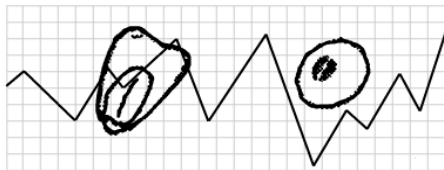




UNIVERSITY OF ILLINOIS
EXTENSION



Grain Price OUTLOOK

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CORN: BETTER DEMAND, PRODUCTION CONCERNS

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Summary

The USDA's March *Grain Stocks* report, released on March 31, confirmed a high rate of domestic corn use during the second quarter of the 1999-00 marketing year. Thirty weeks into the marketing year, corn exports are running about 6 percent ahead of last year's pace and as of March 23, unshipped sales were 3.5 percent larger than sales of a year ago. Year ending stocks will be adequate, but below the level of stocks at the beginning of the year.

The USDA's *Prospective Plantings* report, released on March 31, revealed producers intentions to plant about 77.9 million acres of corn in 2000, 450,000 more than planted in 1999. Widespread dry weather since late last summer raises concerns about the prospects for corn yields in 2000. Average yields of just 6 to 8 percent below trend would likely result in further reductions in U.S. and world stocks by the end of the 2000-01 marketing year. Severe dry weather would require a reduction in the current rate of corn consumption. Corn prices will work higher as long as dryness persists. December 2000 futures have found resistance near \$2.65, and would also find some resistance near the contract high just under \$2.80. The odds appear high that cash corn prices will move to the highest level since the summer of 1998, after languishing near the loan level since late summer 1998. The average price for the

2000-01 marketing year would be expected to move into the \$2.40 to \$2.60 range if the U.S. average yield is below trend in 2000. A return to more normal weather and improved yield prospects would likely push prices to near the \$2.00 mark.

Old Crop Consumption

Stocks of corn on March 1, 2000 were estimated at 5.606 billion bushels (Table 1). Assuming imports of about 5 million bushels during the quarter, the use of corn during the second quarter of the marketing year totaled 2.424 billion bushels. Use during the quarter was 65 million bushels above use of a year ago and the second highest ever for the quarter.

Through the first 5 month of the 1999-00 marketing year (September 1999 through January 2000) corn exports as reported in the USDA's weekly export inspection report were tracking those reported in the monthly Census Bureau reports. Assuming that was the case in February 2000 as well, exports during the first half of the marketing year were about 9 percent larger than exports during the same period last year. First quarter exports were 18 percent larger and second quarter exports were equal to those of last year, at 465 million bushels (Table 1). Last year was one of those unusual years when exports during the last half of the marketing year exceeded exports during the first half of the year. The margin was a very

large 150 million bushels. That was the largest margin of second half exports over first half exports since 1986-87.

The increase in exports this year, compared to last year, have been to Japan (4 percent), Egypt (46 percent), and Taiwan (26 percent). Shipments to other large customers are down. Exports to South Korea are off 35 percent and shipments to Mexico are down 19 percent. Those 5 countries have accounted for 67 percent of U.S. exports to date. As of March 23, unshipped sales of U.S. corn stood at 288 million bushels, 3.4 percent more than outstanding sales on the same date last year. Eighty percent of those sales were to Japan, Taiwan, South Korea, and Mexico. To reach the USDA projection of 1.95 billion bushels of exports for the year, shipments will need to average about 37 million bushels per week from April through August. New sales will have to be in the range of 25 million bushels per week. It is yet to be seen if rumors of animal health problems in parts of Asia will adversely affect U.S. corn exports. We are projecting corn exports for the year near USDA's current projection of 1.95 billion bushels (Table 2), 10 million less than projected in our January newsletter. There are some who believe exports will fall short of that projection.

Assuming that food and industrial use of corn is proceeding at the rate projected by the USDA, (4.3 percent above the rate of a year ago) use during the second quarter is estimated at 455 million bushels, 6.6 percent more than during the same period last year. Use for the year is projected at 1.9 billion bushels.

Based on the previous estimates, and second quarter corn imports of 5 million bushels, use of corn for feed and residual purposes totaled 1.504 billion bushels during the quarter. That is an increase of 2.5 percent over use during the same quarter last year, following a 4.2 percent increase in the first quarter. The increase is being fueled by increased broiler production (3.7 percent), more cattle in feed lots, and heavier feeding weights for cattle and hogs. The heavier feeding weights are at least partially driven by higher livestock prices and profit margins. Hog numbers are down

from those of a year ago and spring and summer farrowing intentions are down 4 percent and 2 percent, respectively. Cattle feed lot placements are expected to slow as the year progresses, due to reduced supplies of feeder cattle. Feeding weights of cattle and hogs will depend, to some extent, on profit margins.

