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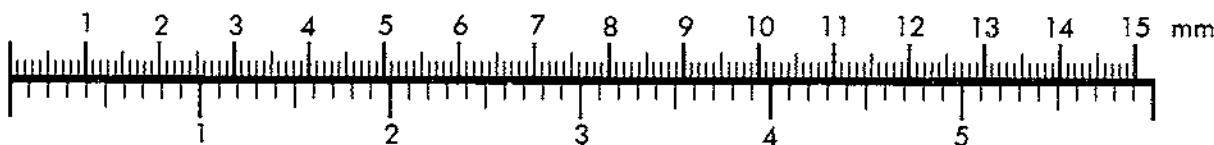


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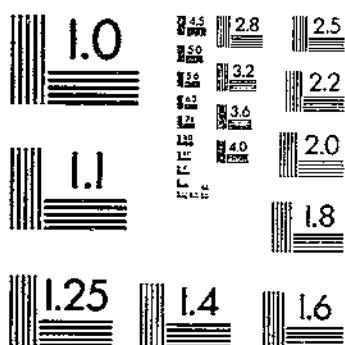
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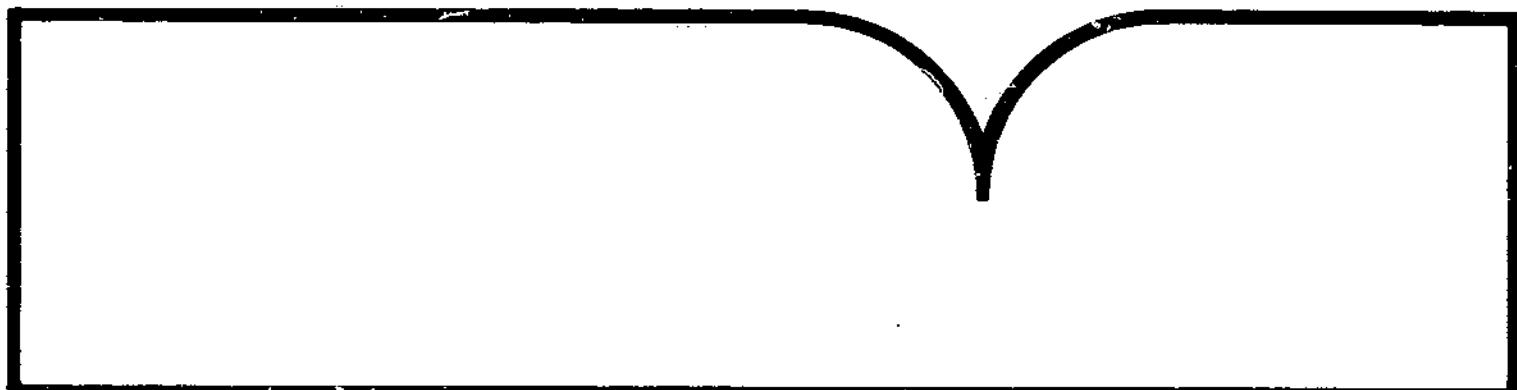


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Fertilizer Use and Price Statistics, 1960-91

(U.S.) Economic Research Service, Washington, DC

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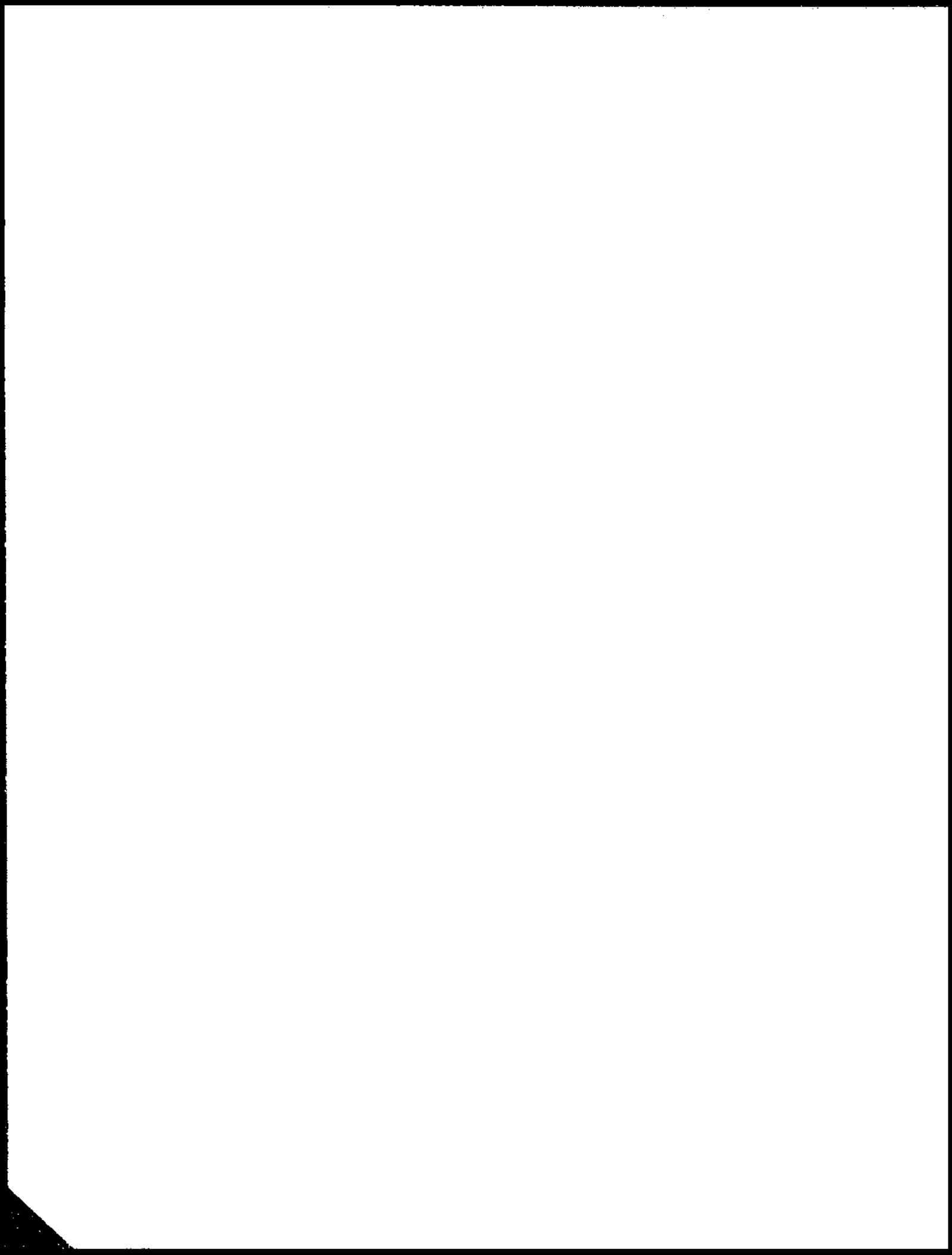
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Fertilizer Use and Price Statistics, 1960-91. By Harry Vroomen and Harold Taylor. Resources and Technology Division, Economic Research Service, U.S. Department of Agriculture. Statistical Bulletin No. 842.

Abstract

Fertilizer consumption grew rapidly throughout the 1960's and 1970's and peaked at 23.7 million nutrient tons in 1981. After falling to 18.1 million tons in 1983, use has remained relatively stable, ranging from 19.1 million to 21.8 million tons in 1984-91. Use declined from its peak level because of fewer planted acres and stabilizing rates of application. Retail fertilizer prices, while stable or declining during the 1960's, have varied widely since 1973. This bulletin includes quarterly or semiannual time series for retail fertilizer prices, annual retail and wholesale fertilizer price indexes, fertilizer consumption by plant nutrient and major selected products, consumption of mixed fertilizers and secondary and micronutrients, and statistics on fertilizer use per acre by nutrient in the major producing States for corn, cotton, soybeans, and wheat.

Keywords: Fertilizer, nitrogen, phosphate, potash, application rates, corn, cotton, soybeans, wheat.

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Fertilizer Use and Price Statistics, 1960-91

Harry Vroomen
Harold Taylor

Introduction

The sharp upward trend in fertilizer consumption throughout the 1960's and 1970's peaked in 1981 and then reversed. By 1983, the year of the Payment-in-Kind (PIK) program, total nutrient use had fallen by almost 25 percent. U.S. fertilizer use rebounded in 1984 along with crop acreage, and has remained relatively stable, ranging from 19.1 million to 21.8 million tons through 1991. Farm fertilizer prices, while stable or declining during the 1960's, have varied widely since 1973. After increasing significantly during 1974-75 and again in 1980, farm prices of most fertilizer products declined during 1981-86. Prices started to turn around in 1987, however, and by 1988, the index of prices paid by farmers for fertilizer rose by 10 percent from a year earlier. After rising by an additional 5 percent in 1989, prices have been relatively stable, declining by 2 percent by 1991.

The demand for fertilizer and the prices of fertilizer products are important economic factors affecting the fertilizer industry and the farm production sector. This report presents primary data on fertilizer use and prices obtained from various sources. Much of the data have been reported in various government and private sources. A consistent time series of the data, however, has not been readily available in a single source. Combining data into one source allows long-term changes in fertilizer use and prices to be examined.

Fertilizer Use

U.S. consumption of nitrogen, phosphate, and potash for all purposes rose from a total of 7.5 million nutrient tons in 1960 to a record high of 23.7 million nutrient tons by 1981, an increase of over 217 percent (table 1 and fig. 1).¹ Total nutrient use fell somewhat from this level along with total crop acreage, particularly in 1983 as a result of the PIK program, and totaled 20.3 million nutrient tons in 1991.

Nitrogen, phosphate, and potash all shared in the dramatic increase in fertilizer use. The relative use of nitrogen, however, increased much more rapidly. Nitrogen consumption stood at 2.7 million nutrient tons in 1960, or 36.7 percent of total nutrient consumption. By 1981, nitrogen use had

¹ All fertilizer-use data are reported on a fertilizer-year basis that begins on July 1 of the previous year and ends on June 30.

increased by 335 percent to 11.9 million nutrient tons, its highest level on record. Nitrogen use stood at 11.2 million tons in 1991, and accounted for 55 percent of total nutrient consumption. This relative gain in nitrogen consumption resulted primarily from favorable crop yield responses to nitrogenous fertilizers.

While nitrogen's share of total plant nutrient consumption increased over this period, phosphate's share declined from 34.5 percent in 1960 to 20.4 percent by 1991. Phosphate use, which increased by 119 percent from 2.6 million nutrient tons in 1960 to a peak of 5.6 million nutrient tons in 1977, basically followed a downward trend since 1979.

Potash consumption, historically below that of both nitrogen and phosphate, surpassed phosphate consumption for the first time in 1977 and will likely hold this position. Total use of potash increased by 193 percent, from 2.2 million nutrient tons in 1960 to 6.3 million nutrient tons in 1981. Since then, the consumption of potash has fallen, paralleling phosphate consumption. While the share of total primary nutrient consumption held by nitrogen increased and phosphate decreased, potash's share has remained stable.

Commercial fertilizer consumption data for 1984-91 were obtained from various issues of Commercial Fertilizers, a report compiled by the Tennessee Valley Authority (1).² Data from these reports are based on fertilizer consumption information submitted by State fertilizer regulatory officials. Data for the earlier years were obtained from various issues of Commercial Fertilizers, a report compiled by the Agricultural Statistics Board of U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) (7, 8). These reports are based on fertilizer tonnage reports prepared by State fertilizer control officials and voluntary responses of more than 1,500 fertilizer manufacturers, blenders, and sales outlets. Both reports represent total commercial fertilizer tonnage sold or shipped for farm and nonfarm use.

Estimated Fertilizer Use By Selected Crops

U.S. consumption of nitrogen, phosphate, and potash is tied to total crop acreage.³ As crop acreage increases, fertilizer consumption naturally increases as well (table 2 and figs. 2-5). Detailed information on fertilizer use is available for four principal crops. Fertilizer-use data on corn, cotton, soybeans, and wheat were obtained from annual surveys conducted since 1964 by NASS. The survey includes the principal producing States of the four crops during each survey year. Significant per-acre use differences between crops and between States are apparent in the appendix tables.

² Underscored numbers in parentheses in the text and numbers in parentheses in the tables cite sources listed in the References section.

³ All acreage data included in this report refer to planted acreage, unless otherwise noted.

Information for each crop includes plant nutrient application rates (figs. 6-8), the proportion of the crop fertilized with each plant nutrient (figs. 9-11), and the proportion of the crop receiving any fertilizer (fig. 12). Information for 1964-85 is based on harvested acreage for cotton, soybeans, and wheat, while information for corn is based only on that portion of the crop harvested for grain. Information for 1986-91 is based on planted acreage for corn, cotton, and soybeans, and harvested acreage for wheat.

The proportion of total fertilizer nutrients used on corn, cotton, soybeans, and wheat has increased since 1964. In 1964, the first year for which detailed data are available by crop, production of these crops accounted for an estimated 48.6 percent of total plant nutrient consumption.⁴ In 1991, these crops accounted for an estimated 69 percent of total plant nutrient consumption.

Corn

U.S. farmers use more fertilizer on corn than on any other crop. In 1964, they applied an estimated 3.5 million tons of primary plant nutrients to their corn acres, or about 33.5 percent of total nutrient consumption (table 2). By 1985, plant nutrient use on corn had more than tripled to 10.6 million tons and accounted for 48.8 percent of total plant nutrient consumption. This share stood at 46.6 percent in 1991.

The dramatic increase in fertilizer use on corn through 1985 is primarily due to greater application rates but was also enhanced by a rise in the proportion of corn acres fertilized with nitrogen and an increase in corn acreage overall. Application rates of nitrogen and potash were 140 percent greater in 1985 than in 1964, while the rate of phosphate applied rose by 46 percent.

⁴ Estimates of fertilizer nutrient use by crop are computed as the product of the average nutrient application rate per acre, the average proportion of acres receiving that particular plant nutrient, and U.S. planted crop acreage for 1964-91. This is in contrast to earlier reports, which used harvested acreage of these selected crops to estimate nutrient use (11, 12). In using planted acres for corn, cotton, and soybeans for 1964-85 and planted wheat acres for 1964-91, we assume that the nutrient application rate per planted acre is no different than the application rate per harvested acre. The nutrient application rate per harvested acre is probably an upper limit for the application rate per planted acre. Acreage originally planted to a particular crop may subsequently have been abandoned and therefore not have received as much fertilizer as if it were ultimately harvested. Consequently, use of planted acreage has the possibility of biasing upwards estimated nutrient use by crop. However, the use of harvested acreage has the potential for significantly underestimating nutrient use by crop. In 1986, for example, 72.1 million acres were planted to wheat while 60.7 million acres were harvested. Using only harvested acreage when estimating nutrient use by wheat would be equivalent to attributing no fertilizer use to the additional 11.4 million wheat acres planted in 1986.

While corn acreage increased by almost 27 percent over the period, nitrogen, phosphate, and potash use rose by 249, 105, and 234 percent, respectively. Phosphate application rates trended upward between 1964 and 1980, but have declined since, while potash application rates have declined from their peak level of 87 pounds per acre in 1984. Nitrogen application rates, on the other hand, increased through 1985 reaching 140 pounds per acre, but declined somewhat thereafter.

Fertilizer application rates on corn also vary between States. Nitrogen application rates in 1991 were highest in Illinois at 159 pounds per acre (app. table 3), as rates in the Corn Belt were generally the highest. The lowest application rate for nitrogen of the States surveyed was 71 pounds per acre for South Dakota. Application rates of phosphate and potash follow a similar pattern, as farmers in the Corn Belt apply the greatest quantities per acre, while farmers in South Dakota and Nebraska apply the smallest (app. tables 5 and 7).

Cotton

Of the crops surveyed, cotton consumes the smallest share of total U.S. plant nutrient consumption and the least acreage. Cotton farmers applied an estimated 682,800 tons of primary plant nutrients in 1991, or only 3.4 percent of total U.S. plant nutrient use (table 2). In 1964, however, combined application rates of 69 pounds for nitrogen, 49 pounds for phosphate, and 37 pounds for potash exceeded those of the other surveyed crops (app. tables 10, 12, and 14). During that year, cotton was second only to corn in total nutrient consumption and used an estimated 722,900 tons of primary plant nutrients, or 6.9 percent of the U.S. total.

Fertilizer use on cotton has generally followed changes in acreage and application rates, with phosphate and potash showing the greatest declines among the three plant nutrients. By 1991, cotton acreage stood 5 percent below its 1964 level. Combined with changes in nutrient application rates, this decline in acreage has resulted in a 32-percent decline in the use of phosphate and a 22-percent decline in the use of potash. Increased nitrogen application rates, however, have resulted in a 14-percent increase in nitrogen use since 1964.

Fertilizer application rates on cotton vary significantly between States, especially for nitrogen and potash. Nitrogen application rates in 1991 ranged from 69 pounds per acre in Texas to 170 pounds per acre in Arizona, while rates of potash applied per acre ranged from 10 pounds in Arizona to 79 pounds in Louisiana (app. tables 10 and 14). Average application rates for each nutrient have also been affected by regional shifts in cotton production. Average application rates generally declined as cotton acreage expanded in the South, where application rates for all plant nutrients were below the average of the States surveyed.

