

GRAINS AND OILSEEDS OUTLOOK FOR 2000¹

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The outlook for the 2000 crops of wheat, corn, and soybeans continues to be dominated by expectations for large stocks and low prices. Carryout stocks for the current marketing year (1999/2000) are projected to remain near or exceed last year's levels. Wheat carry-out stocks are expected to approach 1 billion bushels, 2.7 times the carry-out for 1995/96; corn carry-out stocks are projected to remain above 1.7 billion bushels, over 4 times the 1995/96 carry-out; and soybeans stocks of 345 million bushels would be about 2.6 times the previous low in 1996/97.

Given these expected stock levels, it is not surprising that crop prices for 1999/2000 are forecast to average the lowest since the mid-1980's. Corn prices, projected to average \$1.90 per bushel, are down for the fourth consecutive year and 40 percent below the high of \$3.24 per bushel in 1995/96. Wheat prices, forecast at \$2.55 per bushel, are also expected to be down for the fourth consecutive year and 44 percent below the high of \$4.55 per bushel in 1995/96. Soybean prices, forecast at \$4.75 per bushel, are down for the third consecutive year and 35 percent below the high of \$7.35 per bushel for 1996/97.

Will Plantings Decline in 2000?

One of the major changes in U.S. farm policy resulting from the 1996 farm act was the decoupling of program payments from planting decisions. In addition substantial area became available to plant from the elimination of annual set aside programs. Not only were set aside acres released, but program crop plantings were no longer restricted by base acres and compliance restrictions. It was expected that producers would respond to market signals, reducing plantings of lower income crops and increase plantings of higher income crops.

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With the sharp decline in market prices during the last several years, one might expect that 1999 plantings would have been substantially below the 1996 and 1997 levels. Planted area of the three major field crops was down about 5 million acres, but this is only 2.3 percent of the total planted area of wheat, corn, and soybeans in 1996 and 1997. As indicated above, prices of these commodities declined between 35 - 45 percent from their previous highs. Thus, for each 1 percent decline in farm prices, planted area of the three major crops declined by less than one-tenth of one percent. Continuing structural shifts in acreage following the elimination of base acreage constraints are part of the reason that this aggregate acreage response to price is small.

In the short run, producers are likely to plant as long as variable cash expenses are covered by production-related revenues (market receipts plus marketing loan benefits), Table 1. Production-related revenues per acre have exceeded variable cash costs per acre even though prices have declined markedly. Additionally, nonproduction-related sources of revenue, including production flexibility contract (PFC) payments and market loss assistance payments have supplemented producer's farm cash flow.

Table 1. Comparison of Per Acre Returns: Wheat, Corn, and Soybeans—Selected Years

	Wheat		Corn		Soybeans	
	1997	2000	1997	2000	1997	2000
	\$/acre					
Market Receipts	133.51	108.08	307.88	264.23	251.68	178.00
LDP/MLG ¹ Payments	0.40	9.43	1.27	29.81	0.39	38.80
Production-Related Returns Per Acre	133.91	117.51	309.15	294.04	252.07	216.80
Variable Cash Costs	70.49	69.36	157.92	157.64	79.43	79.76
Production-Related Returns Above Variable Cash Costs	63.42	48.15	151.23	136.40	172.64	137.04

¹Loan Deficiency Payments (LDPs) and Marketing Loan Gains (MLGs).

Given the cash flow levels generated by market receipts and government payments in recent years, it is likely that total plantings of wheat, corn, and soybeans will remain near the 214 million acres planted in 1999. However, there will be continued shifts between the crops. Wheat plantings for the 2000 crop are likely to decline for the fourth consecutive year as producers continue to favor feed grains and oilseeds in many parts of the Corn Belt and northern Plains States. The *Winter Wheat Seedings* report released by the National Agricultural Statistics Service (NASS) on January 12, 2000, showed winter wheat plantings down 515,000 acres to 42.9 million and the lowest seedings since 1972. Spring wheat plantings are also expected to drop, with most of the reduction coming in durum. Thus, all wheat plantings in 2000 are projected at 62 million acres, down 800,000 from 1999.

Little change in corn plantings is anticipated for 2000 as expected prices are little changed from a year earlier. Some areas in the Midwest are likely to see expanded corn planting in response to rotation needs, while others will likely continue to lose area to soybeans. Corn plantings are projected at 77 million acres, down less than 500,000 acres.