Feed and residual use of corn during the first half of the 1999-00 marketing year was a record 3.72 billion bushels. In recent years of abundant supplies of low priced corn, feed and residual use during the first half of the marketing year has demonstrated a steady increase from 61.2 percent in 1992-93, to 63.2 percent in 1994-95 to 64.4 percent in 1997-98, and to 65.4 percent in 1998-99. This is a sharp contrast to the abundant supply, low priced years in the early 1980s when first half use accounted for about 56 percent of the annual feed and residual use of corn. Even in the lowest price year of recent history (1986-87), first half use was only 60 percent of the annual total. What should we expect this year?

With declining cattle and hog numbers and marginally higher feed prices, the feed use of corn should slow in the second half of the year. If use equals that of last year (1.902 billion bushels), use for the entire year will reach 4.622 billion bushels. That is 28 million below the current USDA projection and 4 million below our January projection. A 1 percent increase in use during the second half of the year is a reasonable expectation, bringing the marketing year total to 5.64 billion bushels (Table 2). One reason for the expected increase is that hog feeding profitability will likely remain strong, stimulating somewhat larger farrowings in the late spring and summer months. Based on this projection, use during the first half of the marketing year will account for 66 percent of the annual total.

Year ending stocks (September 1, 2000) are now projected at 1.749 billion bushels, about 40 million less than stocks at the beginning of the year. The USDA will update its projections of use and year-ending stocks in the monthly reports. Stocks may differ

somewhat from our current projection, but old crop supplies are fully adequate.

New Crop Prospects

Attention in the corn market for the next several months will be on prospects for the U.S. corn and other feed grain crops. The U.S. accounts for about 40 percent of world corn production (30 percent of feed grain production) and 60 to 65 percent of world corn exports (50 percent of feed grain exports). The size of the crop in the U.S. is the most important, but certainly not the only factor determining prices. For the spring and summer months, however, weather and crop progress dominates price expectations.

In the March 31 *Prospective Plantings* report, the USDA estimated 2000 corn planting intentions at 77.881 million acres (Table 3). Those intentions exceed last year's plantings by 450,000 acres, but are 2.284 million acres below the post Freedom to Farm high of 80.165 million acres in 1998. Compared to last year's acreage, corn planting intentions are up 300,000 acres in Illinois and South Dakota, up 100,000 acres in Iowa, and up 150,000 acres in Kansas. Acreage is expected to be down by 300,000 acres in Nebraska and 100,000 acres in Indiana, Minnesota, and Wisconsin (Table 4). Illinois and Kansas are the only two major corn producing states where 2000 intentions exceed actual plantings in 1998. The largest declines from 1998 are in Iowa (300,000), Minnesota (300,000), Nebraska (500,000), Texas (400,000), and Wisconsin (200,000).

There has been a tendency for actual planted acreage of corn to fall short of March intentions. That has been the pattern in each of the past 5 years, 8 of the past 10 years, and 11 of the past 15 years. Since 1996 (Freedom to Farm era), corn plantings have fallen short of intentions by an average of 994,000 acres, in a range of 616,000 (1998) to 1.88 million (1997). One might expect actual planted acreage near 77 million in 2000, with acreage harvested for grain near 70 million acres.

The U.S. average corn yield has varied considerably over time, including the last 12

years (Table 5). Average yields were near trend line value, or above, in 1992, 1994, 1996, 1997, 1998, and 1999. Yields were below trend in 1991 (dry weather), 1993 (flooding), and 1995 (dry weather). The last widespread drought was in 1988.

Dry weather significantly reduced 1999 corn yields in the northeast, Pennsylvania, Missouri, and parts of Ohio. A dry pattern has persisted over much of the corn belt since late last summer. Only recently has the extreme dry pattern in the southwest and southeast been interrupted by increased precipitation. The National Weather Service forecast through June shows prospects for below normal precipitation through much of the corn producing midwest. While there is not widespread concern about getting the 2000 crop planted and emerged, there is considerable concern about having adequate moisture to develop the crop normally. Differences of opinion about summer weather generally center around prospects for the LaNina weather pattern. Some forecasters expect LaNina to persist into the summer, resulting in a continuation of the dry pattern, while others forecast a weakening of the LaNina and more normal summer weather. The fate of the 2000 crop may remain uncertain well into the growing season.