Soybeans

Soybeans received an estimated 143,000 tons of primary plant nutrients in 1964, or about 1.4 percent of total U.S. nutrient consumption (table 2).

Fertilizer use on soybeans increased dramatically from this level, and by 1979, total plant nutrient use on soybeans reached 1.7 million tons, or 7.6 percent of total consumption. These changes were due to the combined effects of an increase in the proportion of soybean acreage fertilized, an increase in application rates, and a 125-percent increase in acreage.

Since 1979, however, fertilizer use in soybean production has trended downward and by 1991 stood at 1.1 million nutrient tons. This decrease in fertilizer use stems from a drop in the proportion of soybean acreage fertilized and reductions in soybean acreage. Application rates for nitrogen and phosphate have remained relatively stable since 1979 but have continued to increase for potash. Overall, potash consumption has increased most significantly on soybeans. Consumption of nitrogen, phosphate, and potash increased by 619, 473, and 856 percent, respectively, during 1964-91, while soybean acreage rose by 86 percent.

The rates of nitrogen applied to soybeans, a nitrogen-fixing crop, were relatively low and ranged from 15-52 pounds per acre in 1991 for the States surveyed, with an average of only 25 pounds (app. table 17). Average application rates of potash were significantly greater in 1991 at 77 pounds per acre, and ranged from 20 pounds in Nebraska to 91 pounds in Illinois and Ohio (app. table 21). Application rates of potash are generally higher in the Corn Belt, where soybeans are commonly rotated with corn.

Wheat

Wheat, the second most important crop with respect to fertilizer use, received an estimated 2.7 million tons of primary plant nutrients in 1991, or 13.3 percent of the U.S. total (table 2). This is a considerable increase from the 708,000 tons consumed in 1964 when wheat ranked third in total tonnage behind corn and cotton. Nitrogen consumption on wheat rose the most over this period as total use of nitrogen increased by over 385 percent, while wheat acreage was up 26 percent from 1964. This rapid increase in nitrogen use is a result of application rates that have more than doubled and an increase in the proportion of wheat acres fertilized. While only 47 percent of wheat acres were fertilized with nitrogen in 1964, this share stood at 80 percent in 1991 (app. table 23).

The rate of phosphate and potash applied per acre of wheat has also increased over time, although not as dramatically as the rate of nitrogen. Use of phosphate and potash has been more closely related to changes in wheat acreage. The use of phosphate and potash in wheat production increased by 154 and 263 percent, respectively, during 1964-91. As with corn, cotton, and soybeans, fertilizer application rates for wheat differed between States. In 1991, nitrogen application rates ranged from a low of 33 pounds per acre in Montana to a high of 100 pounds per acre in Idaho (app. table 24). Phosphate and potash application rates also differed significantly in 1991, ranging from 26-65 pounds per acre for phosphate and 9-83 pounds per acre for potash (app. tables 26 and 28).

Other Crops

While detailed data on fertilizer use by crops other than corn, cotton, soybeans, and wheat are not collected in any consistent manner, an estimate of fertilizer use by other crops can be developed. This estimate is developed by adding the estimated total tonnage of each plant nutrient used on the four selected crops and subtracting it from the total tonnage of each nutrient used.⁵ By allocating this remaining nitrogen, phosphate, and potash to producing principal crops other than corn, cotton, soybeans, and wheat, we can also estimate an average nutrient application rate for other crops (as a group).⁶

In 1964, crops other than corn, cotton, soybeans, and wheat used an estimated 45.2 percent of the nitrogen, 52.9 percent of the phosphate, and 59.6 percent of the potash consumed (table 2). By 1991, these proportions had dropped to an estimated 35.0, 24.2, and 28.5 percent, respectively, as these crops used 3.9 million nutrient tons of nitrogen, 1.0 million nutrient tons of phosphate, and 1.4 million nutrient tons of potash.

Planted acreage of other crops decreased during 1964-91, while corn, soybean, and wheat acreage generally increased. The share of each plant nutrient consumed by crops other than corn, cotton, soybeans, and wheat subsequently declined. Trends in application rates of nitrogen, phosphate, and potash on other crops resemble those of corn, soybeans, and wheat but have generally changed more slowly (fig. 13). While total acreage of other crops fell by over 22 percent, estimated use of nitrogen increased by 99 percent, and phosphate and potash use fell by 44 and 13 percent, respectively.

Fertilizer Products

While information on fertilizer is generally categorized by plant nutrient (nitrogen, phosphate, or potash), U.S. farmers purchase specific products to apply to their crops. These products can be classified as either direct application materials or mixed fertilizers. Direct application materials are fertilizer products that contain primarily one plant nutrient, while mixed fertilizers contain two or more.

Mixed fertilizers constituted almost 63 percent of total fertilizer consumption in 1960 (table 3 and fig. 14). This share steadily declined to below 38 percent by 1991 as the share for direct application materials

⁵ This estimate will be an upper limit on fertilizer use by crops other than corn, cotton, soybeans, and wheat because the total of each nutrient consumed includes tonnage sold or shipped for both farm and nonfarm use.

⁶ Crop acreages included are planted acreages for sorghum, oats, barley, rice, flaxseed, peanuts, sunflowers, potatoes, sweetpotatoes, sugar beets, rye, and dry edible beans, and harvested acreages for all hay, tobacco, and sugarcane.

increased from 37 to over 62 percent. Recent trends in the use of specific direct application materials suggest that farmers are using more high-analysis products.

Nitrogen Products

The consumption of major direct-application nitrogen materials increased through the early 1980's (table 4 and fig. 15). The trend since about 1973 has been toward anhydrous ammonia, nitrogen solutions, and urea and away from ammonium nitrate. These trends were induced by price changes that favored high-analysis products, reflecting economics in transportation, distribution, and storage and the ease and accuracy of applying nitrogen solutions.

Phosphate Products

Use of directly applied phosphate fertilizer has trended downward since the early 1970's (table 5 and fig. 16). The trend throughout the 1960's and 1970's was toward increased use of triple superphosphates (grades over 22 percent), relative to normal superphosphates because of price changes reflecting transportation, distribution, and storage economies. Since 1979, however, consumption of both normal and triple superphosphate has declined by 82 and 60 percent.

The use of diammonium phosphate (DAP), a mixed fertilizer material containing primarily 18-percent nitrogen and 46-percent phosphate, has increased dramatically since 1960. DAP consumption of 20,388 material tons in 1960 increased to almost 3.7 million material tons by 1979. Since then DAP consumption has been tied more closely to crop acreage as phosphate application rates have stabilized or declined, and stood at 3.4 million material tons in 1991.

Potash Products

The use of potassium chloride, the major directly applied potash product, has increased over thirteenfold from its 1960 level (table 5 and fig. 17). While the sharp upward trend in use reversed, along with total crop acreage, after 1981, total use of potassium chloride remains high. Although total crop acreage in 1991 was down over 13 percent from its record level in 1981, consumption of potassium chloride was off by less than 3 percent.

Fertilizer Prices

Throughout the 1960's, domestic prices of most fertilizer products declined as growth in industry capacity exceeded growth in demand (tables 6-7 and figs. 18-21). As a consequence of this excess capacity, the Cost of Living Council under Economic Stabilization Program regulations froze domestic fertilizer prices at the producer level on August 15, 1971, because of "insufficient cost justification to implement price increases" (4). After price controls took effect, fertilizer prices rose faster in the export market, increasing the spread between domestic and world fertilizer prices.

Consequently, domestically produced fertilizer moved into the export market. Meanwhile, U.S. crop production expanded. To increase the availability of fertilizers essential to peak crop production in the United States, the government decontrolled prices on October 25, 1973.

With decontrol came sharp increases in fertilizer prices. At their peak in the spring of 1975, farm prices of most fertilizer products had doubled since 1973. However, by 1976, high fertilizer prices in 1975 had increased production and decreased consumption, causing fertilizer manufacturers' inventories to increase. Consequently, farm prices of nitrogen and phosphates fell by 19-34 percent, while the price of potassium chloride fell by 6 percent.

Fertilizer prices began to rise again in 1979 as a result of strong domestic and export demands and rapidly rising production, transportation, and retailing costs. Rising energy prices, in particular, were instrumental in increasing production costs, especially for nitrogen products. Prices of most fertilizer products increased in 1980 and 1981 and held steady or declined a year later as crop acreage declined in 1982. Farm fertilizer prices fell during 1983 as a record level of crop acreage was diverted under the PIK program.

Prices rebounded in 1984 as planted acreage increased by almost 36 million acres, but fell in 1985 and again in 1986 in response to declining domestic consumption and plentiful supplies. Overall, fertilizer prices paid by farmers fell by 21 percent from May 1984 to October 1986 as the prices-paid index for fertilizer fell from 147 to 116 (where 1977=100). Prices then gradually began to increase and rose steadily from October 1986 to April 1989. The prices of most fertilizer materials have fallen from April 1989 levels, but have remained relatively more stable through April 1992.

References

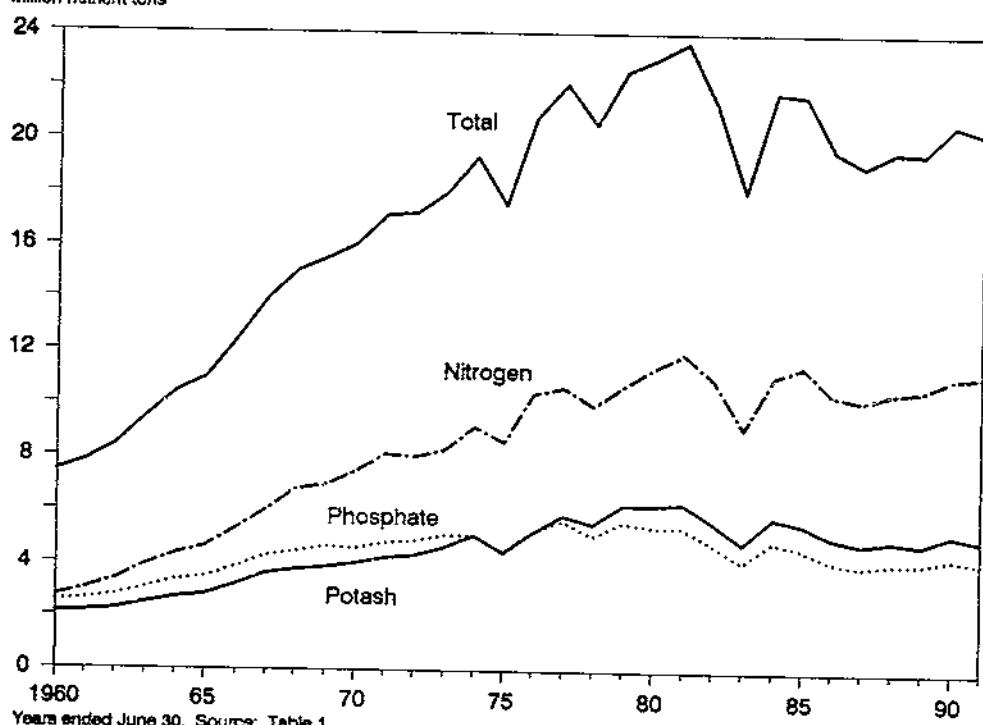
- (1) Tennessee Valley Authority, Economic and Marketing Staff. Commercial Fertilizers. Dec. 1991 and earlier issues.
- (2) " U.S. Department of Agriculture, Economic Research Service. Agricultural Resources; Inputs Outlook and Situation. various issues, 1986-92.
- (3) _____ . Fertilizer: Outlook and Situation. various issues, 1981-82.
- (4) _____ . Fertilizer Situation. FS-4 and various issues, 1971-81.
- (5) _____ . Inputs: Outlook and Situation. various issues, 1983-85.
- (6) _____ , Statistical Reporting Service. Agricultural Prices. various annual summaries, 1966-91.

- (7) _____. Commercial Fertilizers: Consumption of Commercial Fertilizers, Primary Plant Nutrients, and Micronutrients. SB-472, Nov. 1976.
- (8) _____. Commercial Fertilizers. various annual issues, 1977-85.
- (9) _____. Crop Production. various annual summaries, 1966-91.
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- (11) Vroomen, Harry. Fertilizer Use and Price Statistics, 1960-85. SB-750, U.S. Dept. of Agr., Econ. Res. Serv., Feb. 1987.
- (12) _____. Fertilizer Use and Price Statistics, 1960-88. SB-780, U.S. Dept. of Agr., Econ. Res. Serv., June 1989.

Figure 1

Consumption of primary plant nutrients, 1960-91

Million nutrient tons

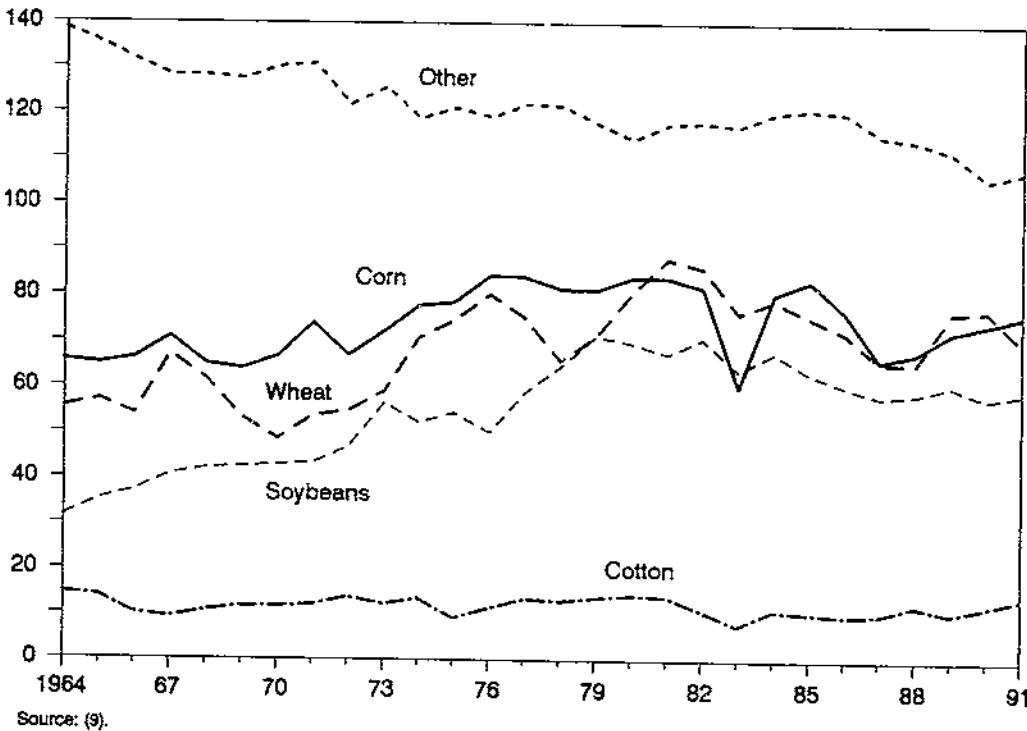


Years ended June 30. Source: Table 1.

Figure 2

Crop acreage planted, 1964-91

Million acres

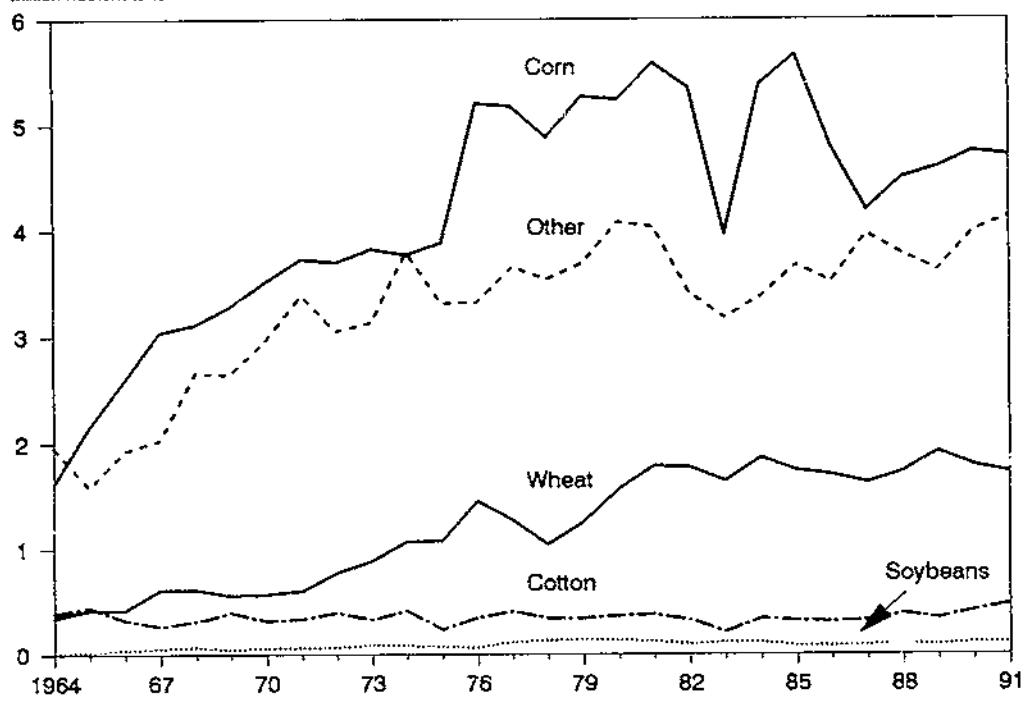


Source: (9).

