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Farm use of fertilizer and other inputs expected to rise

A recent U.S. Department of Agriculture report, *Agricultural Resources, Situation and Outlook Report*, fore-shadows increased purchases of several inputs by farmers this year. Domestic farm use of fertilizer, pesticides, and seeds is expected to rise 7 to 9 percent this year. In addition, farm use of fuel is expected to rise 12 percent. The prospective gains stem primarily from expectations for expanded crop plantings.

During the current fertilizer marketing year that will end in June, U.S. farmers are expected to increase their usage of fertilizer to 21.2 million nutrient tons. Such a level would be up 9 percent from a year earlier and the highest in four years. Nitrogen consumption is expected to rise about 10 percent to 11.5 million nutrient tons while phosphate and potash consumption are projected to rise 7 to 8 percent to 4.43 and 5.31 million nutrient tons, respectively.

As U.S. crop acreage retreated in recent years, farm usage of fertilizer flattened-out at an annual average of about 19.4 million nutrient tons during the three years ending with June of 1988. Except for 1983 (when PIK-curtailed plantings reduced usage to 18.1 million nutrient tons), fertilizer consumption in each of the past three years was the lowest for any year since 1975 and 18 percent below the peak year of 1981 when 23.7 million nutrient tons were used. Among the primary fertilizer nutrients, the cuts in recent years relative to 1981 were most apparent for phosphate and potash. Nitrogen consumption the past three years averaged 12.5 percent below the 1981 peak.

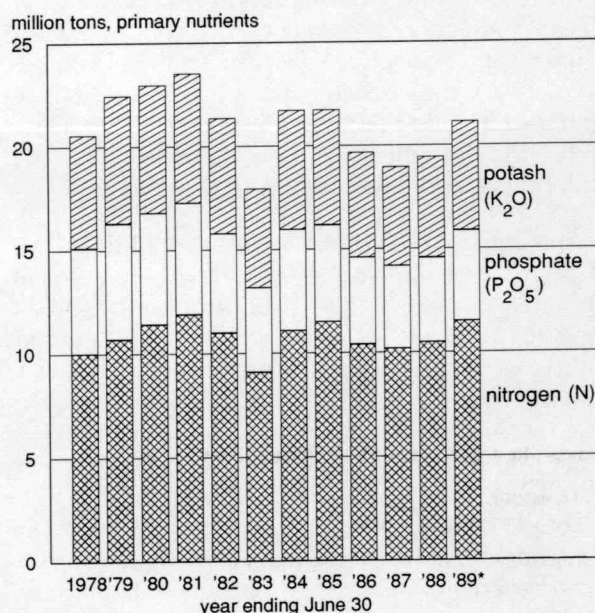
Use of pesticides on major field crops by U.S. farmers is projected to rise 7 percent this year to around 470 million pounds of active ingredients. Virtually all of the increase is expected to be in the form of herbicides which are used to control weeds. Some 402 million pounds of active herbicide ingredients are expected to be used on field crops this year. Use of insecticides and fungicides is expected to rise only 1 to 2 percent this year to 60.7 and 7.6 million pounds of active ingredients, respectively.

The vast bulk of the acreage devoted to field crops in the U.S. is treated with herbicides and a substantial portion is also treated with insecticides. The use of fungicides is common on peanut acreage, but very

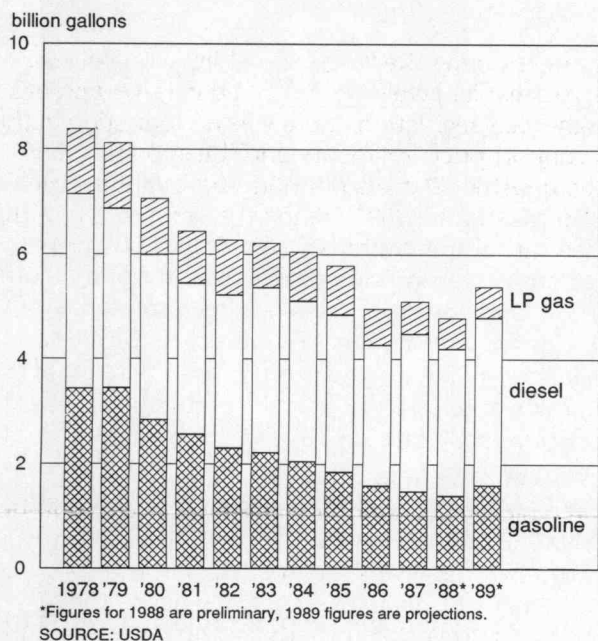
limited with respect to other field crops. Surveys in major crop areas indicate that 95 percent of the corn, soybean, and cotton acreage has been treated with herbicides in recent years. The use of herbicides on wheat acreage has ranged from 35 to 40 percent of the winter wheat to 90 to 95 percent of the spring wheat. Insecticides have been applied to 35 to 40 percent of the corn acreage in recent years and about 60 to 65 percent of the cotton acreage. Conversely, less than a tenth of the soybean and wheat acreage has been treated with insecticides.