Although soybean prices have remained below \$5.00 per bushel since early 1999, prospects are good for the eighth consecutive annual increase in soybean plantings as producers continue to consider the soybean loan rate and large recent LDP/MLG rates in their planting decisions. With relatively low prices for corn and wheat expected this spring, producers are forecast to plant a record 75 million acres of soybeans, up 1.2 million from last year, and up over 17 million acres since 1990. Up to 500,000 acres of additional soybeans are likely to be planted in the western Corn Belt, especially in Nebraska and Kansas, where producers continue to reduce wheat plantings. An additional 500,000 acres could also be planted this year in the eastern Corn Belt influenced by both relative returns and crop rotation considerations.

Wheat: Supply, Demand, and Price Outlook for 2000/01 (Table 2)

Supply: Supply prospects for wheat in 2000/01 are impacted by the expected decline in planted area and dryness in parts of the major hard red winter wheat region, especially in the southern and central Plains. These regions have been dry for several months and continued dryness would potentially reduce both yields and harvested acres. In recent years, USDA has used the average yield for the three previous years as the yield forecast for the new crop. This would result in a yield forecast of 41.8 bushels per acre for the 2000 crop. By using a 5-year average yield, two years with weather-reduced yields would lower the projected yield for the new crop to reflect the stress experienced to date. The State-weighted average yield of wheat for the previous 5-years is just over 39 bushels per acre.

Using the 62 million acres planted and the average of the harvested-to-planted ratios during the previous 5 years, gives a projected harvested area of 54 million acres. Thus, all wheat production is projected at 2,120 million bushels, down 7.5 percent from 1999 production.

Lower production in 2000/01 is somewhat offset by the larger carryin stocks. With wheat imports near last year's level, total wheat supplies are projected at 3,217 million bushels, down nearly 4 percent.

Demand: Total use of wheat in 2000/01 is expected to remain weak. Food use will continue to show some growth, but feed and residual use will likely decline because of low corn prices. Total domestic use of 1,275 million bushels is projected down nearly 20 million bushels.

World import demand in 2000/01 is expected to remain relatively flat. Much of the Middle East, especially Iran, remains dry and their demand will remain strong. However, crop conditions in most other major importing countries are generally favorable. Weather conditions in the next two to three months will be critical and import needs could change dramatically. Thus, barring any yield-related

production shortfalls in key importing countries, U.S. wheat exports in 2000/01 will largely depend on the strength of competition from foreign exports.

Carryin stocks for the four major foreign competitors will be down from 1999/2000, but production will likely expand. Winter wheat plantings in the European Union (EU) are up sharply in response to better weather conditions last fall and expectations of better returns for wheat than most competing crops. Wheat plantings in Canada are also expected to rise in 2000/01 because of more favorable prices and rotational needs. Little change in wheat planting is expected for Australia and Argentina, and their crops will remain near 1999/2000 levels. In addition, U.S. wheat exports will likely face increased competition from larger Eastern Europe crops.

Given expectations of continued larger supplies in major exporting countries and flat import demand, U.S. wheat exports are projected to remain flat in 2000/01 at 1,050 million bushels. Thus, total use of wheat is expected to be little changed from 1999/2000 forecast levels.

Stocks and Prices: Given the flat use, the smaller supplies will translate into a decline of over 100 million bushels to 892 million in 2000/01 ending stocks. This level of stocks would represent 38.4 percent of projected use, down from the 42.5 percent forecast for the current year. The tighter supply/use balance is expected to boost prices about \$0.20 per bushel to near \$2.75 per bushel.

The export projections for 1999/2000 and 2000/01 do not include the planned fiscal-year 2000 (October 1999 - September 2000) donations of approximately 3 million tons of food aid announced on February 10, 2000. Commodities to be donated include wheat and wheat flour, soybeans and soy products, rice, and milk powder. About 75 percent of the donations are expected to be wheat and flour (2.25 million metric tons or 83 million bushels). At this time, it is uncertain if the wheat/flour component will be shipped in the 1999/2000 marketing year or the 2000/01 marketing year. If purchases for these donations occur mostly in the 2000/01 marketing year, wheat prices in 2000/01 could increase about \$0.10 per bushel.