If the 2000 growing season produces a trend line yield of about 134 bushels per acre, and harvested acreage is near 70 million acres; production would total 9.38 billion bushels, or about 57 million less than the 1999 harvest. With 70 million acres harvested, an average yield of 135.7 bushels would be required to produce a crop near the current rate of annual use of 9.5 billion bushels. If harvested acreage is near the 70.9 million implied by the *Prospective Plantings* report, the U.S. average yield would have to be 134 bushels per acre to produce a crop of 9.5 billion bushels. A 2000 yield near the average of 1991, 1993, and 1995 (107.6 bushels) would produce a crop of only 7.53 to 7.64 billion bushels, depending on harvested acreage. A yield near the 1988 average of 84.6 bushels, would produce a crop of only 5.92 to 6.0 billion bushels.

There are a wide array of possible production scenarios for 2000, depending on acreage and yield:

Average Yield	Harvested Acreage (million)			
	69	70	71	72
	billion bushels			
100	6.900	7.000	7.100	7.200
110	7.590	7.700	7.810	7.920
115	7.935	8.050	8.165	8.280
120	8.280	8.400	8.520	8.640
125	8.625	8.750	8.875	9.000
130	8.970	9.100	9.230	9.360
135	9.315	9.450	9.585	9.720
140	9.660	9.800	9.940	10.080

My expectation at this early date is that harvested acreage will fall between 70 and 71 million acres. Odds seem to favor an average yield of trend or below. My expectation is for a crop between 8.8 and 9.7 billion bushels.

With adequate supplies, corn consumption is expected to continue to increase in the 2000-01 marketing year. Some important political decisions will affect corn use for alcohol over the next several years. For the year ahead, a trend increase in consumption of corn for all food and industrial purposes would put use at 1.975 billion bushels. Feed and residual use of corn will depend on animal numbers and feeding profitability. Poultry numbers are expected to expand by a normal 3 to 4 percent, while cattle numbers will decline as the year progresses. Hog numbers will be smaller in the first half of the year, but likely increase in the last half of the year. Feeding weights of both cattle and hogs will likely be large if profit margins are maintained. This scenario suggests steady to slightly larger feed and residual consumption of corn in the year ahead. We are using a projection of 5.65 billion bushels.

U.S. corn exports during the 2000-01 marketing year will depend on a large number

of factors: size of the grain crops in the rest of the world; rate of world economic growth; extent to which animal disease problems in parts of Asia affect meat demand; and policy changes in China. For the longer term, potential policy changes in China are of the most interest. To receive permanent most favored nation status from the U.S. and entry into the World Trade Organization, China may reduce agricultural import tariffs, reduce or eliminate corn production incentives, and eliminate corn export subsidies. The latter two developments might result in a reduction in Chinese corn production and exports and provide a larger market share for U.S. corn exports. Chinese corn production and net exports over the past 5 years have been as follows:

Marketing Year	Production	Net Exports
	million bushels	
1995-96	4,409	-49
1996-97	5,018	150
1997-98	4,106	231
1998-99	5,234	121
1999-00 ¹	5,039	305

¹ Projected

China was a net importer of corn during the 1995-96 marketing year. The large exports during the current marketing year may reflect attempts to eliminate any surplus before policy changes are made.

In addition to the Chinese situation, world production of corn and other feed grains will be an important determinant of U.S. corn exports. World crops were extremely large in 1996-97 and remained generally large in 1997-98 and 1998-99 (Table 6). The large Argentine crop in 1997, generated by El Nino weather, accounted for part of the sharp

decline in U.S. exports in the 1997-98 marketing year. For the current year, foreign coarse grain production is at the lowest level in 4 years. The Argentine crop is more normal in size and production in the former Soviet Union continues to be small. Russia has actually purchased about 47 million bushels of U.S. corn through commercial channels this year.

Smaller world crops, along with continued economic recovery, bode well for U.S. corn exports. We are using a projection of 2 billion bushels for the 2000-01 marketing year, bringing the projection of use for all purposes to 9.625 billion bushels.

The mid-point of the range of my production expectations for 2000 is 9.25 billion bushels. A crop of that size would not require any reduction in consumption, but would result in year ending stocks being reduced to about 1.39 billion bushels (Table 2). A crop at the lower end of the expected range (8.7 billion bushels), would require a slight reduction in consumption from the projected level of 9.625 billion bushels. A crop at the upper end of the expected range (9.7 billion bushels) would keep corn supplies fully abundant for another year.