Figure 3

Estimated consumption of nitrogen, selected crops, 1964-91

Million nutrient tons

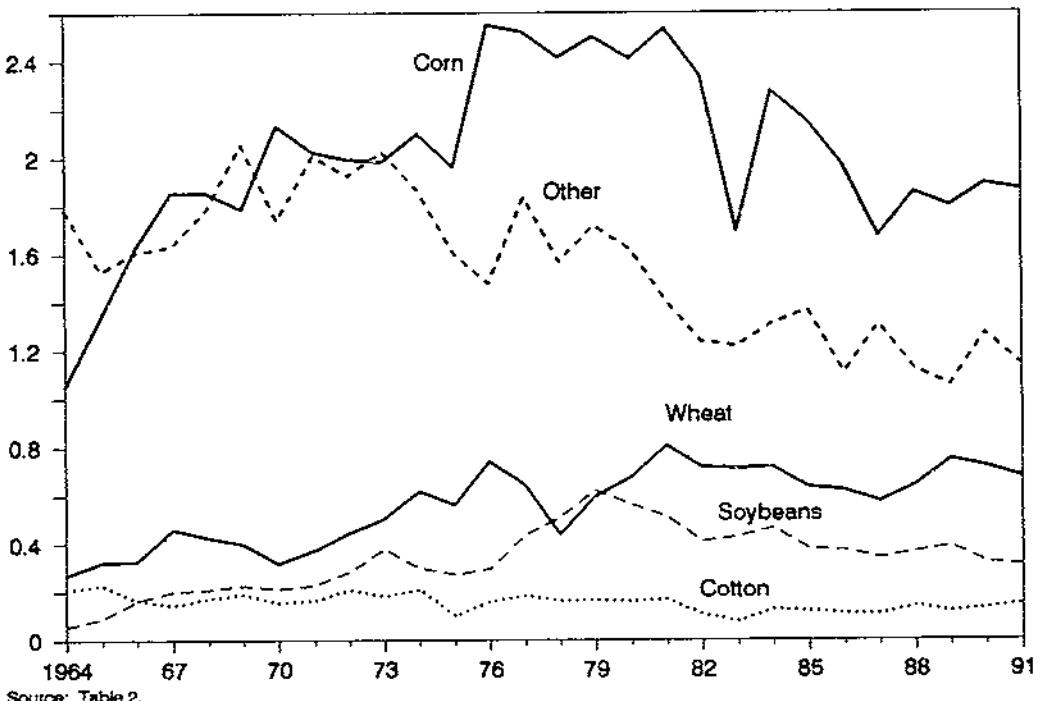


Source: Table 2.

Figure 4

Estimated consumption of phosphate, selected crops, 1964-91

Million nutrient tons

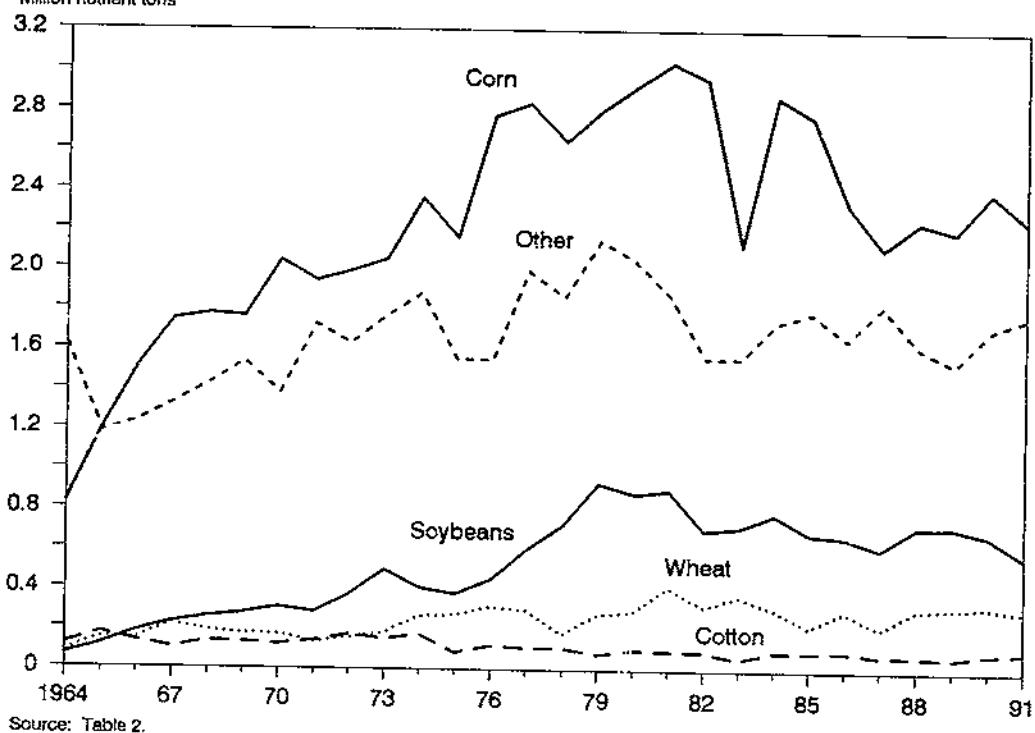


Source: Table 2.

Figure 5

Estimated consumption of potash, selected crops, 1964-91

Million nutrient tons

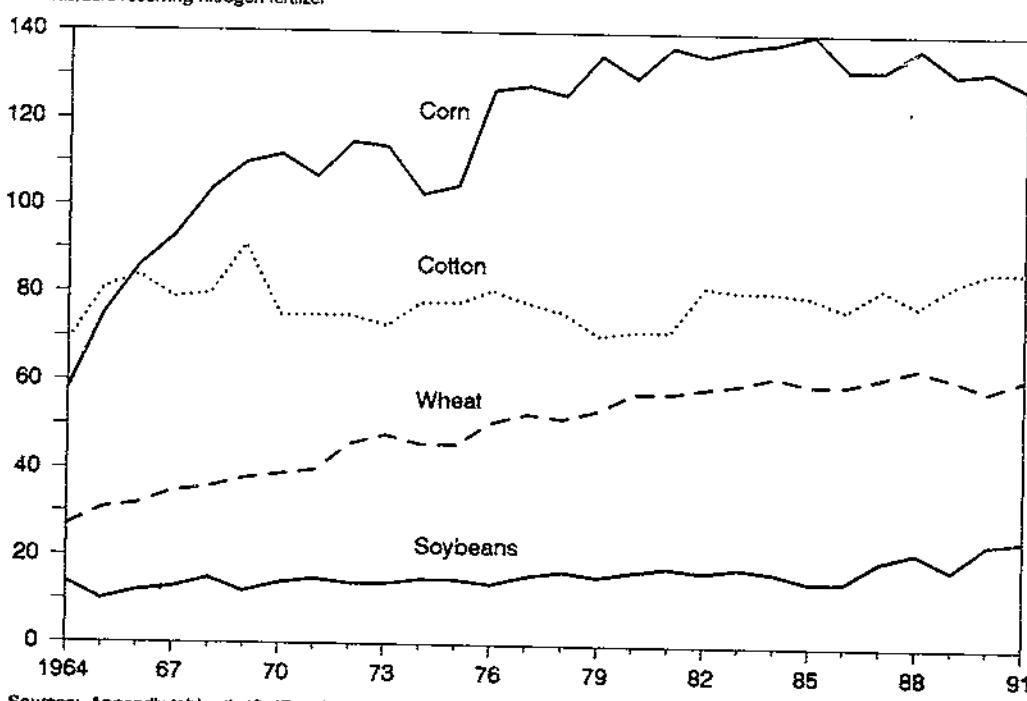


Source: Table 2.

Figure 6

Nitrogen application rates, selected crops, 1964-91

Pounds/acre receiving nitrogen fertilizer

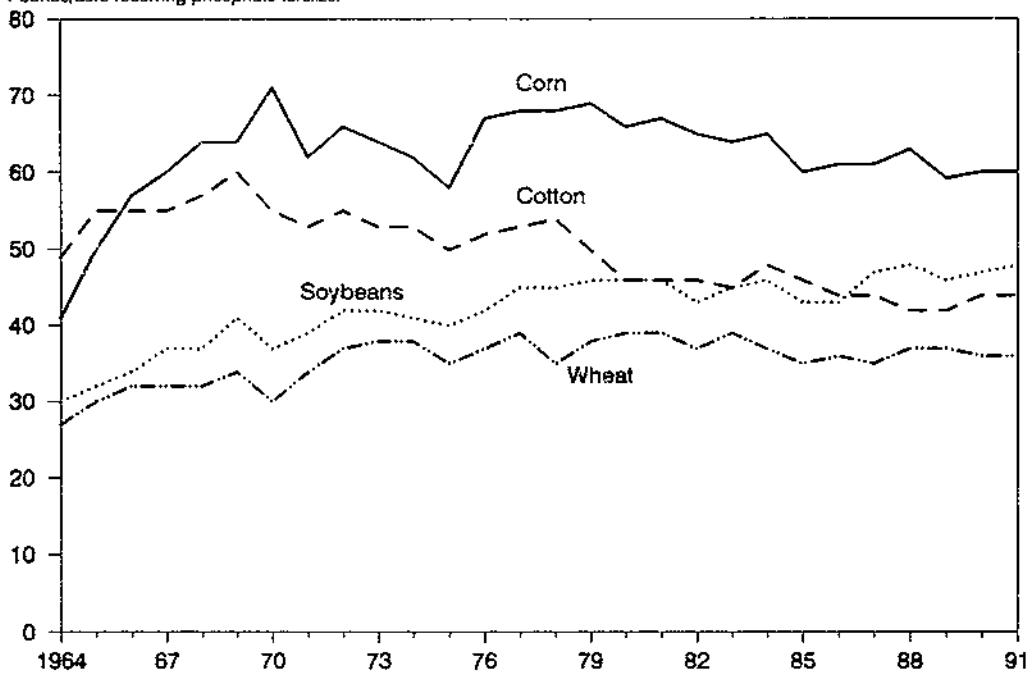


Sources: Appendix tables 3, 10, 17, and 24.

Figure 7

Phosphate application rates, selected crops, 1964-91

Pounds/acre receiving phosphate fertilizer

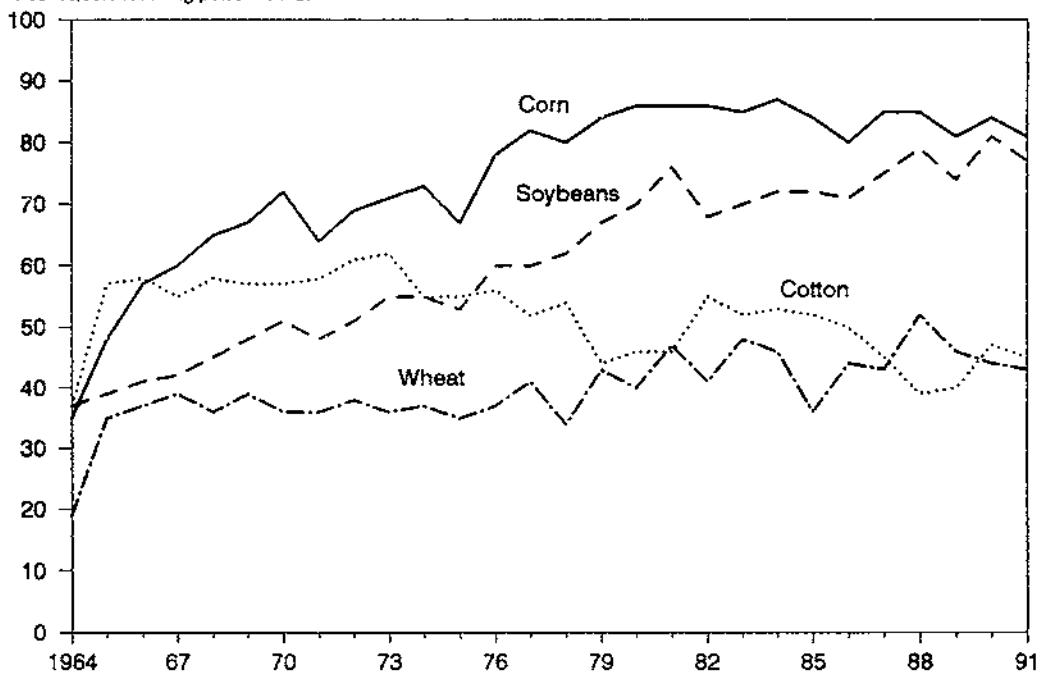


Sources: Appendix tables 5, 12, 19, and 26.

Figure 8

Potash application rates, selected crops, 1964-91

Pounds/acre receiving potash fertilizer

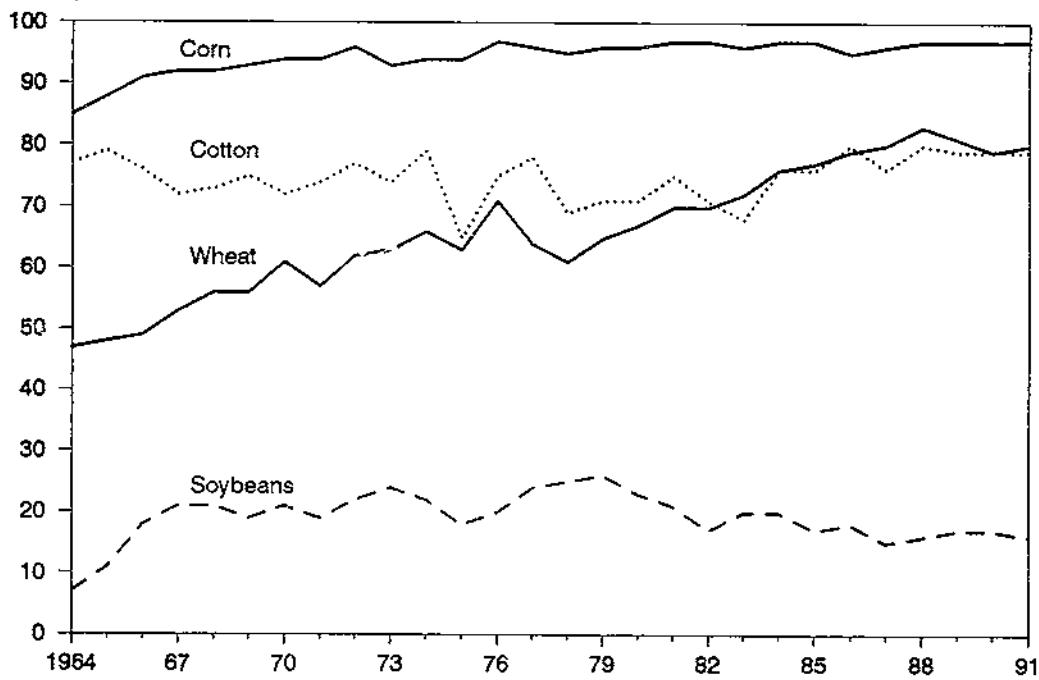


Sources: Appendix tables 7, 14, 21, and 28.

Figure 9

Percentage of crop acreage receiving nitrogen, 1964-91

Percent

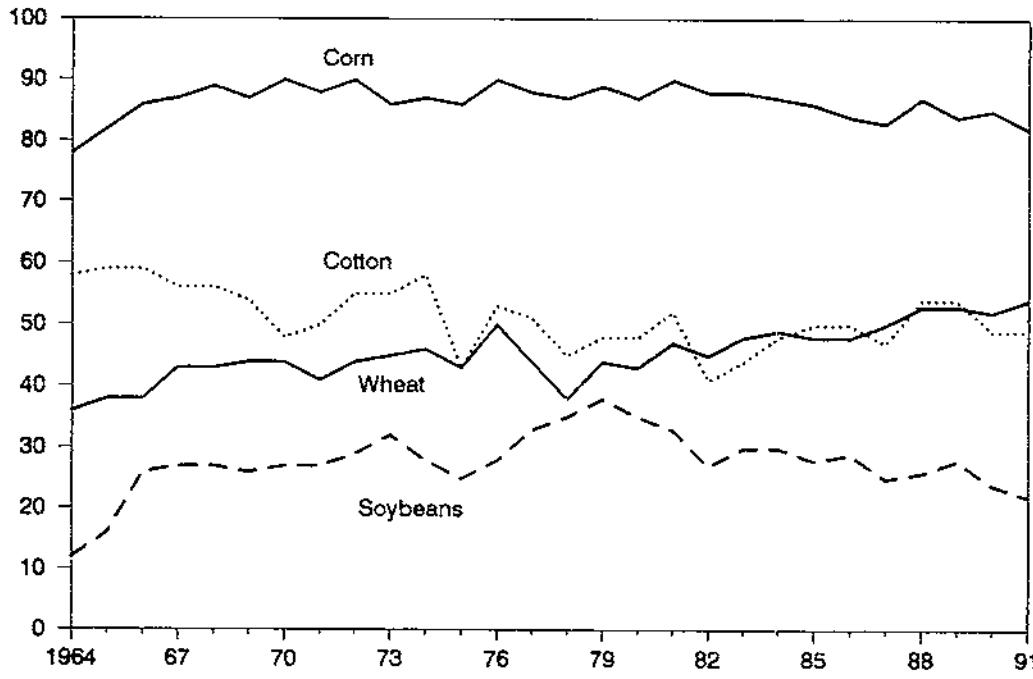


Sources: Appendix tables 2, 9, 16, and 23.