Corn: Supply, Demand, and Price Outlook for 2000/01 (Table 3)

Supply: In about two months, corn producers will begin to plant the 2000 corn crop. Weather and market conditions from now through the planting season will have considerable impact on the actual plantings. The current outlook is based on available information as of early February. As indicated above, the outlook is for a slight decline in planted corn area to 77 million acres. Taking into account recent level of harvesting for silage and abandonment, leaves a harvested area of 70.3 million acres.

USDA has historically based corn yields on a long-term simple linear trend using national average yields from 1960 to the present. Other models have been developed which incorporate growing season weather factors, planting progress as of mid-May, and a linear time trend (Westcott). Another method is to use ear counts and ear weights reported by NASS for the 7 objective-yield States.

Using historical average values for mid-May planting progress and assuming some variation (plus or minus one standard deviation) around normal weather suggests that 2000/01 corn yields will be near 135.5 bushels per acre. Similar results are implied by using trend growth in the number of ears per acre and average ear weights, with forecast yields for the 7 objective-yields States correlated to the national yield using historical averages. Thus, corn production in 2000/01 is projected at 9.5 billion bushels, up nearly 90 million bushels from last year's out-turn and the fifth consecutive crop to eclipse the 9 billion bushel mark. The larger crop will more than offset slightly lower carryin stocks to keep total corn supplies in excess of 11 billion bushels for the third consecutive year.

Demand: Domestic use of corn in 2000/01 is projected to increase only about 1 percent as food, seed, and industrial (FSI) uses increase about 4 to 5 percent and feed and residual use remains flat. All of the individual components of FSI are expected to increase except seed. The growth rate of the use of corn for production of high-fructose corn syrup (HFCS), glucose and dextrose, and starch is expected to reflect the rate of population growth, slightly slower than in recent years. Corn used to produce fuel alcohol is forecast to grow 12 percent in 2000/01 from the year earlier. Incentives from a domestic commodity industrial use program, which are assumed for these projections, would likely boost corn used in alcohol production to near plant capacities. Corn used in beverage and manufacturing alcohol plus cereals and other production are forecast to grow about 1 percent per year, near the rate of increase in the population.

Feed and residual use of corn is projected to remain unchanged for 2000/01 as growth in some livestock sectors is offset by reductions in others. Milk production is forecast to increase through 2001, keeping feed demand strong in the dairy sector. Similarly, the poultry sector is also expected to continue to expand. However, beef and pork production will slip slightly through 2001, reducing feed needs in these sectors. Feed and residual use of all grains in 2000/01 is forecast to be slightly less than in 1999/2000. Feed and residual use of wheat, barley, and grain sorghum is expected to decline. These reductions will allow corn feed and residual use to remain flat in 2000/01.

U.S. corn exports in 2000/01 are not expected to increase. There will likely be some growth in global demand due to larger imports by Mexico and parts of South America and Asia, but competition from Argentina and China will remain the key to U.S. export prospects. Corn stocks remain large in China, but lower procurement prices announced by the government may lead to lower planted area. Thus, China's exports will reflect government decisions regarding export subsidies and will be subsequently influenced by the timing of WTO accession. Larger plantings and trend yields are expected to produce another large crop in Argentina. If a large European wheat crop materializes as expected, corn exports to some countries, particularly South Korea, could also face competition from wheat.

On balance, U.S. corn exports face a very competitive outlook in 2000/01 and are projected to show a small decline from this year. Increased domestic use of corn is expected to offset the projected small decline in exports, resulting in a very modest increase in total use to 9.56 billion bushels.

Stocks and Prices: The small increase in total use in 2000/01 exceeds the crop by a slim 36 million bushels. Adjusting for the small imports results in a drop in ending stocks to 1.714 billion bushels. This level of stocks represents 17.9 percent of use, down just 1 percentage point from the forecast 1999/2000 stocks-to-use ratio. As a result, farm prices of corn are again expected to average below \$2.00 per bushel. Although stocks remain large compared to the mid 1990's, they are relatively small compared with the growing use. This will make markets extremely sensitive in the coming months to weather developments and export prospects. For example, if corn yields are equal to the long-term simple linear trend of 133.8 bushels per acre, they would still match last year's third highest yield on record. However, given this yield and no change in use from our projections for 2000/01, ending stocks would drop below 1.6 billion bushels and add 5 cents to the forecast price.