Price Prospects

Average monthly cash corn prices in central Illinois for the 1999-00 marketing year have been as follows:

Month	Price
	\$/bu
September 1999	1.81
October	1.72
November	1.82
December	1.84
January 2000	1.94
February	2.02
March	2.08
Average	1.89

The lowest price was \$1.67 on October 8, 1999 and the highest price was \$2.15 on March 17, 2000. The range from high to low of \$.48 is low by historical standard. The range was \$.60 last year and \$1.10 in 1997-98. For the 1999-00 marketing year, the weighted average price in central Illinois, and in the U.S., is likely to be between \$1.90 and \$1.95, as the majority of the crop was sold in the first half of the marketing year. Prices will likely be quite volatile for the remainder of the marketing year. We expect a slightly higher trend, with some improvement in the miserable basis levels if crop worries continue. The central Illinois cash price might be expected to advance to the \$2.30 to \$2.40 range if dry weather persists.

Under our base line assumption of a 9.25 billion bushel corn crop in 2000, the average 2000-01 marketing year price would likely be near \$2.40, reflecting a carryover of about 1.39 billion bushels (Table 2). The market is currently priced near \$2.45.

With a 9.7 billion bushel crop and a 2000-01 carryover of 1.8 billion bushels, the marketing year average price might be near \$2.00 per bushel. A crop as low as 8.7 billion bushels would require a slight reduction in use from the projected level. With a relatively strong demand base, a reduction in use of 200 million bushels, and year ending stocks near 1 billion bushels, might result in a marketing year average price of \$2.50 to \$2.60. The highest prices would come early in the year, perhaps before harvest.

Pricing Strategies

The spring weather market should be used to “meter out” the sales of remaining old crop inventory. Those who still have loan protection on the crop can afford to be more patient. December 2000 corn futures has recently traded to \$2.642 on two occasions. That is within the range that might trigger the first 10 to 15 percent sales of the new crop. Persistent dry weather concerns would likely push that contract up to challenge the contract high near \$2.80. That level might trigger a second sale of 10 to 15 percent of the expected crop. The current weak new crop basis favors hedging or hedged-to-arrive

contracts over cash sales for harvest delivery. Premiums for January delivery may be attractive to those who prefer cash sales.

For those who would prefer to be more aggressive on new crop sales, options might be an alternative. At-the-money December options, however, are relatively expensive near \$.25 per bushel. Buying put options or replacing sales (hedged or cash) with call options might be augmented by selling put options with strike prices well out of the money or selling call options well in-the-money. The premium received for those options can partially offset the premiums for buying the initial options, but result in limits on potential gains.

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Table 1. United States Corn Production Estimates

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	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
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
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
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
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
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	

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
	million pounds																		
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
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	9,437
TOTAL ^a	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	11,239
September-November																			
Seed, food, ind.	173	208	227	244	276	295	296	302	314	339	361	371	382	408	413	383	429	444	453
Export	519	443	493	503	415	318	396	471	582	381	421	488	435	449	660	487	380	450	533
Feed, residual	1,218	1,215	1,326	1,301	1,219	1,348	1,551	1,344	1,485	1,619	1,673	1,813	1,702	1,965	1,782	1,890	2,036	2,127	2,216
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	3,021	3,202
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	8,025
Seed, food, ind.	166	192	212	236	262	281	288	301	314	331	363	366	378	408	401	394	418	427	455
Export	470	510	506	580	460	313	405	502	682	471	362	563	330	590	562	525	380	465	465
Feed, residual	1,199	1,305	1,069	1,192	1,306	1,463	1,444	1,065	1,275	1,350	1,266	1,400	1,241	1,494	1,348	1,492	1,510	1,467	1,504
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	2,424
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	5,606
Seed, food, ind.	201	228	253	294	307	333	337	353	375	383	414	413	422	450	429	465	464	489	
Export	596	475	513	475	201	496	510	590	601	454	371	411	270	568	610	431	350	497	
Feed, residual	1,089	1,272	954	1,019	1,091	1,088	951	843	994	961	1,043	1,147	951	1,162	1,048	1,105	1,089	1,103	
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	
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	
Seed, food, ind.	193	227	238	293	307	324	331	342	367	372	396	406	428	439	369	450	470	462	
Export	412	393	374	292	151	365	406	463	503	419	430	301	293	570	396	343	394	568	
Feed, residual	739	781	527	603	499	761	843	685	628	681	813	892	790	849	530	814	870	799	
TOTAL	1,344	1,401	1,139	1,188	957	1,450	1,580	1,490	1,498	1,472	1,642	1,599	1,511	1,858	1,295	1,617	1,730	1,829	
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	
Annual																			
Seed, food, ind.	733	855	930	1,067	1,152	1,233	1,251	1,298	1,370	1,425	1,534	1,556	1,609	1,704	1,612	1,692	1,782	1,822	
Export	1,997	1,821	1,887	1,850	1,227	1,492	1,716	2,026	2,368	1,725	1,584	1,663	1,328	2,177	2,228	1,795	1,504	1,981	
Feed, residual	4,245	4,573	3,876	4,115	4,115	4,660	4,789	3,941	4,382	4,611	4,798	5,252	4,685	5,471	4,708	5,302	5,505	5,496	
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	9,299	