Figure 10

Percentage of crop acreage receiving phosphate, 1964-91

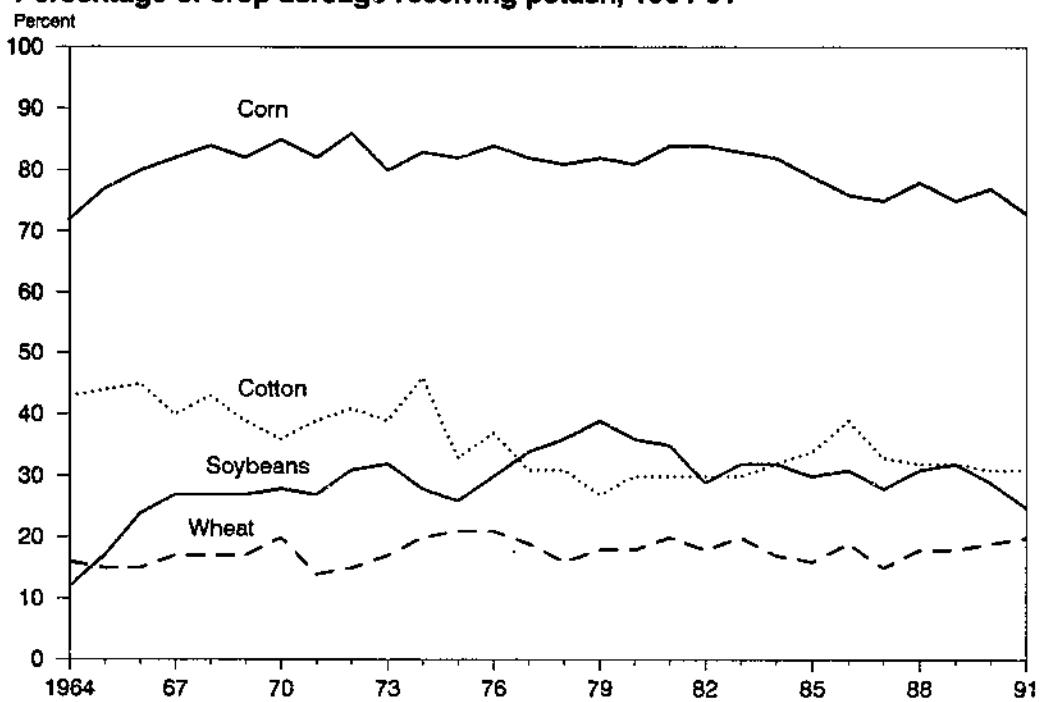
Percent



Sources: Appendix tables 4, 11, 18, and 25.

Figure 11

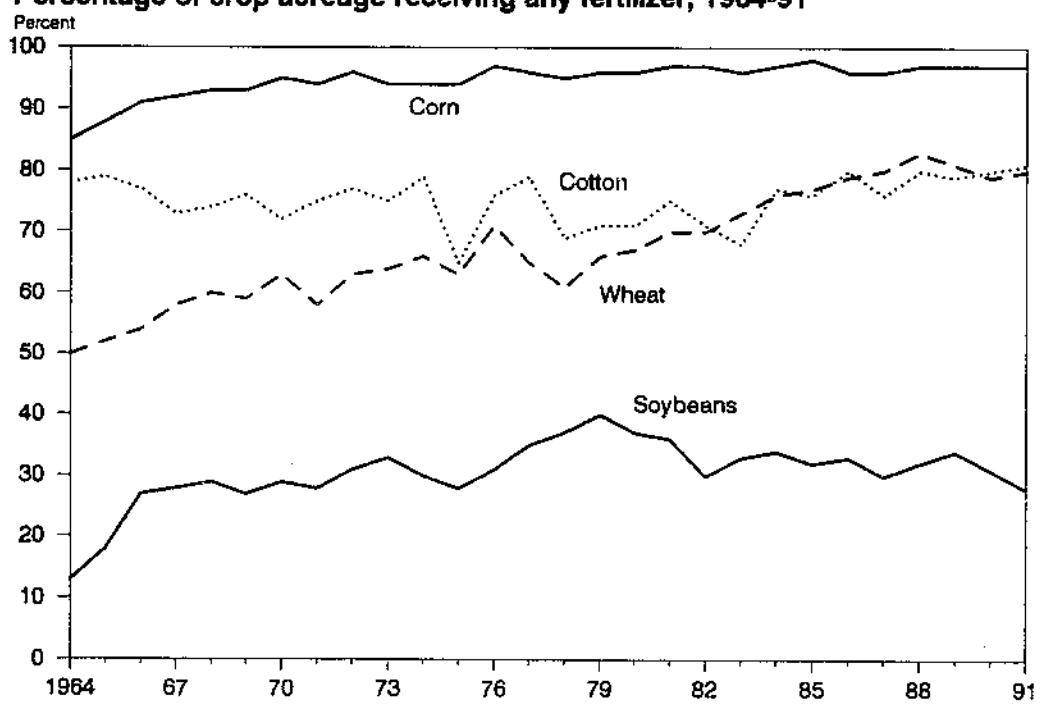
Percentage of crop acreage receiving potash, 1964-91



Sources: Appendix tables 6, 13, 20, and 27.

Figure 12

Percentage of crop acreage receiving any fertilizer, 1964-91

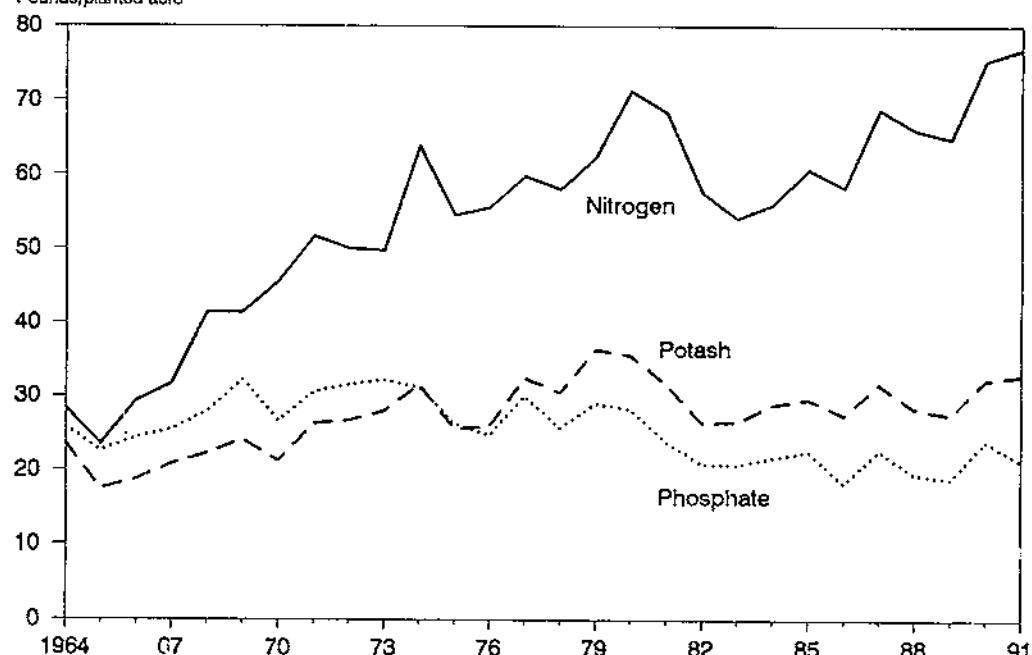


Sources: Appendix tables 1, 8, 15, and 22.

Figure 13

Estimated nutrient application rates, other crops, 1964-91¹

Pounds/planted acre

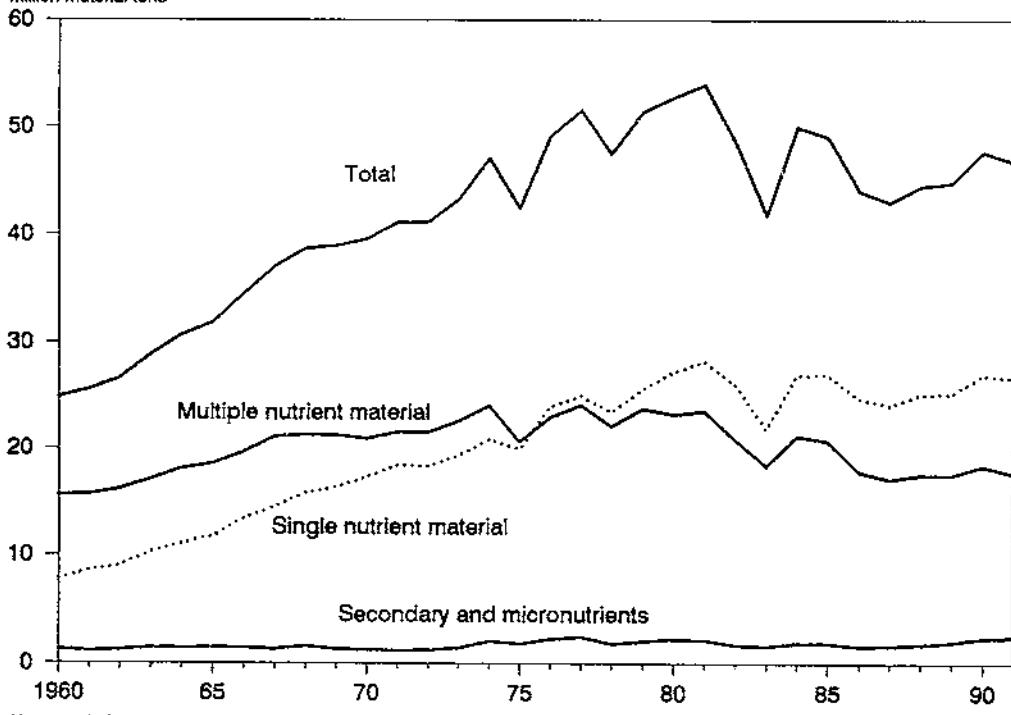


1/ Calculated as the estimated use of each nutrient by other crops (table 2) divided by the sum of planted acres for sorghum, oats, barley, rice, flaxseed, peanuts, sunflower, potatoes, sweetpotatoes, sugar beets, dry edible beans, and rye, and harvested acres for all hay, tobacco, and sugarcane.

Figure 14

Consumption of fertilizer, 1960-91

Million material tons

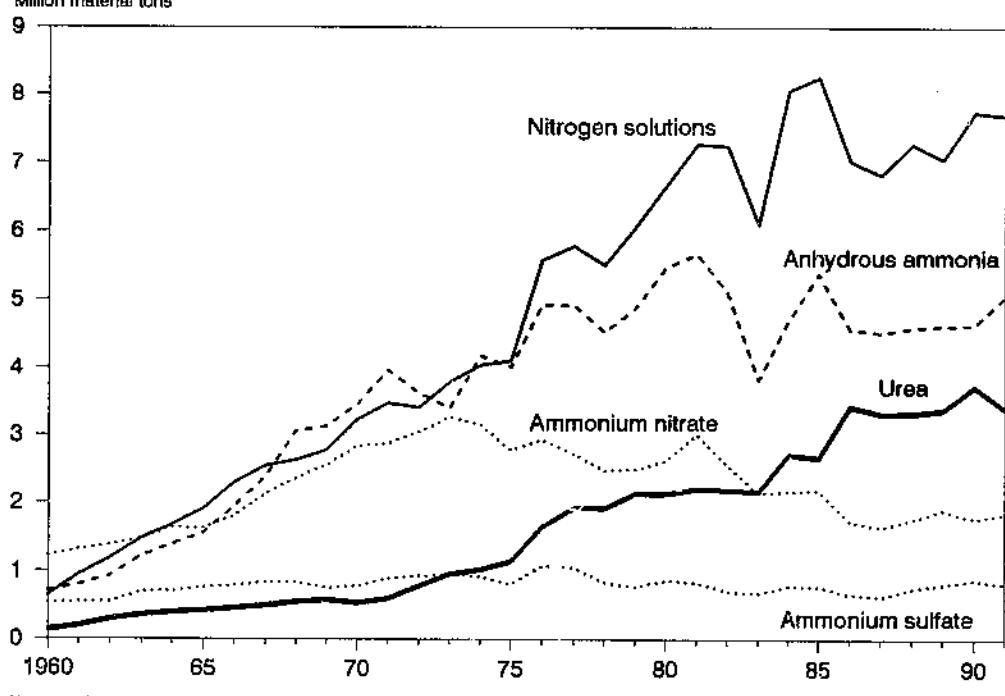


Years ended June 30. Source: Table 3.

Figure 15

Consumption of selected nitrogen materials, 1960-91

Million material tons

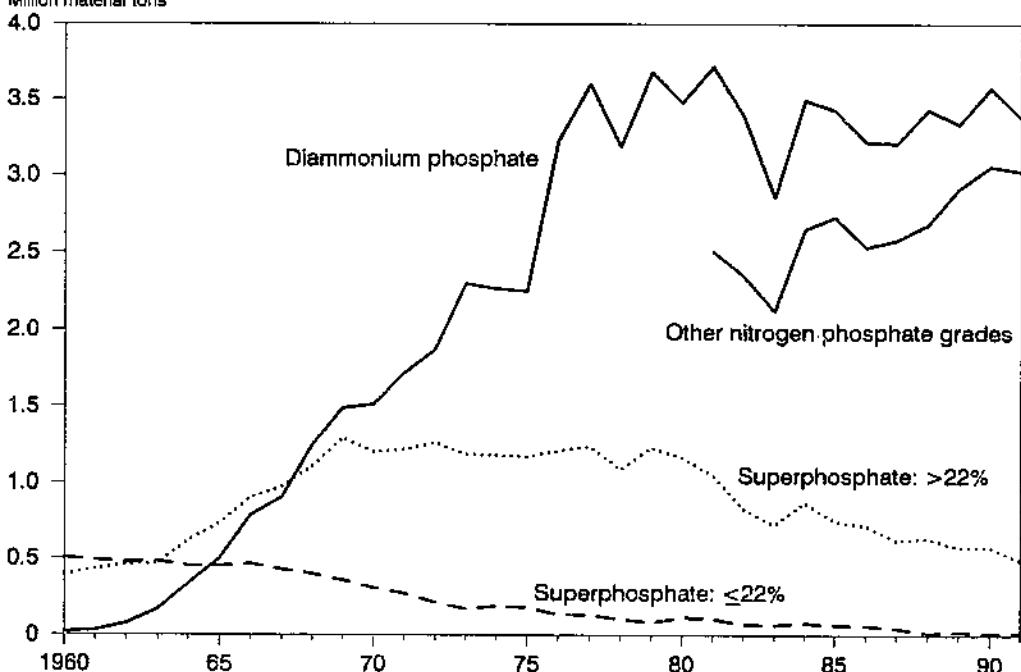


Years ended June 30. Source: Table 4.

Figure 16

Consumption of selected phosphate fertilizers, 1960-91

Million material tons

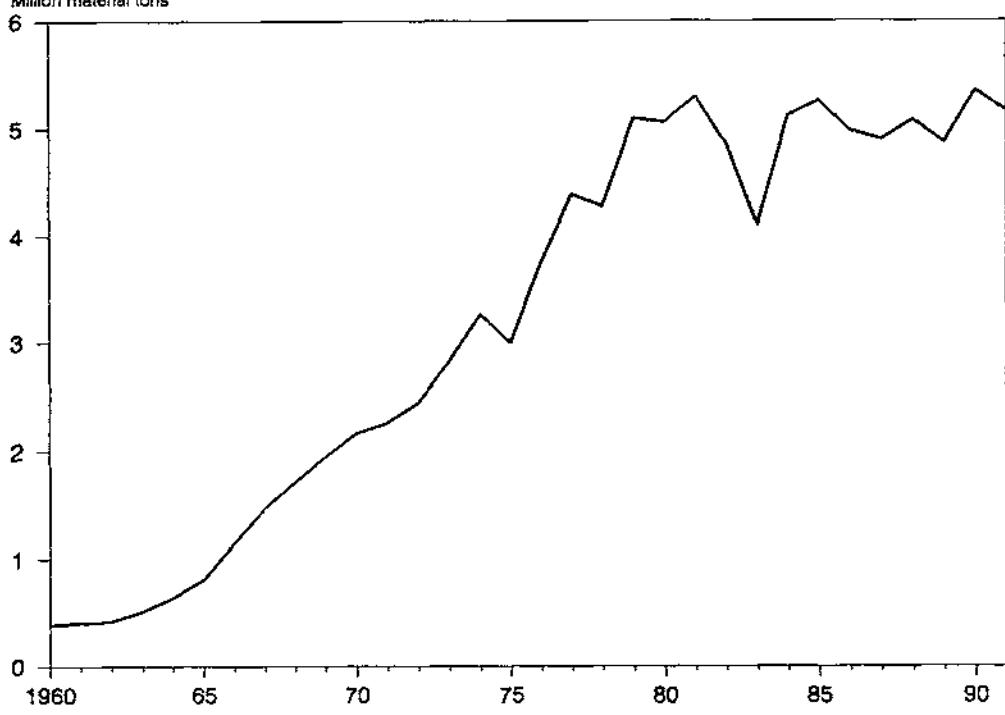


Note: Data for other nitrogen-phosphate grades, 1960-80, not available. Years ended June 30. Source: Table 5.