Soybeans: Supply, Demand, and Price Outlook for 2000/01 (Table 4)

Supply: Soybean yields for 2000 are projected to reach 40 bushels per acre based on stronger trend growth since the mid 1980's when growers turned to narrower row-width planting practices. Nevertheless, yields are projected below the 1994 record of 41.4 bushels per acre. Last year's yield of 36.5 bushels per acre reflected unusually dry conditions during the critical pod-set and pod-filling stages in late July and early August. Eastern Corn Belt States and Iowa together accounted for 1.5 out of the 2.4 bushel year-to-year decline from 38.9 bushels per acre achieved in 1998.

Trend yields combined with record harvested area will produce a record U.S. soybean crop of 2.96 billion bushels in 2000. A record crop coupled with carryover stocks of 345 million bushels will set the stage for U.S. soybean supplies to exceed 3 billion bushels for the first time.

Demand: Domestic disappearance of soybeans is expected to increase due to higher domestic and export demand for soybean meal and soybean oil. Soybean crushing is forecast at a record 1.65 billion bushels based on projected increases in total meal and oil demand of 3 percent and 6 percent, respectively. Domestic meal use is projected to increase 2 percent, close to this past year. Expansion in broiler production will boost protein feeding even though beef and hog operations will contract for the second consecutive year. Meal prices are expected to remain near \$150 per ton. With the exception of 1998, when prices declined to \$138 per ton, meal prices will be the lowest in over 15 years.

Foreign protein meal use is projected to increase 3.4 percent in 2000/01, with demand for soybean meal increasing only 1.5 percent as competition from other meals such as rapemeal remain intense. Asia will provide most of the growth, even though China and Japan will not contribute much to soybean meal imports. European soybean meal imports may decline 1-2 percent as increased availabilities of other meals, policy changes, and a weaker Euro combine to reduce soybean meal competitiveness with other feedstuffs. Although growth prospects for global soybean meal trade will be limited, reduced competition from South America will permit U.S. soybean meal exports to grow about 9 percent to 7.6 million short tons, the first increase since 1997, Table 5.

Strong growth in the demand for soybean oil is expected in response to the lowest soybean oil prices since 1971. However, record domestic use and a rebound in soy oil exports from low levels projected for 1999/2000 will not be enough to offset record supplies. As a result, U.S. soyoil stocks are expected to increase to a new high by the end of the marketing year, Table 6. Strong growth in palm oil trade will limit prospects for soyoil this year as large palm oil production and stocks continue to weigh on the global vegetable oil market. Furthermore, the major importers of vegetable oils, particularly India and China, may be a drag on demand as both countries follow more restrictive import policies and oilseed production expands. Internally, China currently enjoys a \$350.00 per ton premium for soybean oil compared with world prices.

Although the U.S. soybean supply is projected to increase by over 10 percent, soybean production in the rest of the world is expected to increase only slightly from 1999/2000. Continued low prices and large U.S. and global stocks of oilseeds and edible oils will weigh on foreign producers' decisions in the year ahead, likely causing modest production declines in competing soybean and other oilseed producer-exporter countries. Importing countries, such as China and India, could experience some increase in oilseed crop production, but not enough to meet their internal demand growth.

Soybean exports are projected at 985 million bushels in 2000/01, exceeding the growth projected for 1999/00. U.S. exports will be boosted by larger U.S. availabilities, reduced South American supplies, and expanded foreign import demand. China's policy of restricting imports of oilseed products will also provide additional growth for soybean and rapeseed imports in 2000/01, when soybean imports could reach a record 5 million tons. The likely cutback in South American competition will be mainly in response to a draw-down in inventories from 1999/2000 and lower new-crop acres and production in response to low prospective prices at planting time this fall. Based on current price projections, the soybean/corn price ratio in the fall could decline to below 2.4 compared with a level of around 2.6 last fall, which would provide incentive for producers to switch to corn, particularly in Argentina.

Stocks and Prices: Overall, U.S. soybean ending stocks are expected to exceed 500 million bushels at the end of 2000/01, the largest carryout since the record 536 million bushels in 1985/86. Prices are forecast to continue to weaken through 2000/01, with the season average price projected to decline to the low to mid \$4 per bushel range. Producers' incomes, however, will continue to be protected by the marketing loan program. If prices reach the projected level, program outlays will likely exceed the \$1.9 billion spent so far for the 1999 soybean crop.

