 3,005 | 5.1 | 1,730 | 2.9 | 59,180 | 100.0 |
| 1992 | 25,400 | 42.9 | 20,000 | 33.8 | 8,980 | 15.2 | 2,915 | 5.2 | 1,715 | 2.9 | 59,180 | 100.0 |
| 1993 | 25,300 | 42.1 | 20,410 | 34.0 | 9,690 | 16.1 | 2,915 | 4.9 | 1,770 | 2.9 | 60,085 | 100.0 |
| 1994 | 27,220 | 44.1 | 20,510 | 33.3 | 9,220 | 15.0 | 2,875 | 4.7 | 1,795 | 2.9 | 61,620 | 100.0 |
| 1995 | 28,210 | 45.1 | 21,130 | 33.8 | 9,130 | 14.7 | 2,290 | 3.6 | 1,735 | 2.8 | 62,495 | 100.0 |
| 1996 | 28,250 | 44.0 | 22,370 | 34.8 | 9,390 | 14.6 | 2,565 | 4.0 | 1,620 | 2.5 | 64,195 | 100.0 |
| 1997 | 32,450 | 46.4 | 22,610 | 32.3 | 10,390 | 14.8 | 2,777 | 4.0 | 1,778 | 2.5 | 70,005 | 100.0 |
| 1998 | 33,700 | 46.8 | 23,650 | 32.8 | 10,180 | 14.1 | 2,690 | 3.8 | 1,805 | 2.5 | 72,025 | 100.0 |
| 1999 | 35,800 | 48.5 | 24,100 | 32.7 | 9,700 | 13.2 | 2,360 | 3.2 | 1,770 | 2.4 | 73,730 | 100.0 |
| 2000 | 37,050 | 49.9 | 24,050 | 32.4 | 9,070 | 12.2 | 2,230 | 3.0 | 1,926 | 2.6 | 74,266 | 100.0 |
| 2001 | 37,700 | 50.9 | 24,650 | 33.3 | 7,695 | 10.4 | 2,145 | 2.9 | 1,915 | 2.5 | 74,105 | 100.0 |
| 2002 | 36,750 | 50.3 | 24,150 | 33.1 | 8,170 | 11.2 | 2,140 | 2.9 | 1,833 | 2.5 | 73,043 | 100.0 |

[^1]
[^0]:    ${ }^{\mathrm{a}}$ Harvested in the spring of the following year.

[^1]:    ${ }^{\text {a }}$ Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
    ${ }^{\mathrm{b}}$ Illinois, Indiana, Michigan, Ohio, Wisconsin
    ${ }^{\text {c }}$ Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas
    ${ }^{d}$ Alabama, Florida, Georgia, North Carolina, South Carolina
    e Delaware, Maryland, New Jersey, New York, Pennsylvania, Virginia, West Virginia