Figure 17

Consumption of potassium chloride, 1960-91

Million material tons

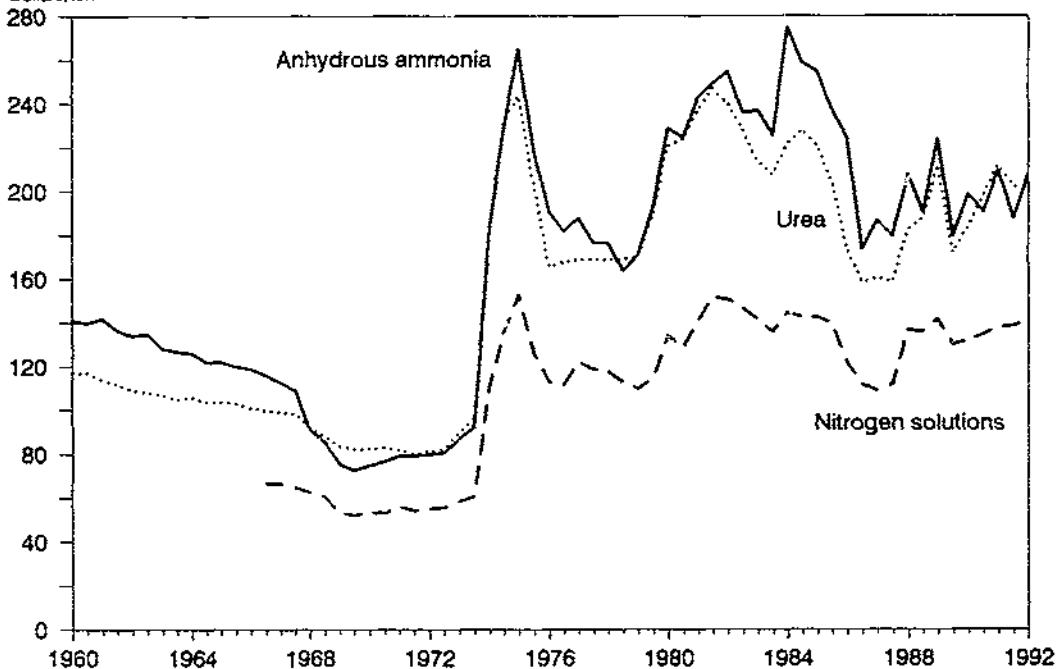


Years ended June 30. Source: Table 5.

Figure 18

Average farm prices of selected nitrogen fertilizers, 1960-92¹

Dollars/ton



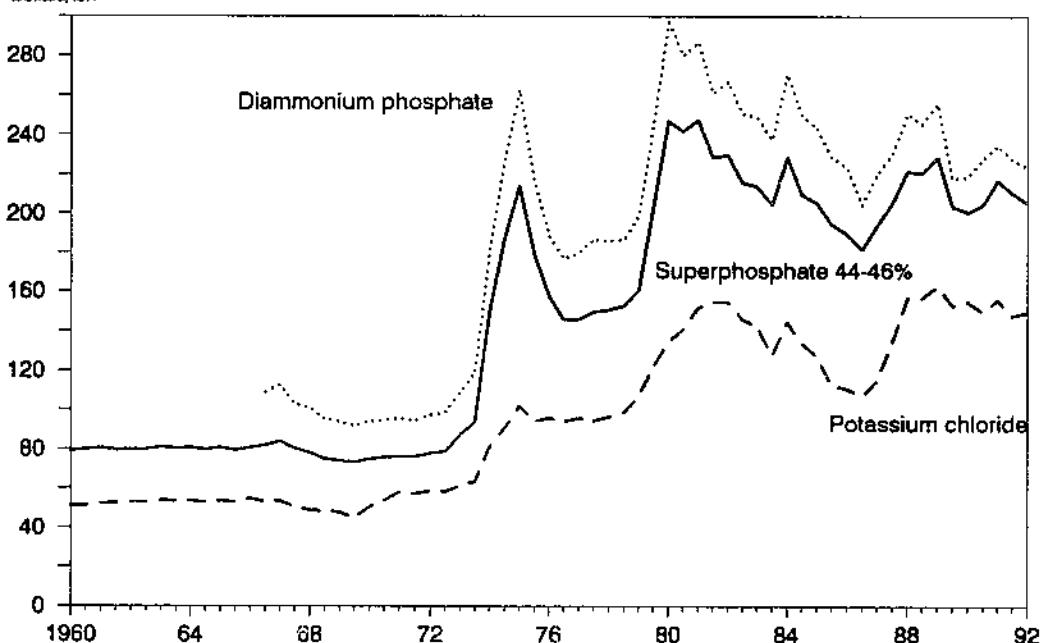
1/ Farm prices are for April and September for 1960-76, and March and October for 1977-85, and April and October for 1986-92.

Note: Data for nitrogen solutions 1960-66, not available. Source: Table 6.

Figure 19

Average farm prices of selected phosphate and potash fertilizers, 1960-92¹

Dollars/ton



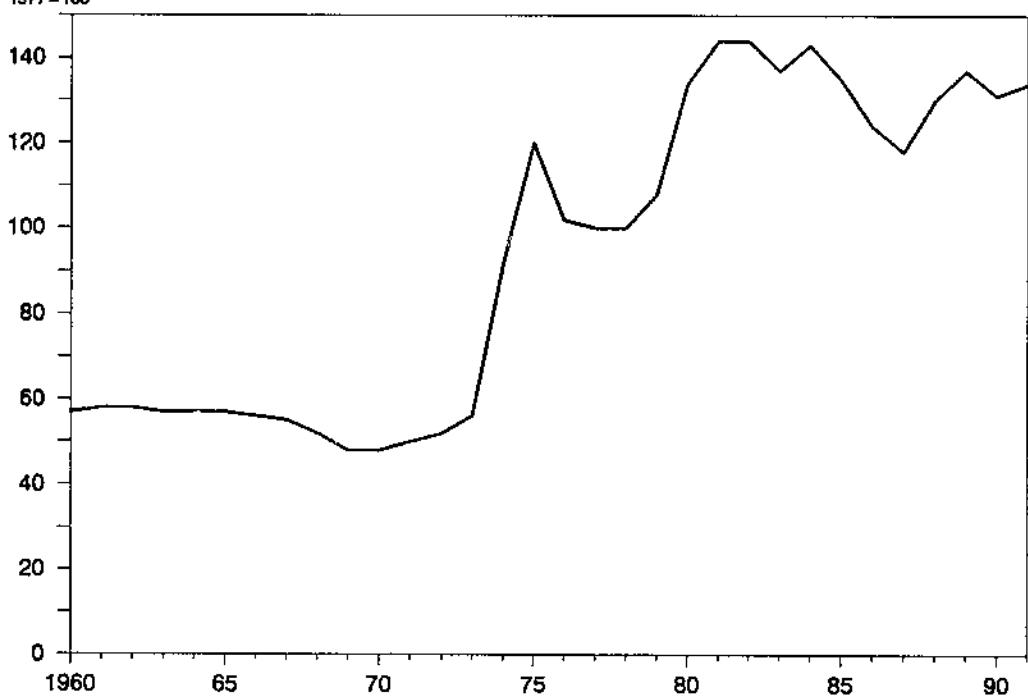
1/ Farm prices are for April and September for 1960-76, March and October for 1977-85, and April and October for 1986-92.

Data for diammonium phosphate, 1960-65, not available. Source: Table 6.

Figure 20

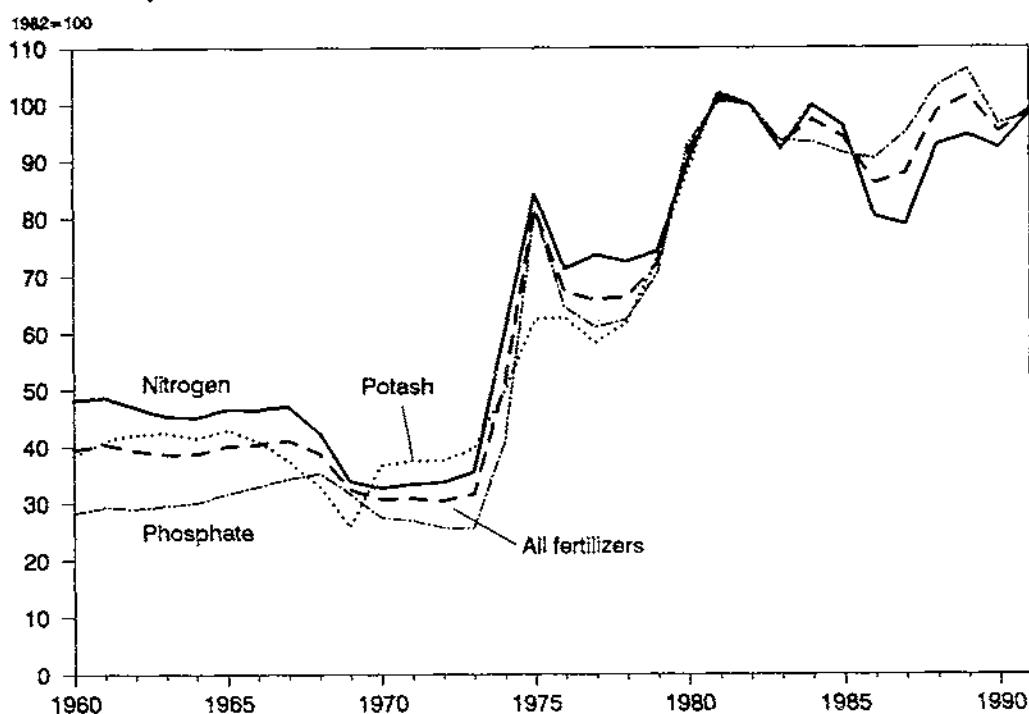
Index of fertilizer prices paid by farmers, 1960-91

1977=100



Source: Table 7.

Figure 21
Producer price indexes, fertilizer products, 1960-91



Note: Data for potash, 1985-91, not available. Source: Table 7.

Table 1--U.S. consumption of plant nutrients

| Year ended June 30 | Primary nutrient content 1/ | | | | Share of total by nutrient | | |
|---------------------------------|-----------------------------|-----------|---------|----------|----------------------------|-----------|--------|
| | Nitrogen | Phosphate | Potash | Total | Nitrogen | Phosphate | Potash |
| ----- 1,000 nutrient tons ----- | | | | | | | |
| ----- Percent ----- | | | | | | | |
| 1960 | 2,738.0 | 2,572.4 | 2,153.3 | 7,463.7 | 36.68 | 34.47 | 28.85 |
| 1961 | 3,030.8 | 2,645.1 | 2,168.5 | 7,844.4 | 38.64 | 33.72 | 27.64 |
| 1962 | 3,370.0 | 2,807.0 | 2,270.5 | 8,447.5 | 39.89 | 33.23 | 26.88 |
| 1963 | 3,929.1 | 3,072.9 | 2,503.4 | 9,505.4 | 41.34 | 32.33 | 26.34 |
| 1964 | 4,352.8 | 3,377.8 | 2,729.7 | 10,460.3 | 41.61 | 32.29 | 26.10 |
| 1965 | 4,638.5 | 3,512.2 | 2,834.5 | 10,985.2 | 42.22 | 31.97 | 25.80 |
| 1966 | 5,326.3 | 3,897.1 | 3,221.2 | 12,444.6 | 42.80 | 31.32 | 25.88 |
| 1967 | 6,027.1 | 4,304.7 | 3,641.8 | 13,973.6 | 43.13 | 30.81 | 26.06 |
| 1968 | 6,787.6 | 4,453.3 | 3,792.6 | 15,033.5 | 45.15 | 29.62 | 25.23 |
| 1969 | 6,957.6 | 4,665.6 | 3,891.6 | 15,514.8 | 44.84 | 30.07 | 25.08 |
| 1970 | 7,459.0 | 4,573.8 | 4,035.5 | 16,068.3 | 46.42 | 28.46 | 25.11 |
| 1971 | 8,133.6 | 4,803.4 | 4,231.4 | 17,168.4 | 47.38 | 27.98 | 24.65 |
| 1972 | 8,022.3 | 4,863.7 | 4,326.8 | 17,212.8 | 46.61 | 28.26 | 25.14 |
| 1973 | 8,295.1 | 5,085.2 | 4,648.7 | 18,029.0 | 46.01 | 28.21 | 25.78 |
| 1974 | 9,157.2 | 5,098.6 | 5,082.6 | 19,338.4 | 47.35 | 26.37 | 26.28 |
| 1975 | 8,600.8 | 4,506.8 | 4,453.2 | 17,560.9 | 48.98 | 25.66 | 25.36 |
| 1976 | 10,411.6 | 5,227.6 | 5,209.7 | 20,848.8 | 49.94 | 25.07 | 24.99 |
| 1977 | 10,647.4 | 5,629.7 | 5,833.8 | 22,110.9 | 48.15 | 25.46 | 26.38 |
| 1978 | 9,964.6 | 5,096.1 | 5,526.1 | 20,586.9 | 48.40 | 24.75 | 26.84 |
| 1979 | 10,714.7 | 5,605.8 | 6,244.5 | 22,565.1 | 47.48 | 24.84 | 27.67 |
| 1980 | 11,406.7 | 5,431.5 | 6,245.1 | 23,083.3 | 49.42 | 23.53 | 27.05 |
| 1981 | 11,923.8 | 5,434.4 | 6,319.5 | 23,677.7 | 50.36 | 22.95 | 26.69 |
| 1982 | 10,983.1 | 4,813.9 | 5,630.9 | 21,427.9 | 51.26 | 22.47 | 26.28 |
| 1983 | 9,127.0 | 4,137.5 | 4,831.0 | 18,095.9 | 50.44 | 22.86 | 26.70 |
| 1984 | 11,092.2 | 4,901.1 | 5,796.8 | 21,790.1 | 50.90 | 22.49 | 26.60 |
| 1985 | 11,492.6 | 4,657.6 | 5,552.5 | 21,702.6 | 52.95 | 21.46 | 25.58 |
| 1986 | 10,424.4 | 4,177.9 | 5,052.6 | 19,654.9 | 53.04 | 21.26 | 25.71 |
| 1987 | 10,209.5 | 4,008.3 | 4,836.5 | 19,054.3 | 53.58 | 21.04 | 25.38 |
| 1988 | 10,511.6 | 4,128.5 | 4,972.7 | 19,612.8 | 53.60 | 21.05 | 25.35 |
| 1989 | 10,592.6 | 4,116.9 | 4,838.0 | 19,547.5 | 54.19 | 21.06 | 24.75 |
| 1990 | 11,076.0 | 4,344.7 | 5,202.8 | 20,623.5 | 53.71 | 21.07 | 25.23 |
| 1991 | 11,179.0 | 4,150.5 | 4,984.3 | 20,313.9 | 55.03 | 20.43 | 24.54 |

1/ Includes Puerto Rico.

Sources: (1, 7, 8).