^a 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 ^a	2000-01 ^a
	million bushels											
Carryin	1,930	1,344	1,521	1,100	2,113	850	1,558	426	883	1,308	1,787	1,749
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>9,437</u>	<u>9,250</u>
TOTAL ^b	9,465	9,282	9,016	10,584	8,472	10,910	8,974	9,672	10,099	11,085	11,239	11,014
Seed, food, industrial	1,370	1,425	1,534	1,556	1,609	1,704	1,612	1,692	1,782	1,822	1,900	1,975
Export	2,368	1,725	1,584	1,663	1,328	2,177	2,228	1,795	1,504	1,981	1,950	2,000
Feed and residual	<u>4,382</u>	<u>4,611</u>	<u>4,798</u>	<u>5,252</u>	<u>4,685</u>	<u>5,471</u>	<u>4,708</u>	<u>5,302</u>	<u>5,505</u>	<u>5,496</u>	<u>5,640</u>	<u>5,650</u>
TOTAL	8,120	7,761	7,916	8,471	7,622	9,352	8,548	8,789	8,791	9,298	9,490	9,625
Carryout	1,344	1,521	1,100	2,113	850	1,558	426	883	1,308	1,787	1,749	1,389
U.S. average price	\$2.36	\$2.28	\$2.37	\$2.07	\$2.50	\$2.26	\$3.24	\$2.71	\$2.45	\$1.94	\$1.90	\$2.40

^a Projected

^b Includes imports

Table 3. United States Corn Planting Intentions, Actual Plantings, and Acres Harvested

Year	Planted Acreage			Actual	Harvested Acreage
	February/January Intentions	March Intentions	June Intentions		
			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 ^a	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	77,431	70,537
2000		77,881			

^a February

Table 4. Planted Acreage of Corn by State

State	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	thousand acres										
Georgia	660	600	750	650	600	400	580	550	500	350	400
Illinois	10,600	11,200	11,200	10,590	11,600	10,200	11,000	11,200	10,600	10,800	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
Iowa	12,800	12,500	13,200	12,000	13,000	11,700	12,700	12,200	12,500	12,100	12,200
Kansas	1,600	1,800	1,850	2,000	2,280	2,150	2,500	2,750	3,000	3,150	3,300
Kentucky	1,350	1,400	1,420	1,370	1,350	1,280	1,300	1,270	1,300	1,320	1,330
Michigan	2,400	2,600	2,700	2,500	2,550	2,450	2,650	2,500	2,300	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	7,000
Missouri	2,100	2,300	2,500	2,200	2,400	1,650	2,750	2,700	2,650	2,650	2,600
Nebraska	7,700	8,200	8,300	8,000	8,600	8,000	8,500	8,900	8,800	8,600	8,300
North Carolina	1,200	1,050	1,150	1,000	1,000	800	1,000	960	860	750	700
Ohio	3,700	3,700	3,800	3,500	3,700	3,300	2,900	3,800	3,550	3,450	3,450
Pennsylvania	1,380	1,400	1,380	1,370	1,400	1,380	1,450	1,550	1,550	1,500	1,500
South Dakota	3,400	3,750	3,800	3,350	3,800	2,800	4,000	3,800	3,900	3,600	3,900
Tennessee	620	620	740	660	670	640	770	700	700	630	640
Texas	1,650	1,700	1,750	2,000	2,150	2,100	2,100	2,000	2,400	1,950	2,000
Wisconsin	3,700	3,800	3,900	3,400	3,750	3,650	3,900	3,850	3,700	3,600	3,500
United States	74,171	75,951	79,325	73,323	79,158	71,245	79,487	79,537	80,165	77,431	77,881

Table 5. 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		
	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		
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		
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		
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		
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		
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			

Table 6. World Coarse Grain Production

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	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	263.4
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	37.8	40.9
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	105.4	103.1
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	145.1	139.1
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	51.1	51.9
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
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	28.5
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	33.3	32.9
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	17.7	19.9
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	9.9
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	892.0	872.7
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	620.6	609.3

Source: USDA, FAS, World Crop Production, Mar. 2000 and earlier issues.