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## Federal Reserve Bank of Chicago --

November 29, 1968

**USE OF FERTILIZER** continued to increase during the year ended June 30, but only about half as much as in the two years before. According to Department of Agriculture estimates, farmers boosted their application of fertilizer a mere 3 percent, compared with 7 and 8 percent in the two previous 12-month periods.

The reduced rate of increase apparently reflects both unfavorable weather and sharp cutbacks in crop acreage caused by greater participation in the government's feed-grain and wheat programs. The weather was not favorable for the application of fertilizer in the fall or spring. The 1967 harvest season was late over much of the nation, and frequent precipitation after the harvest hampered fall fertilization in many areas. Spring weather also prevented field preparation until later than usual. Farmers participating in the feed-grain program agreed to divert a little over 34 million acres from production—nearly 13 million more than the year before.

**Fertilizer Use Up But Increase Small**

	<u>1967</u> (thousand tons)	<u>1968</u>	<u>Change</u> (percent)
Illinois	3,297	3,183	— 3
Indiana	2,015	1,893	— 4
Iowa	2,281	2,429	+ 6
Michigan	832	829	—
Wisconsin	756	831	+10
United States	37,081	38,281	+ 3

Another factor that may have affected the use of fertilizer was the reduced level of farm income—especially the incomes of cash grain farmers. Expenditures for fertilizer are often curtailed when incomes are reduced, even though in most instances the decision is uneconomic.

These factors apparently had the greatest impact in the Midwest. The weather was not favorable for fertilizing in Corn Belt states in the fall and the spring months, and Midwest farmers generally reduced their crop acreage more than the average for the nation. Feed-grain acreage in states of the Seventh Federal Reserve District, for example, was reduced about 7 percent, compared with 3 percent for the nation. Generally lower farm prices in late 1967 and early 1968 were confined largely to important Midwest commodities, and reduced income was also confined largely to Midwest grain farmers.

In line with these developments, the tonnage of fertilizer applied in Illinois was actually reduced 3 percent. Indiana farmers cut the use of fertilizer about 4 percent from the pre-

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vious year. These drops were in sharp contrast with the upward trend in fertilizer use in those states for the past several years. Since 1960, the use of fertilizer had been increasing in Indiana at about 8 percent a year. In Illinois, the annual increase had been about 15 percent. In the past, other district states had also posted sharp increases in fertilizer use. Despite a 10 percent decline in the crop acreage of Seventh District states, district farmers have more than doubled their use of fertilizer since 1960.

These increases in use have been accomplished through a sizable rise in both the proportion of acreage fertilized and the amount of fertilizer applied to each acre. According to 1964 Agricultural Census data, the proportion of harvested crop acreage being fertilized in the district states rose from 37 percent in 1959 to 44 percent in 1964. The average application per fertilized acre was about 271 pounds in 1964—more than 50 pounds greater than the amount applied in 1959.

Even these increases in usage tend to understate the gains made in fertilization. With improved production techniques, fertilizer manufacturers have developed increasingly more potent fertilizers. Available plant nutrient content amounted to about 32 percent of the fertilizer applied in 1960. By this year, available plant nutrients had increased to about 38 percent.

Consumption of fertilizer will no doubt increase further in the coming year. Since the returns on money spent for fertilizer is usually high, farmers are likely to continue increasing both the proportion of acreage fertilized and the application per acre. In 1960-64, for example, it is estimated that farmers received a return of about \$2.50 for every dollar spent on fertilizers.

As this year, however, the increase in fertilizer use may be small. With expanding grain stocks and lower prices, farmers may be encouraged to idle larger acreages under government programs. Winter wheat acreage is expected by some forecasters to be 15 percent less than last year, and many observers have predicated changes in the feed-grain program designed to ensure a similar reduction in feed-grain acreage.

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