Table 2--Estimated U.S. plant nutrient use by selected crops 1/

| Year ended June 30 : | Nitrogen | | | | Phosphate | | | | Potash | | | | | | | |
|-------------------------|----------|--------|----------|---------|-----------|---------|--------|----------|--------|---------|---------|--------|----------|-------|---------|--|
| | Corn | Cotton | Soybeans | Wheat | Other | Corn | Cotton | Soybeans | Wheat | Other | Corn | Cotton | Soybeans | Wheat | Other | |
| 1,000 nutrient tons | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | |
| 1964 : | 1,622.5 | 394.1 | 15.5 | 353.2 | 1,967.4 | 1,052.5 | 210.8 | 57.1 | 270.6 | 1,786.8 | 829.4 | 118.0 | 70.4 | 84.6 | 1,627.3 | |
| 1965 : | 2,150.6 | 452.8 | 19.4 | 426.8 | 1,588.9 | 1,336.0 | 229.6 | 90.2 | 327.0 | 1,529.4 | 1,204.4 | 177.5 | 116.8 | 150.6 | 1,185.3 | |
| 1966 : | 2,596.2 | 330.4 | 40.3 | 424.2 | 1,935.3 | 1,626.2 | 167.9 | 164.8 | 329.0 | 1,609.2 | 1,512.7 | 135.1 | 183.5 | 150.1 | 1,239.8 | |
| 1967 : | 3,044.1 | 268.7 | 55.7 | 623.9 | 2,034.7 | 1,857.2 | 145.5 | 203.9 | 462.8 | 1,635.3 | 1,750.4 | 103.9 | 231.4 | 223.0 | 1,333.0 | |
| 1968 : | 3,115.6 | 318.7 | 66.6 | 623.5 | 2,663.2 | 1,854.8 | 174.2 | 211.1 | 425.6 | 1,787.6 | 1,777.9 | 136.1 | 256.8 | 189.3 | 1,432.5 | |
| 1969 : | 3,287.1 | 405.5 | 48.5 | 568.7 | 2,647.8 | 1,789.1 | 192.5 | 226.7 | 399.8 | 2,057.5 | 1,765.3 | 132.1 | 275.6 | 177.2 | 1,541.4 | |
| 1970 : | 3,519.7 | 322.5 | 63.3 | 579.8 | 2,973.7 | 2,136.3 | 157.7 | 215.2 | 321.7 | 1,743.0 | 2,046.0 | 122.6 | 307.6 | 175.5 | 1,383.9 | |
| 1971 : | 3,730.5 | 342.8 | 62.0 | 613.6 | 3,384.8 | 2,023.6 | 163.7 | 228.9 | 375.1 | 2,012.1 | 1,946.5 | 139.7 | 281.7 | 135.6 | 1,727.9 | |
| 1972 : | 3,705.4 | 404.3 | 72.2 | 783.1 | 3,057.4 | 1,993.6 | 211.8 | 285.4 | 447.0 | 1,925.9 | 1,991.6 | 175.1 | 370.5 | 156.5 | 1,633.1 | |
| 1973 : | 3,830.1 | 337.1 | 93.0 | 895.9 | 3,137.0 | 1,988.4 | 181.9 | 380.0 | 506.6 | 2,028.3 | 2,052.0 | 150.9 | 497.6 | 181.3 | 1,766.9 | |
| 1974 : | 3,772.8 | 421.5 | 86.6 | 1,073.4 | 3,797.9 | 2,101.9 | 210.3 | 301.2 | 620.9 | 1,864.3 | 2,361.0 | 173.0 | 404.1 | 262.9 | 1,881.6 | |
| 1975 : | 3,884.8 | 240.3 | 73.7 | 1,085.3 | 3,316.8 | 1,963.3 | 101.9 | 273.0 | 563.6 | 1,605.1 | 2,162.4 | 86.0 | 376.1 | 275.3 | 1,553.4 | |
| 1976 : | 5,210.2 | 353.4 | 70.4 | 1,455.6 | 3,322.0 | 2,550.3 | 160.3 | 295.6 | 743.7 | 1,477.7 | 2,771.1 | 120.5 | 452.4 | 312.3 | 1,553.3 | |
| 1977 : | 5,181.1 | 416.1 | 113.2 | 1,279.0 | 3,658.0 | 2,523.1 | 184.9 | 437.9 | 647.0 | 1,836.8 | 2,835.1 | 110.3 | 601.6 | 293.7 | 1,993.1 | |
| 1978 : | 4,888.2 | 350.7 | 137.5 | 1,046.6 | 3,541.6 | 2,415.9 | 162.5 | 509.6 | 438.8 | 1,569.2 | 2,646.3 | 111.9 | 722.1 | 179.5 | 1,866.2 | |
| 1979 : | 5,274.3 | 352.3 | 148.5 | 1,253.5 | 3,686.0 | 2,499.2 | 167.7 | 624.1 | 597.1 | 1,717.6 | 2,803.2 | 83.0 | 933.0 | 276.4 | 2,148.9 | |
| 1980 : | 5,244.3 | 371.5 | 136.7 | 1,569.7 | 4,084.5 | 2,412.9 | 160.5 | 562.9 | 677.4 | 1,617.8 | 2,927.2 | 100.3 | 881.1 | 290.8 | 2,045.6 | |
| 1981 : | 5,587.8 | 386.9 | 127.7 | 1,791.5 | 4,029.9 | 2,535.5 | 171.4 | 512.7 | 808.8 | 1,406.0 | 3,037.6 | 98.9 | 898.3 | 414.8 | 1,869.9 | |
| 1982 : | 5,359.6 | 330.3 | 102.4 | 1,780.7 | 3,410.1 | 2,341.1 | 107.0 | 411.5 | 717.9 | 1,236.4 | 2,956.7 | 93.6 | 698.9 | 318.2 | 1,563.5 | |
| 1983 : | 3,959.9 | 218.3 | 114.8 | 1,650.7 | 3,183.4 | 1,695.7 | 78.5 | 430.5 | 715.3 | 1,217.5 | 2,124.2 | 61.8 | 714.3 | 366.8 | 1,563.9 | |
| 1984 : | 5,390.7 | 343.1 | 115.2 | 1,866.3 | 3,377.0 | 2,277.4 | 128.4 | 467.5 | 718.1 | 1,309.8 | 2,873.0 | 94.5 | 780.5 | 309.7 | 1,739.1 | |
| 1985 : | 5,666.1 | 324.8 | 80.5 | 1,745.8 | 3,675.4 | 2,153.0 | 122.9 | 380.0 | 634.8 | 1,366.9 | 2,768.8 | 94.5 | 681.8 | 217.7 | 1,789.8 | |
| 1986 : | 4,807.5 | 309.4 | 81.5 | 1,708.0 | 3,518.0 | 1,964.4 | 110.5 | 376.5 | 622.7 | 1,103.9 | 2,330.9 | 97.9 | 664.5 | 301.2 | 1,658.0 | |
| 1987 : | 4,194.4 | 324.0 | 87.3 | 1,632.6 | 3,971.3 | 1,675.9 | 100.6 | 341.8 | 576.0 | 1,314.0 | 2,110.1 | 77.2 | 610.9 | 212.3 | 1,826.0 | |
| 1988 : | 4,499.5 | 390.5 | 103.6 | 1,740.5 | 3,777.7 | 1,855.8 | 141.9 | 367.2 | 642.5 | 1,121.1 | 2,244.8 | 78.1 | 720.5 | 306.7 | 1,622.6 | |
| 1989 : | 4,601.0 | 347.1 | 93.1 | 1,923.8 | 3,627.6 | 1,798.2 | 120.1 | 391.7 | 751.2 | 1,055.8 | 2,196.0 | 67.8 | 720.1 | 317.2 | 1,537.0 | |
| 1990 : | 4,748.4 | 419.5 | 117.9 | 1,801.2 | 3,989.1 | 1,891.4 | 133.1 | 326.0 | 723.4 | 1,270.9 | 2,398.7 | 90.0 | 678.8 | 323.1 | 1,712.3 | |
| 1991 : | 4,993.6 | 448.4 | 111.4 | 1,712.7 | 3,912.8 | 1,989.0 | 142.3 | 327.1 | 688.0 | 1,004.1 | 2,492.5 | 92.1 | 672.8 | 307.2 | 1,419.7 | |

1/ Estimates of plant nutrient use for corn, cotton, soybeans, and wheat are computed as the product of the nutrient application rate per acre, the proportion of acreage receiving that particular nutrient, and the planted crop acreage. Estimates of plant nutrient use by other crops are determined by subtracting the plant nutrient use of the four selected crops from the total use of each plant nutrient.

Table 3--U.S. consumption of fertilizer

| | | Gross tonnages 1/ | | | Share of total | | | |
|-----------------------------------|--------|-----------------------|-------------------------------|-----------------------------|--------------------------------------|-------|-------------------------------|-----------------------------------|
| | | Year ended June 30 | Multiple-nutrient material | Single-nutrient material | Secondary and micro- nutrients | Total | Multiple-nutrient material | Total 3/ nutrient materials |
| <hr/> | | | | | | | | |
| : | | | | | | | | |
| : ----- 1,000 material tons ----- | | | | | | | | |
| : -- Percent -- | | | | | | | | |
| : | | | | | | | | |
| 1960 : | 15,650 | 7,850 | 1,378 | 24,877 | 62.91 | 37.09 | | |
| 1961 : | 15,735 | 8,639 | 1,194 | 25,567 | 61.54 | 38.46 | | |
| 1962 : | 16,205 | 9,100 | 1,310 | 26,615 | 60.89 | 39.11 | | |
| 1963 : | 17,157 | 10,299 | 1,459 | 28,844 | 59.48 | 40.76 | | |
| 1964 : | 18,093 | 11,113 | 1,475 | 30,681 | 58.97 | 41.03 | | |
| 1965 : | 18,559 | 11,756 | 1,521 | 31,836 | 58.30 | 41.70 | | |
| 1966 : | 19,659 | 13,412 | 1,461 | 34,532 | 56.93 | 43.07 | | |
| 1967 : | 21,132 | 14,552 | 1,397 | 37,081 | 56.99 | 43.01 | | |
| 1968 : | 21,294 | 15,832 | 1,617 | 38,743 | 54.96 | 45.04 | | |
| <hr/> | | | | | | | | |
| 1969 : | 21,234 | 16,380 | 1,334 | 38,949 | 54.52 | 45.48 | | |
| 1970 : | 20,961 | 17,331 | 1,297 | 39,589 | 52.95 | 47.05 | | |
| 1971 : | 21,513 | 18,389 | 1,216 | 41,118 | 52.32 | 47.68 | | |
| 1972 : | 21,511 | 18,385 | 1,310 | 41,206 | 52.20 | 47.80 | | |
| 1973 : | 22,547 | 19,275 | 1,466 | 43,288 | 52.09 | 47.91 | | |
| 1974 : | 24,067 | 20,897 | 2,130 | 47,094 | 51.10 | 48.90 | | |
| 1975 : | 20,647 | 19,959 | 1,878 | 42,484 | 48.60 | 51.40 | | |
| 1976 : | 22,958 | 23,935 | 2,296 | 49,189 | 46.67 | 53.33 | | |
| 1977 : | 24,099 | 24,999 | 2,525 | 51,624 | 46.68 | 53.32 | | |
| <hr/> | | | | | | | | |
| 1978 : | 22,110 | 23,511 | 1,877 | 47,497 | 46.55 | 53.45 | | |
| 1979 : | 23,742 | 25,600 | 2,139 | 51,480 | 46.12 | 53.88 | | |
| 1980 : | 23,270 | 27,221 | 2,296 | 52,787 | 44.08 | 55.92 | | |
| 1981 : | 23,525 | 28,236 | 2,227 | 53,988 | 43.57 | 56.43 | | |
| 1982 : | 20,857 | 26,054 | 1,758 | 48,669 | 42.85 | 57.15 | | |
| 1983 : | 18,352 | 21,851 | 1,610 | 41,813 | 43.89 | 56.11 | | |
| 1984 : | 21,174 | 26,928 | 1,954 | 50,056 | 42.30 | 57.70 | | |
| 1985 : | 20,711 | 26,967 | 1,971 | 49,109 | 42.17 | 58.93 | | |
| 1986 : | 17,790 | 24,662 | 1,620 | 44,071 | 40.37 | 59.64 | | |
| <hr/> | | | | | | | | |
| 1987 : | 17,144 | 24,145 | 1,675 | 42,964 | 39.90 | 60.10 | | |
| 1988 : | 17,574 | 25,106 | 1,847 | 44,527 | 39.47 | 60.53 | | |
| 1989 : | 17,573 | 25,189 | 2,025 | 44,787 | 39.24 | 60.76 | | |
| 1990 : | 18,367 | 26,943 | 2,395 | 47,705 | 38.50 | 61.50 | | |
| 1991 : | 17,634 | 26,643 | 2,540 | 46,816 | 37.67 | 62.34 | | |

1/ Includes Puerto Rico.

2/ Includes analyses of nitrogen-phosphate-potash, nitrogen-phosphate, nitrogen-potash, and phosphate-potash.

3/ Direct application materials including primary, secondary, and micronutrients.

Table 4--U.S. consumption of selected nitrogen materials

| Year ended June 30 | Ammonia | | Ammonium | | Nitrogen solutions | Sodium nitrate | Urea | Other | | | | |
|-----------------------|-----------|---------|-----------|-----------|-----------------------|-------------------|-----------|-----------|--|--|--|--|
| | Anhydrous | Aqua | Nitrate | Sulfate | | | | | | | | |
| Material tons | | | | | | | | | | | | |
| : | | | | | | | | | | | | |
| 1960 : | 708,798 | 427,062 | 1,231,294 | 534,795 | 650,259 | 454,341 | 142,198 | 394,163 | | | | |
| 1961 : | 811,490 | 432,494 | 1,324,569 | 552,264 | 948,785 | 407,766 | 203,934 | 358,760 | | | | |
| 1962 : | 934,743 | 496,303 | 1,387,769 | 557,701 | 1,190,979 | 407,792 | 292,622 | 330,451 | | | | |
| 1963 : | 1,226,266 | 579,165 | 1,480,186 | 703,963 | 1,493,507 | 381,343 | 364,439 | 307,885 | | | | |
| 1964 : | 1,398,379 | 776,219 | 1,643,504 | 712,327 | 1,680,367 | 337,866 | 406,360 | 295,307 | | | | |
| 1965 : | 1,563,376 | 819,665 | 1,634,294 | 774,503 | 1,922,126 | 301,111 | 427,555 | 252,410 | | | | |
| 1966 : | 1,959,601 | 972,291 | 1,823,004 | 792,347 | 2,305,118 | 243,576 | 467,359 | 215,909 | | | | |
| 1967 : | 2,406,824 | 862,931 | 2,141,514 | 839,941 | 2,562,625 | 199,118 | 505,769 | 202,007 | | | | |
| 1968 : | 3,072,190 | 813,543 | 2,376,459 | 843,286 | 2,645,424 | 153,385 | 550,250 | 193,767 | | | | |
| : | | | | | | | | | | | | |
| 1969 : | 3,138,333 | 701,050 | 2,574,077 | 762,955 | 2,791,582 | 104,470 | 581,879 | 223,899 | | | | |
| 1970 : | 3,468,363 | 701,354 | 2,844,360 | 781,874 | 3,242,892 | 85,531 | 533,535 | 240,279 | | | | |
| 1971 : | 3,968,488 | 738,149 | 2,892,809 | 901,518 | 3,482,263 | 99,061 | 601,335 | 228,313 | | | | |
| 1972 : | 3,636,920 | 732,511 | 3,062,952 | 933,562 | 3,420,473 | 96,836 | 785,463 | 163,889 | | | | |
| 1973 : | 3,411,745 | 664,559 | 3,280,623 | 952,825 | 3,799,572 | 58,766 | 960,480 | 270,473 | | | | |
| 1974 : | 4,180,088 | 723,569 | 3,169,382 | 927,090 | 4,048,551 | 47,691 | 1,028,426 | 426,200 | | | | |
| 1975 : | 4,018,020 | 702,192 | 2,796,275 | 815,979 | 4,109,665 | 84,703 | 1,151,213 | 476,865 | | | | |
| 1976 : | 4,935,635 | 698,248 | 2,950,095 | 1,069,958 | 5,591,178 | 65,266 | 1,653,643 | 356,889 | | | | |
| 1977 : | 4,927,474 | 655,133 | 2,738,710 | 1,050,582 | 5,794,636 | 73,626 | 1,931,830 | 371,717 | | | | |
| : | | | | | | | | | | | | |
| 1978 : | 4,539,179 | 500,283 | 2,487,714 | 845,068 | 5,510,895 | 60,698 | 1,934,092 | 488,887 | | | | |
| 1979 : | 4,883,959 | 566,300 | 2,507,546 | 778,237 | 6,073,617 | 71,210 | 2,148,125 | 537,565 | | | | |
| 1980 : | 5,483,349 | 667,615 | 2,627,660 | 870,722 | 6,669,503 | 83,999 | 2,144,628 | 505,295 | | | | |
| 1981 : | 5,684,606 | 728,626 | 3,020,738 | 846,445 | 7,270,118 | 76,909 | 2,219,661 | 472,337 | | | | |
| 1982 : | 5,116,303 | 667,244 | 2,571,329 | 715,238 | 7,247,893 | 66,264 | 2,198,927 | 465,867 | | | | |
| 1983 : | 3,836,095 | 520,307 | 2,151,778 | 685,773 | 6,105,555 | 60,100 | 2,171,929 | 341,306 | | | | |
| 1984 : | 4,714,597 | 643,711 | 2,186,502 | 790,530 | 8,065,477 | 64,246 | 2,731,285 | 423,113 | | | | |
| 1985 : | 5,387,839 | 629,457 | 2,195,397 | 778,320 | 8,255,895 | 52,274 | 2,680,237 | 434,028 | | | | |
| 1986 : | 4,571,796 | 515,453 | 1,735,168 | 665,588 | 7,030,150 | 61,253 | 3,436,210 | 438,904 | | | | |
| 1987 : | 4,527,725 | 437,805 | 1,643,500 | 632,999 | 6,824,515 | 34,539 | 3,325,721 | 634,529 | | | | |
| : | | | | | | | | | | | | |
| 1988 : | 4,599,472 | 469,110 | 1,768,719 | 751,922 | 7,272,282 | 34,388 | 3,331,248 | 635,711 | | | | |
| 1989 : | 4,623,953 | 493,687 | 1,898,668 | 817,680 | 7,056,966 | 39,898 | 3,381,855 | 645,962 | | | | |
| 1990 : | 4,634,471 | 407,196 | 1,777,545 | 874,731 | 7,744,973 | 52,602 | 3,738,827 | 1,116,636 | | | | |
| 1991 : | 5,066,947 | 336,051 | 1,844,144 | 819,515 | 7,699,031 | 39,797 | 3,395,512 | 1,106,683 | | | | |

Sources: (1, 7, 8).