Seed use for eight major crops is projected to rise to 6.4 million tons in the 1988/89 crop marketing year. Although still well short of the 7.2 million tons of seeds used with the record plantings of 1980/81, such a level would be up 8 percent from last year and the highest since 1985/86. In addition to the eight major crops, there will continue to be a strong demand for grass seed to comply with the seeding practices that are encouraged for land enrolled in the 10-year Conservation Reserve Program. Seed supplies, although adversely affected by last year's drought, are expected to be adequate. For corn, the combination of carryover stocks and a substantial increase in off-season pro-

U.S. farm use of fertilizer



U.S. farm use of fuel



duction (primarily in the southern U.S. and in South America) are expected to result in ample supplies overall. However, some hybrids may be in short supply, requiring farmers to choose other seed varieties.

Domestic farm use of fuels is expected to rise in 1989, reversing a pronounced downtrend of the past several years. The projected 5.4 billion gallons of farm fuel use for this year encompasses estimates of 1.6 billion gallons of gasoline, 3.2 billion gallons of diesel fuel, and 0.6 billion gallons of LP gas. Over the past decade, farm use of fuels declined steadily. Rapidly rising energy prices in the late 1970s and early 1980s encouraged extensive energy conservation efforts in tillage and crop drying practices as well as a shift in farm machinery purchases from gasoline to diesel engines. More recently, the decline in farm use of fuels has reflected cuts in crop plantings. Last year's drop also reflected the drought which led to a rise in acreage abandonment and lower crop drying needs.

With the anticipated upturn in farm use of these inputs, prices are rising and trade patterns are changing. USDA analysts believe that the index of prices paid by farmers for fertilizer this spring will average 7 percent more than a year ago and 20 percent higher than two years ago. Moreover, quoted prices for herbicides and pesticides this season are reported to be up 4 to 5 percent from last season, slightly larger than the gains posted a year ago. Seed prices, which were flat the past couple of years, are expected to be 10 to 15 percent higher this spring than was the case a year ago. Fuel and energy prices paid by farmers in January of this year were up only 1 percent from a year earlier.

But the recent price pressures in the energy area suggest that the gain has widened since January.

U.S. trade patterns for these farm inputs are also shifting in light of the projected rise in farm usage this year. For example, U.S. exports of fertilizer have lagged year earlier levels since mid 1988, while imports have continued to rise. During the 1987/88 fertilizer year, U.S. imports of fertilizer rose 7 percent to 8.9 million nutrient tons while exports rose about 1 percent to 7.7 million nutrient tons (excluding phosphate rock). Overall, the U.S. is a large net exporter of phosphate fertilizer, but a net importer of modest amounts of nitrogen and a major net importer of potash.

Gary L. Benjamin

Milk production continues to rise

Milk production in the United States reached a new record high in 1988, reversing the slight decline registered a year earlier. At just over 145.5 billion pounds, milk output was up 2 percent from the 1987 level and about 1.5 percent higher than the previous record set in 1986. The increase in output occurred throughout the year. After a sharp rise during the first three months of 1988, output registered year-to-year gains of about 1 percent during the second and third quarters. During the final three months of the year, however, milk production outpaced the year-earlier level by almost 2 percent. USDA reports indicate that milk production remains large in the early months of 1989 and will likely contribute to a new record level of milk production this year.

Dairy cow numbers held below year-earlier levels throughout 1988. At an average of just over 10.2 million head in 1988, the dairy cow herd was down 1 percent from the previous year and at a record low. The year-to-year declines were somewhat sharper during the first half of 1988 as producers adjusted to the cut in the support price at the start of the year. However, year-to-year reductions in the herd were somewhat smaller during the summer and fall months, despite the cost pressures exerted by the drought.

Although milk cow numbers were down last year, output per cow averaged three percent higher for the year. The strongest gain in milk output per cow occurred during the first quarter of the year, which saw output per cow jump more than 5 percent. During the spring and summer months, output per cow continued to register gains of 2 percent from a year earlier despite the drought induced escalation in feed costs. The milk feed price ratio, an indicator of the profitability of milk production, dropped sharply during the

period as feed costs jumped, averaging almost a fifth lower than a year earlier during the summer months.

Dairy cow numbers and milk production in the five District states followed a pattern similar to that of the nation. Dairy cow numbers averaged almost 2 percent lower for the year in the District states, ranging from a 4.1 percent year-to-year decline in Indiana to a 1.7 percent gain in Iowa. However, the drop in cow numbers was more than offset by a 3.7 percent increase in output per cow across the five state region. Total output, therefore, registered a year-to-year increase of almost 2 percent. Output in Iowa was up more than 3 percent while remaining virtually unchanged from a year earlier in Indiana and Michigan. Milk production in Wisconsin, which is the nation's leading milk producing state and accounts for almost two-thirds of District production, recorded an increase of 2.4 percent from the 1987 level.