Reference:

"Westcott, Paul. "A Corn Yield Model Incorporating Planting Progress and Weather Variables," Feed Outlook, FDS-0396, March 1996. (Available electronically through the ERS Corn Briefing room at: <http://www.econ.ag.gov/briefing/corn/articles>)

Table 2.--Wheat: Supply, Demand, and Price

	1998/99	1999/2000	2000/01
		1/	2/
Area planted (mil. acres)	65.8	62.8	62.0
Area harvested	59.0	53.9	54.0
Yield (bu./acre)	43.2	42.7	39.3
Production (mil. bushels)	2,547	2,302	2,120
Beginning Stocks	722	946	997
Imports	103	95	100
Supply	3,373	3,343	3,217
Feed and residual	397	300	275
Food, seed, & industrial	988	996	1,000
Total Domestic Use	1,384	1,296	1,275
Exports	1,042	1,050	1,050
Total Use	2,427	2,346	2,325
Ending Stocks	946	997	892
Farm Price (\$/bushel)	\$2.65	\$2.55	2.75
		3/	

1/ Forecast. 2/ Projected. 3/ Mid-point of forecast range.

Table 3.--Corn: Supply, Demand, and Price

	1998/99	1999/2000 1/	2000/01 2/
Area planted (mil. acres)	80.2	77.4	77.0
Area harvested	72.6	70.5	70.3
Yield (bu./acre)	134.4	133.8	135.5
Production (mil. bushels)	9,759	9,437	9,525
Beginning Stocks	1,308	1,787	1,739
Imports	19	15	10
Supply	11,085	11,239	11,274
Feed and residual	5,496	5,650	5,650
Food, seed, & industrial	1,822	1,900	1,985
Total Domestic Use	7,318	7,550	7,635
Exports	1,981	1,950	1,925
Total Use	9,298	9,500	9,560
Ending Stocks	1,787	1,739	1,714
Farm Price (\$/bushel)	\$1.94	\$1.90 3/	\$1.95

1/ Forecast. 2/ Projected. 3/ Mid-point of forecast range.

Table 4.--Soybeans: Supply, Demand, and Price

	1998/99	1999/2000 1/	2000/01 2/
Area planted (mil. acres)	72.0	73.8	75.0
Area harvested	70.4	72.5	74.0
Yield (bu./acre)	38.9	36.5	40.0
Production (mil. bushels)	2,741	2,643	2,960
Beginning Stocks	200	348	345
Imports	3	3	6
Supply	2,944	2,994	3,311
Crush	1,590	1,600	1,655
Seed, & residual	205	159	161
Total Domestic Use	1,795	1,759	1,816
Exports	801	890	985
Total Use	2,595	2,649	2,801
Ending Stocks	348	345	510
Farm Price (\$/bushel)	\$4.93	\$4.75 3/	\$4.45

1/ Forecast. 2/ Projected. 3/ Mid-point of forecast range.

Table 5.--Soybean Meal: Supply, Demand, and Price

	1998/99	1999/2000 1/	2000/01 2/
Beginning Stocks (thous. short tons)	218	330	275
Production	37,792	38,045	39,335
Imports	99	50	65
Supply	38,109	38,425	39,675
Domestic Use	30,662	31,150	31,800
Exports	7,117	7,000	7,600
Total Use	37,779	38,150	39,400
Ending Stocks	330	275	275
Avg. Meal Price (\$/ton)	\$138.50	\$155.00 3/	\$150.00

1/ Forecast. 2/ Projected. 3/ Mid-point of forecast range.

Table 6.--Soybean Oil: Supply, Demand, and Price

	1998/99	1999/2000 1/	2000/01 2/
Beginning Stocks (million pounds)	1,382	1,520	2,130
Production	18,081	18,080	18,700
Imports	82	80	65
Supply	19,546	19,680	20,895
Domestic Use	15,655	15,900	16,250
Exports	2,372	1,650	2,300
Total Use	18,027	17,550	18,550
Ending Stocks	1,520	2,130	2,345
Avg. Oil Price (\$/pound)	\$0.199	\$0.160 3/	\$0.150

1/ Forecast. 2/ Projected. 3/ Mid-point of forecast range.