Table 5--U.S. consumption of selected phosphate and potash fertilizers

| Year ended June 30 | Phosphates | | | | Potash | |
|-----------------------|----------------------|-----------------|-----------------------------------|---------------------------------------|----------|--------------------|
| | Superphosphates | | Diammonium phosphate (18-46-0) | Other nitrogen-phosphate grades 2/ | Other 3/ | Potassium chloride |
| | Grades 22% and under | Grades over 22% | 1/ | | | |
| Material tons | | | | | | |
| 1960 : | 510,539 | 399,319 | 20,388 | NA | 153,764 | 389,369 |
| 1961 : | 492,657 | 438,398 | 32,680 | NA | 171,696 | 411,691 |
| 1962 : | 481,266 | 465,067 | 81,253 | NA | 144,038 | 427,491 |
| 1963 : | 483,596 | 474,198 | 175,312 | NA | 132,800 | 516,482 |
| 1964 : | 456,357 | 622,434 | 337,753 | NA | 143,993 | 644,998 |
| 1965 : | 455,437 | 729,374 | 504,481 | NA | 154,742 | 814,233 |
| 1966 : | 470,244 | 902,098 | 786,782 | NA | 133,804 | 1,152,082 |
| 1967 : | 433,383 | 976,351 | 906,372 | NA | 142,385 | 1,483,159 |
| 1968 : | 401,347 | 1,109,332 | 1,246,953 | NA | 175,468 | 1,719,040 |
| 1969 : | 364,032 | 1,295,214 | 1,490,409 | NA | 211,513 | 1,957,155 |
| 1970 : | 312,032 | 1,204,566 | 1,514,911 | NA | 191,072 | 2,172,572 |
| 1971 : | 276,057 | 1,220,257 | 1,716,365 | NA | 189,638 | 2,268,903 |
| 1972 : | 217,733 | 1,262,538 | 1,875,690 | NA | 215,679 | 2,453,142 |
| 1973 : | 179,451 | 1,188,109 | 2,299,198 | NA | 191,796 | 2,836,365 |
| 1974 : | 195,184 | 1,183,092 | 2,267,174 | NA | 202,399 | 3,266,936 |
| 1975 : | 183,916 | 1,168,726 | 2,252,187 | NA | 176,940 | 3,003,816 |
| 1976 : | 140,343 | 1,211,060 | 3,232,501 | NA | 166,179 | 3,752,449 |
| 1977 : | 134,014 | 1,242,786 | 3,604,577 | NA | 215,230 | 4,398,573 |
| 1978 : | 106,983 | 1,086,741 | 3,187,866 | NA | 178,511 | 4,284,496 |
| 1979 : | 87,782 | 1,234,351 | 3,683,758 | NA | 257,891 | 5,104,424 |
| 1980 : | 121,908 | 1,166,540 | 3,481,921 | NA | 346,061 | 5,065,855 |
| 1981 : | 112,524 | 1,051,653 | 3,721,845 | 2,510,250 | 228,430 | 5,301,384 |
| 1982 : | 74,616 | 828,643 | 3,396,130 | 2,352,502 | 157,188 | 4,864,233 |
| 1983 : | 71,651 | 721,126 | 2,856,257 | 2,120,469 | 123,852 | 4,104,305 |
| 1984 : | 86,292 | 872,568 | 3,499,024 | 2,652,454 | 137,860 | 5,124,064 |
| 1985 : | 68,574 | 751,412 | 3,433,653 | 2,730,920 | 197,095 | 5,265,971 |
| 1986 : | 66,465 | 718,195 | 3,223,201 | 2,539,078 | 364,136 | 4,983,302 |
| 1987 : | 49,374 | 624,378 | 3,214,068 | 2,581,073 | 367,625 | 4,905,640 |
| 1988 : | 18,943 | 636,436 | 3,435,937 | 2,685,183 | 120,399 | 5,081,978 |
| 1989 : | 27,471 | 579,231 | 3,340,846 | 2,918,261 | 153,964 | 4,875,570 |
| 1990 : | 13,717 | 579,841 | 3,580,222 | 3,065,005 | 141,483 | 5,357,628 |
| 1991 : | 15,982 | 492,837 | 3,383,809 | 3,031,488 | 171,635 | 5,163,800 |
| NA = Not available. | | | | | | |

1/ 18-46-0 refers to the percentage of nitrogen, phosphate, and potash, respectively, contained in this fertilizer material. The 1960-74 tonnages exclude Alaska, Hawaii, and Puerto Rico.
 2/ All materials other than diammonium phosphate, which contain both nitrogen and phosphate.
 3/ Other single-nutrient phosphate fertilizer materials.

Table 6--Average U.S. farm prices of selected fertilizers

| Year/month | | Anhydrous ammonia | Nitrogen solutions (30%) | Urea 45-46% nitrogen | Ammonium nitrate | Sulfate of ammonium | Super-phosphate 20% phosphate | Super-phosphate 44-46% phosphate | Diammonium phosphate (18-46-0) | Potassium chloride 60% potassium |
|-----------------|---------|-------------------|--------------------------|----------------------|------------------|---------------------|-------------------------------|----------------------------------|--------------------------------|----------------------------------|
| Dollars per ton | | | | | | | | | | |
| : | | | | | | | | | | |
| : | | | | | | | | | | |
| 1960 | Apr. : | 141.0 | NA | 117.0 | 81.6 | 57.9 | 37.5 | 79.4 | NA | 51.3 |
| | Sept. : | 140.0 | NA | 117.0 | 80.9 | 57.8 | 38.0 | 80.1 | NA | 51.6 |
| 1961 | Apr. : | 142.0 | NA | 114.0 | 82.7 | 58.2 | 38.3 | 80.6 | NA | 52.4 |
| | Sept. : | 137.0 | NA | 112.0 | 81.5 | 58.5 | 38.2 | 79.8 | NA | 52.8 |
| 1962 | Apr. : | 134.0 | NA | 109.0 | 81.9 | 57.0 | 38.4 | 80.0 | NA | 53.3 |
| | Sept. : | 135.0 | NA | 108.0 | 80.9 | 56.8 | 38.4 | 79.9 | NA | 53.2 |
| 1963 | Apr. : | 128.0 | NA | 107.0 | 81.1 | 52.2 | 40.5 | 81.2 | NA | 53.9 |
| | Sept. : | 127.0 | NA | 105.0 | 79.7 | 51.8 | 40.1 | 80.4 | NA | 53.7 |
| 1964 | Apr. : | 126.0 | NA | 106.0 | 79.7 | 52.6 | 40.3 | 80.9 | NA | 53.9 |
| | Sept. : | 122.0 | NA | 104.0 | 78.7 | 52.6 | 40.1 | 80.1 | NA | 53.3 |
| : | | | | | | | | | | |
| 1965 | Apr. : | 122.0 | NA | 104.0 | 78.7 | 53.4 | 40.7 | 80.9 | NA | 53.6 |
| | Sept. : | 120.0 | NA | 103.0 | 78.3 | 53.0 | 40.8 | 79.7 | NA | 53.5 |
| 1966 | Apr. : | 119.0 | NA | 101.0 | 76.5 | 52.8 | 41.4 | 80.9 | NA | 54.9 |
| | Sept. : | 116.0 | 66.8 | 100.0 | 75.0 | 52.7 | 41.2 | 82.1 | 109.0 | 53.4 |
| 1967 | Apr. : | 113.0 | 66.8 | 99.3 | 74.2 | 54.2 | 42.1 | 84.1 | 113.0 | 53.6 |
| | Sept. : | 109.0 | 64.8 | 98.6 | 73.2 | 55.4 | 42.1 | 80.4 | 103.0 | 50.8 |
| 1968 | Apr. : | 91.4 | 62.7 | 91.8 | 67.9 | 53.9 | 43.2 | 78.4 | 101.0 | 49.1 |
| | Sept. : | 85.6 | 60.8 | 88.0 | 65.3 | 53.4 | 43.1 | 75.1 | 95.2 | 48.5 |
| 1969 | Apr. : | 75.6 | 53.6 | 83.9 | 61.7 | 52.5 | 43.8 | 74.0 | 94.1 | 47.8 |
| | Sept. : | 72.8 | 52.4 | 82.6 | 60.1 | 52.6 | 44.5 | 73.4 | 92.0 | 45.2 |
| : | | | | | | | | | | |
| 1970 | Apr. : | 75.0 | 53.9 | 82.9 | 60.0 | 52.4 | 45.4 | 75.1 | 94.4 | 50.9 |
| | Sept. : | 76.8 | 53.3 | 83.2 | 60.9 | 52.1 | 46.9 | 76.2 | 95.1 | 54.0 |
| 1971 | Apr. : | 79.3 | 56.2 | 81.9 | 63.3 | 51.7 | 47.8 | 76.6 | 95.7 | 58.2 |
| | Sept. : | 79.3 | 54.4 | 80.3 | 63.8 | 51.2 | 49.0 | 76.6 | 94.7 | 57.7 |
| 1972 | Apr. : | 80.0 | 55.3 | 81.4 | 64.7 | 52.1 | 49.9 | 78.0 | 97.4 | 58.8 |
| | Sept. : | 80.8 | 55.9 | 82.7 | 65.4 | 53.0 | 51.2 | 79.0 | 98.7 | 58.7 |
| 1973 | Apr. : | 87.6 | 58.3 | 90.3 | 71.4 | 55.2 | 53.7 | 87.5 | 109.0 | 61.5 |
| | Sept. : | 92.5 | 60.8 | 96.2 | 77.3 | 59.5 | 56.0 | 94.1 | 119.0 | 63.6 |
| 1974 | Apr. : | 183.0 | 111.0 | 183.0 | 139.0 | 110.0 | 91.4 | 150.0 | 181.0 | 81.3 |
| | Sept. : | 229.0 | 136.0 | 232.0 | 170.0 | 137.0 | 104.0 | 188.0 | 228.0 | 91.0 |
| : | | | | | | | | | | |
| 1975 | Apr. : | 265.0 | 153.0 | 244.0 | 186.0 | 148.0 | 118.0 | 214.0 | 263.0 | 102.0 |
| | Sept. : | 219.0 | 126.0 | 203.0 | 156.0 | 125.0 | 103.0 | 179.0 | 216.0 | 94.3 |
| 1976 | Apr. : | 191.0 | 113.0 | 166.0 | 135.0 | 98.2 | 95.2 | 158.0 | 189.0 | 95.9 |
| | Sept. : | 182.0 | 112.0 | 168.0 | 137.0 | 94.8 | 95.1 | 146.0 | 177.0 | 94.2 |
| 1977 | Mar. : | 188.0 | 122.0 | 169.0 | 141.0 | 101.0 | 99.2 | 146.0 | 180.0 | 95.8 |
| | May : | 188.0 | 121.0 | 171.0 | 144.0 | 102.0 | 103.0 | 148.0 | 185.0 | 96.9 |
| | Oct. : | 177.0 | 119.0 | 169.0 | 144.0 | 103.0 | 100.0 | 150.0 | 187.0 | 94.5 |
| | Dec. : | 170.0 | 118.0 | 167.0 | 142.0 | 102.0 | 104.0 | 147.0 | 183.0 | 94.0 |
| 1978 | Mar. : | 177.0 | 118.0 | 169.0 | 140.0 | 109.0 | 104.0 | 151.0 | 186.0 | 96.4 |
| | May : | 171.0 | 117.0 | 170.0 | 139.0 | 109.0 | 100.0 | 153.0 | 186.0 | 98.4 |
| | Oct. : | 164.0 | 113.0 | 169.0 | 138.0 | 113.0 | 108.0 | 153.0 | 187.0 | 98.9 |
| | Dec. : | 160.0 | 109.0 | 168.0 | 135.0 | 111.0 | 111.0 | 153.0 | 186.0 | 99.3 |

See note at end of table.

Table 6--Average U.S. farm prices of selected fertilizers--Continued

NA = Not available.

Source: (6).

Table 7--Fertilizer price indexes

| | | Producer price indexes | | | |
|--------|-------------------|------------------------|----------|-----------|--------|
| | : Index of prices | | | | |
| | : paid by farmers | | | | |
| Year | for fertilizer | All fertilizers | Nitrogen | Phosphate | Potash |
| : | | | | | |
| : | 1977=100 | ----- | 1982=100 | ----- | |
| : | | | | | |
| 1960 : | 57 | 39.6 | 48.4 | 28.4 | 38.4 |
| 1961 : | 58 | 40.4 | 48.7 | 29.4 | 41.2 |
| 1962 : | 58 | 39.5 | 47.0 | 29.2 | 42.2 |
| 1963 : | 57 | 38.7 | 45.3 | 29.6 | 42.4 |
| 1964 : | 57 | 38.8 | 45.3 | 30.2 | 41.6 |
| 1965 : | 57 | 40.1 | 46.6 | 31.8 | 43.0 |
| 1966 : | 56 | 40.5 | 46.6 | 33.1 | 41.1 |
| 1967 : | 55 | 41.1 | 47.2 | 34.4 | 37.5 |
| 1968 : | 52 | 38.9 | 42.6 | 35.4 | 33.2 |
| : | | | | | |
| 1969 : | 48 | 32.6 | 34.0 | 31.7 | 25.9 |
| 1970 : | 48 | 30.8 | 32.7 | 27.5 | 36.6 |
| 1971 : | 50 | 31.0 | 33.5 | 27.1 | 37.6 |
| 1972 : | 52 | 30.6 | 33.7 | 25.8 | 37.7 |
| 1973 : | 56 | 31.7 | 35.7 | 25.8 | 39.6 |
| 1974 : | 92 | 51.0 | 59.9 | 40.8 | 49.7 |
| 1975 : | 120 | 81.7 | 84.4 | 81.3 | 62.5 |
| 1976 : | 102 | 67.2 | 71.4 | 64.6 | 62.8 |
| 1977 : | 100 | 65.9 | 73.7 | 61.1 | 58.3 |
| : | | | | | |
| 1978 : | 100 | 66.4 | 72.5 | 62.4 | 61.8 |
| 1979 : | 108 | 72.3 | 74.4 | 70.6 | 73.1 |
| 1980 : | 134 | 91.6 | 90.0 | 93.0 | 88.4 |
| 1981 : | 144 | 101.2 | 101.8 | 100.6 | 102.3 |
| 1982 : | 144 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1983 : | 137 | 93.1 | 92.2 | 93.8 | 92.1 |
| 1984 : | 143 | 97.2 | 99.8 | 93.5 | 100.4 |
| 1985 : | 135 | 94.3 | 96.3 | 91.6 | NA |
| 1986 : | 124 | 86.1 | 80.3 | 90.5 | NA |
| 1987 : | 118 | 87.9 | 79.0 | 94.9 | NA |
| 1988 : | 130 | 98.8 | 92.8 | 103.1 | NA |
| 1989 : | 137 | 101.4 | 94.6 | 106.2 | NA |
| 1990 : | 131 | 95.2 | 92.3 | 96.5 | NA |
| 1991 : | 134 | 99.0 | 98.5 | 98.2 | NA |

NA = Not available.

Sources: (6, 10).

Appendix

The data in this appendix include most of the historical information on State fertilizer use for four selected crops: corn, cotton, soybeans, and wheat (2, 3, 4, 5). Information reported for each crop includes plant nutrient application rates, the proportion of the crop fertilized with each plant nutrient, and the proportion of the crop receiving any fertilizer. Information for 1964-85 is based on harvested acres for cotton, soybeans, and wheat, while information for corn is based on that portion of the crop harvested for grain. Information for 1986-91 is based on planted acres for corn, cotton, and soybeans, and harvested acres for wheat.