Along with the increase in production last year, commercial disappearance of milk continued to move higher in 1988. Weakness in sales during the early part of the year limited the annual gain to about 1.3 percent. The weakness was attributed to a drop in sales of cream based products which had a particularly depressing effect on the milkfat basis measure of commercial use. Partially offsetting this decline, sales of whole milk and skim milk based products were strong early in 1988. A recovery in sales of cream based products late in the year, along with continued strong sales for the whole and skim milk products, helped boost commercial disappearance for all of 1988 to 137.3 billion pounds on a milkfat basis.

With the rebound in production and a relatively moderate increase in commercial disappearance, net removals of manufactured dairy products from the commercial market by the Commodity Credit Corporation approached 9 billion pounds on a milkfat basis. Compared to the 6.7 billion pounds removed to support milk prices in 1987, removals last year were up nearly a third and they represented more than 6 percent of farm marketings. Butter purchases last year were up more than two-thirds from the 1987 level, while nonfat dry milk net removals were cut in half and cheese purchases were down 15 percent.

Milk prices rose sharply during the second half of 1988, after declining seasonally to \$11.30 per hundredweight at mid year, prices rose steadily during the second half, averaging \$13.50 per hundredweight in December. However, milk prices did not average above a year ago until the final three months of 1988, resulting in a drop in annual average milk price to \$12.21 per hundredweight compared to \$12.51 the previous year. However, the effective year-to-year drop in milk prices is somewhat less when adjusted to reflect the assess-

ments on milk marketings in early 1987 to fund the dairy termination program.

Milk prices during the first half of 1989 will likely surpass year-earlier levels. As specified in last summer's drought relief legislation, there was no reduction in the milk support price in January and the support price will be boosted 50 cents per hundredweight for the second quarter of 1989. During the first three months of the year milk prices have held about 90 cents per hundredweight above year-earlier levels.

Milk production in early 1989 has held above year-earlier levels as well. In the 21 major producing states, January output was up 2.4 percent from a year earlier as a 1 percent drop in milk cow numbers was more than offset by a 3.5 percent increase in output per cow. In February, milk production in the 21 states, which typically account for 85 percent of U.S. output, equaled the year-earlier level. However, adjusting for the extra day last year suggests that output was up almost 3.7 percent on an average daily basis. Once again, a year-to-year drop in the number of dairy cows in February was offset by an increase in output per cow.

For all of this year, initial USDA projections point to a slight increase in milk production. However, the dampening effect of high feed costs has not been reflected in lower output per cow. In addition, expected strong dairy prices during the first half could lead to larger-than-expected production. Commercial disappearance of milk is expected to continue its upward trend of the last few years, with USDA analysts pointing to a 1 to 3 percent year-to-year gain in 1989. If the increase in commercial utilization outpaces the production gain, the need for CCC purchases of manufactured dairy products to support milk prices will be reduced. The current USDA forecast points to net removals in the range of 5 to 7 billion pounds milk equivalent during 1989.

Peter J. Heffernan

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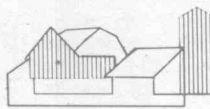
Selected Agricultural Economic Indicators

	Latest period	Value	Percent change from		
			Prior period	Year ago	Two years ago
Receipts from farm marketings (\$ millions)					
Crops*	November	15,641	-12.5	-2	-2
Livestock	November	8,405	-11.7	-6	-7
Government payments	November	6,917	-4.9	3	5
	November	318	-70.5	6	6
Real estate farm debt outstanding (\$ billions)					
Commercial banks	September 30	14.2	1.3 [†]	9	24
Farm Credit System	December 31	28.0	-2.6 [†]	-6	-20
Life insurance companies	September 30	9.40	-1.9 [†]	-7	-17
Nonreal estate farm debt outstanding (\$ billions)					
Commercial banks	September 30	29.2	1.5 [†]	0	-9
Farm Credit System	December 31	8.64	-5.7 [†]	-7	-18
Interest rates on farm loans (percent)					
7th District agricultural banks					
Operating loans	January 1	11.97	2.6 [†]	6	8
Real estate loans	January 1	11.27	2.2 [†]	5	7
Commodity Credit Corporation	April	9.50	4.1	43	58
Agricultural exports (\$ millions)					
Corn (mil. bu.)	January	3,357	-7.4	17	55
Soybeans (mil. bu.)	January	176	1.7	31	68
Wheat (mil. bu.)	January	67	-3.9	-18	-7
	December	109	11.8	-8	88
Farm machinery sales^p (units)					
Tractors, over 40 HP	February	3,785	-8.7	20	119
40 to 139 HP	February	2,474	-4.6	2	73
140 HP or more	February	1,311	-15.5	80	343
Combines	February	196	-46.3	-11	172

*Includes net CCC loans.

[†]Prior period is three months earlier.

^pPreliminary



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