Appendix table 1--Percentage of corn acreage receiving any fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | | |
|----------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|--|
| Delaware | : NA | NA | NA | NA | NA | NA | NA | 100 | 96 | 98 | 96 | 96 | 96 | NA | | |
| Maryland | : NA | 98 | 99 | 98 | 99 | 100 | 97 | 100 | 100 | 92 | 100 | 100 | 100 | NA | | |
| New York | : NA | 100 | 99 | 100 | 98 | 100 | 100 | NA | | |
| Pennsylvania | : NA | 100 | 97 | 98 | 99 | 99 | 98 | 98 | 97 | 97 | 97 | 96 | 98 | 98 | 100 | 99 | 99 | NA | | |
| Michigan | : 98 | 96 | 99 | 99 | 98 | 99 | 99 | 98 | 100 | 98 | 98 | 100 | 99 | 99 | 98 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 100 | 99 | 99 | 97 | | | |
| Minnesota | : 79 | 79 | 86 | 92 | 97 | 90 | 94 | 94 | 90 | 94 | 94 | 93 | 99 | 95 | 95 | 95 | 94 | 97 | 97 | 97 | 96 | 95 | 96 | 95 | 96 | 97 | 98 | 97 | | |
| Wisconsin | : 92 | 97 | 98 | 94 | 98 | 99 | 98 | 97 | 98 | 98 | 99 | 98 | 97 | 98 | 100 | 99 | 99 | 100 | 98 | 97 | 100 | 99 | 97 | 99 | 99 | 100 | 96 | | | |
| Illinois | : 90 | 91 | 96 | 94 | 96 | 97 | 96 | 96 | 97 | 95 | 97 | 96 | 99 | 99 | 97 | 100 | 98 | 98 | 99 | 99 | 98 | 97 | 98 | 100 | 99 | 100 | 99 | | | |
| Indiana | : 100 | 100 | 100 | 99 | 100 | 99 | 99 | 99 | 100 | 99 | 99 | 98 | 100 | 100 | 99 | 98 | 100 | 99 | 99 | 99 | 99 | 99 | 98 | 97 | 99 | 100 | 99 | | | |
| O | Iowa | : 81 | 87 | 92 | 89 | 88 | 92 | 95 | 95 | 94 | 94 | 91 | 94 | 98 | 98 | 93 | 98 | 95 | 98 | 99 | 95 | 97 | 100 | 99 | 98 | 99 | 100 | 97 | 98 | |
| Missouri | : 92 | 93 | 95 | 98 | 97 | 95 | 98 | 99 | 98 | 95 | 94 | 93 | 98 | 95 | 97 | 96 | 98 | 98 | 98 | 99 | 96 | 98 | 96 | 98 | 97 | 96 | 98 | | | |
| Ohio | : 99 | 100 | 99 | 100 | 99 | 100 | 100 | 99 | 97 | 97 | 99 | 99 | 100 | 98 | 99 | 100 | 99 | 99 | 100 | 98 | 99 | 100 | 99 | 99 | 100 | 99 | 98 | | | |
| Kansas | : 79 | 84 | 92 | 90 | 93 | 93 | 97 | 98 | 97 | 96 | 95 | 99 | 98 | 99 | 93 | 96 | 99 | NA | | |
| Nebraska | : 72 | 74 | 81 | 90 | 90 | 89 | 93 | 90 | 93 | 92 | 94 | 91 | 91 | 96 | 96 | 95 | 96 | 97 | 97 | 98 | 98 | 99 | 93 | 97 | 99 | 96 | 98 | 99 | | |
| South Dakota | : 25 | 26 | 29 | 48 | 41 | 47 | 61 | 51 | 45 | 63 | 59 | 63 | 60 | 53 | 51 | 59 | 54 | 64 | 61 | 66 | 66 | 77 | 75 | 73 | 75 | 69 | 77 | 83 | | |
| Kentucky | : 96 | 96 | 99 | 90 | 98 | 96 | 97 | 100 | 98 | 98 | 100 | 100 | 100 | 88 | 98 | 96 | 98 | NA | | |
| North Carolina | : 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 95 | 100 | 100 | 100 | 99 | 100 | 100 | 99 | NA | | | |
| Tennessee | : 97 | 97 | 98 | 98 | 98 | 98 | 100 | NA | | |
| Virginia | : 100 | 96 | 99 | 100 | 100 | 98 | 100 | 100 | 99 | 100 | 98 | 100 | 100 | 99 | 100 | 100 | NA | | |
| Alabama | : 99 | 99 | 100 | 99 | 100 | 100 | 100 | NA | | |
| Florida | : NA | 100 | 99 | 99 | 100 | 100 | 98 | NA | | |
| Georgia | : 99 | 100 | 99 | 100 | 100 | 99 | 100 | 99 | 99 | 98 | 99 | 99 | 99 | 100 | 100 | 100 | 100 | NA | | |
| South Carolina | : 100 | 100 | 100 | 99 | 100 | 100 | 100 | NA | | |
| Mississippi | : 98 | 97 | 98 | 79 | 98 | 98 | 99 | NA | | |
| Colorado | : NA | NA | NA | NA | NA | NA | NA | 99 | 98 | 96 | 92 | 91 | 95 | 98 | 96 | 96 | 96 | NA | | |
| Texas | : 57 | 61 | 66 | 75 | 78 | 81 | 84 | NA | NA | NA | NA | 95 | 96 | NA | 96 | 93 | NA | | |
| Average | : 85 | 88 | 91 | 92 | 93 | 93 | 95 | 94 | 96 | 94 | 94 | 94 | 94 | 97 | 96 | 95 | 96 | 96 | 97 | 97 | 96 | 97 | 98 | 96 | 96 | 97 | 97 | 97 | 97 | |

NA = Not available.

Appendix table 2--Percentage of corn acreage receiving nitrogen fertilizer, selected States

| State | : | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | | |
|----------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|
| Delaware | : | NA | 100 | 96 | 98 | 96 | 96 | 96 | 96 | NA | | |
| Maryland | : | NA | 98 | 99 | 98 | 98 | 100 | 97 | 100 | 100 | 99 | 100 | 100 | 100 | 100 | NA | | |
| New York | : | NA | 100 | 99 | 100 | 93 | 100 | 99 | NA | | |
| Pennsylvania | : | NA | 100 | 95 | 96 | 99 | 99 | 96 | 97 | 97 | 96 | 97 | 96 | 98 | 98 | 100 | 99 | 99 | NA | | |
| Michigan | : | 98 | 96 | 99 | 99 | 98 | 99 | 99 | 98 | 100 | 98 | 98 | 99 | 99 | 99 | 98 | 100 | 100 | 100 | 100 | 100 | 99 | 99 | 98 | 100 | 99 | 96 | 97 | 97 | | |
| Minnesota | : | 79 | 77 | 86 | 92 | 97 | 89 | 93 | 94 | 90 | 93 | 94 | 93 | 97 | 95 | 94 | 94 | 94 | 98 | 97 | 97 | 96 | 95 | 95 | 95 | 96 | 97 | 96 | 97 | | |
| Wisconsin | : | 92 | 97 | 98 | 93 | 98 | 99 | 98 | 97 | 98 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 99 | 99 | 97 | 97 | 100 | 99 | 97 | 99 | 98 | 99 | 100 | 95 | |
| Illinois | : | 89 | 90 | 96 | 93 | 96 | 96 | 95 | 95 | 96 | 94 | 96 | 96 | 99 | 98 | 97 | 99 | 98 | 98 | 99 | 99 | 99 | 98 | 97 | 98 | 100 | 99 | 100 | 99 | | |
| Indiana | : | 99 | 100 | 99 | 99 | 100 | 99 | 99 | 99 | 100 | 98 | 99 | 98 | 100 | 99 | 99 | 97 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 98 | 97 | 99 | 100 | 98 | 98 | |
| Iowa | : | 80 | 86 | 91 | 88 | 87 | 91 | 94 | 94 | 94 | 93 | 90 | 93 | 98 | 98 | 98 | 93 | 98 | 95 | 97 | 99 | 95 | 97 | 99 | 98 | 98 | 99 | 99 | 96 | 98 | |
| Missouri | : | 92 | 93 | 95 | 98 | 94 | 95 | 98 | 99 | 98 | 95 | 93 | 93 | 98 | 94 | 96 | 96 | 97 | 97 | 97 | 98 | 99 | 96 | 97 | 95 | 98 | 97 | 95 | 97 | 95 | |
| Ohio | : | 99 | 100 | 99 | 100 | 99 | 100 | 100 | 99 | 97 | 96 | 99 | 99 | 100 | 88 | 99 | 100 | 99 | 99 | 99 | 98 | 98 | 98 | 98 | 98 | 99 | 99 | 99 | 99 | 98 | |
| Kansas | : | 79 | 84 | 92 | 90 | 93 | 93 | 97 | 98 | 97 | 96 | 93 | 99 | 98 | 99 | 99 | 93 | 96 | 99 | NA | NA | |
| Nebraska | : | 72 | 74 | 79 | 90 | 90 | 89 | 93 | 90 | 92 | 92 | 94 | 91 | 91 | 96 | 96 | 95 | 96 | 97 | 97 | 98 | 98 | 99 | 93 | 97 | 99 | 96 | 98 | 99 | 99 | |
| South Dakota | : | 25 | 25 | 29 | 48 | 41 | 46 | 60 | 51 | 45 | 63 | 59 | 63 | 57 | 53 | 51 | 59 | 54 | 64 | 61 | 66 | 66 | 77 | 75 | 73 | 75 | 69 | 77 | 83 | | |
| Kentucky | : | 96 | 96 | 97 | 89 | 98 | 96 | 97 | 99 | 98 | 98 | 100 | 99 | 100 | 97 | 97 | 96 | 98 | NA | | |
| North Carolina | : | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 95 | 100 | 100 | 100 | 99 | 100 | 100 | 99 | NA | | |
| Tennessee | : | 97 | 97 | 98 | 98 | 98 | 98 | 100 | NA | NA | |
| Virginia | : | 100 | 96 | 99 | 100 | 100 | 98 | 100 | 100 | 99 | 100 | 98 | 100 | 100 | 99 | 100 | 100 | NA | NA | |
| Alabama | : | 99 | 99 | 100 | 99 | 100 | 100 | 100 | NA | NA | |
| Florida | : | NA | 100 | 97 | 96 | 100 | 100 | 98 | NA | NA | |
| Georgia | : | 99 | 100 | 99 | 100 | 100 | 99 | 100 | 99 | 99 | 98 | 99 | 99 | 100 | 100 | 99 | 100 | 100 | NA | NA | |
| South Carolina | : | 100 | 100 | 100 | 99 | 100 | 100 | 100 | NA | NA | NA |
| Mississippi | : | 98 | 97 | 98 | 79 | 98 | 98 | 98 | NA | NA | NA |
| Colorado | : | NA | 99 | 98 | 96 | 92 | 88 | 94 | 96 | 96 | 96 | NA | NA | NA |
| Texas | : | 57 | 60 | 66 | 75 | 78 | 81 | 84 | NA | NA | NA | NA | NA | NA | 95 | 96 | NA | 78 | 93 | NA | NA | NA |
| Average | : | 85 | 88 | 91 | 92 | 92 | 93 | 94 | 94 | 96 | 93 | 94 | 94 | 97 | 96 | 95 | 96 | 96 | 97 | 97 | 96 | 97 | 97 | 95 | 96 | 97 | 97 | 97 | 97 | 97 | |

NA = Not available.

Appendix table 3--Nitrogen used on corn, rate per fertilized acre receiving nitrogen, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| Delaware | NA | 105 | 109 | 102 | 112 | 108 | 118 | NA | |
| Maryland | 82 | 81 | 84 | 88 | 85 | 84 | 98 | 92 | 111 | 93 | 99 | 79 | NA | |
| New York | 69 | 78 | 78 | 72 | 70 | 84 | NA | |
| Pennsylvania | 76 | 64 | 59 | 77 | 72 | 81 | 82 | 84 | 88 | 71 | 79 | 118 | 104 | 114 | 111 | 109 | NA | |
| Michigan | 43 | 52 | 51 | 64 | 83 | 90 | 98 | 101 | 88 | 87 | 72 | 83 | 89 | 103 | 112 | 107 | 104 | 109 | 120 | 111 | 136 | 120 | 119 | 121 | 129 | 111 | 123 | 124 | |
| Minnesota | 28 | 46 | 54 | 69 | 84 | 95 | 98 | 96 | 93 | 98 | 83 | 91 | 104 | 107 | 90 | 107 | 105 | 105 | 110 | 100 | 115 | 112 | 107 | 121 | 118 | 115 | 113 | 110 | |
| Wisconsin | 28 | 33 | 43 | 52 | 63 | 79 | 69 | 61 | 79 | 76 | 62 | 73 | 88 | 82 | 92 | 93 | 108 | 110 | 95 | 97 | 102 | 96 | 86 | 89 | 87 | 88 | 79 | 86 | |
| Illinois | 72 | 86 | 102 | 109 | 112 | 120 | 118 | 113 | 128 | 125 | 113 | 117 | 141 | 130 | 140 | 146 | 147 | 152 | 153 | 155 | 148 | 158 | 156 | 161 | 163 | 160 | 164 | 159 | |
| Indiana | 68 | 91 | 108 | 112 | 112 | 115 | 126 | 113 | 126 | 115 | 102 | 106 | 129 | 140 | 130 | 149 | 148 | 146 | 152 | 149 | 155 | 162 | 157 | 136 | 146 | 133 | 139 | 135 | |
| Iowa | 45 | 65 | 81 | 90 | 104 | 108 | 107 | 101 | 110 | 109 | 102 | 102 | 126 | 128 | 130 | 138 | 134 | 142 | 131 | 141 | 143 | 145 | 131 | 132 | 139 | 128 | 127 | 120 | |
| Missouri | 75 | 75 | 94 | 81 | 106 | 108 | 117 | 125 | 116 | 127 | 117 | 107 | 116 | 134 | 123 | 116 | 119 | 129 | 125 | 131 | 119 | 130 | 133 | 134 | 132 | 140 | 133 | 136 | 136 |
| Ohio | 55 | 72 | 70 | 88 | 85 | 93 | 110 | 90 | 102 | 100 | 90 | 95 | 116 | 130 | 133 | 145 | 155 | 159 | 161 | 157 | 150 | 153 | 154 | 143 | 158 | 143 | 151 | 151 | |
| Kansas | 60 | 68 | 75 | 106 | 128 | 133 | 148 | 139 | 143 | 154 | 140 | 142 | 162 | 165 | 122 | 174 | 169 | NA | |
| Nebraska | 79 | 98 | 106 | 121 | 149 | 143 | 146 | 141 | 139 | 139 | 131 | 120 | 143 | 136 | 143 | 157 | 111 | 157 | 145 | 158 | 156 | 154 | 141 | 135 | 142 | 145 | 144 | 135 | |
| South Dakota | 31 | 44 | 43 | 55 | 59 | 56 | 59 | 58 | 53 | 62 | 47 | 60 | 61 | 52 | 62 | 62 | 69 | 69 | 78 | 80 | 61 | 66 | 73 | 63 | 80 | 69 | 80 | 71 | |
| Kentucky | 61 | 67 | 80 | 78 | 85 | 103 | 103 | 100 | 123 | 120 | 97 | 104 | 140 | 115 | 130 | 114 | 122 | NA | |
| North Carolina | 85 | 116 | 109 | 119 | 124 | 133 | 134 | 128 | 152 | 144 | 133 | 140 | 148 | 149 | 156 | 154 | 148 | NA | |
| Tennessee | 61 | 76 | 75 | 76 | 94 | 102 | 91 | NA | |
| Virginia | 66 | 81 | 99 | 101 | 95 | 102 | 101 | 115 | 114 | 125 | 133 | 127 | 141 | 128 | 138 | 143 | NA | NA |
| Alabama | 69 | 79 | 84 | 90 | 75 | 96 | 96 | NA | NA |
| Florida | NA | 71 | 80 | 76 | 93 | 103 | 97 | NA | NA |
| Georgia | 72 | 77 | 95 | 114 | 114 | 119 | 113 | 117 | 115 | 117 | 124 | 111 | 124 | 149 | 139 | 151 | 160 | NA | NA |
| South Carolina | 71 | 82 | 115 | 108 | 124 | 124 | 129 | NA | NA |
| Mississippi | 59 | 71 | 79 | 69 | 79 | 88 | 100 | NA | NA |
| Colorado | NA | 152 | 166 | 167 | 158 | 128 | 163 | 151 | 165 | 150 | NA | NA |
| Texas | 45 | 39 | 63 | 100 | 99 | 117 | 105 | NA | NA | NA | NA | NA | 172 | 187 | NA | 151 | 112 | NA | NA |
| Average | 58 | 75 | 86 | 93 | 104 | 110 | 112 | 107 | 115 | 114 | 103 | 105 | 127 | 128 | 126 | 135 | 130 | 137 | 137 | 138 | 140 | 132 | 132 | 137 | 131 | 132 | 128 | | |

Appendix table 4--Percentage of corn acreage receiving phosphate fertilizer, selected States

| State | : | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Percent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Delaware | : | NA | 99 | 95 | 96 | 92 | 90 | 94 | NA |
| Maryland | : | NA | 98 | 99 | 98 | 98 | 100 | 97 | 99 | 98 | 99 | 100 | 100 | 99 | NA |
| New York | : | NA | 100 | 99 | 100 | 98 | 100 | 98 | NA |
| Pennsylvania | : | NA | 94 | 96 | 98 | 99 | 98 | 98 | 97 | 95 | 96 | 96 | 97 | 98 | 99 | 98 | NA |
| Michigan | : | 98 | 96 | 98 | 99 | 98 | 99 | 98 | 97 | 100 | 98 | 97 | 100 | 97 | 96 | 97 | 100 | 99 | 99 | 96 | 100 | 100 | 97 | 97 | 94 | 95 | 94 | 90 | 89 |
| Minnesota | : | 77 | 79 | 86 | 90 | 95 | 87 | 92 | 92 | 88 | 90 | 88 | 92 | 95 | 93 | 89 | 93 | 91 | 95 | 91 | 89 | 91 | 91 | 90 | 87 | 90 | 89 | 90 | 85 |
| Wisconsin | : | 92 | 97 | 98 | 92 | 98 | 97 | 97 | 96 | 97 | 96 | 98 | 97 | 97 | 97 | 98 | 98 | 95 | 99 | 96 | 96 | 99 | 98 | 97 | 97 | 95 | 95 | 96 | 93 |
| Illinois | : | 82 | 87 | 90 | 90 | 93 | 92 | 94 | 89 | 91 | 89 | 94 | 88 | 96 | 95 | 94 | 93 | 95 | 94 | 99 | 90 | 86 | 88 | 89 | 83 | 91 | 87 | | |
| Indiana | : | 100 | 100 | 99 | 99 | 99 | 97 | 99 | 99 | 100 | 98 | 99 | 98 | 100 | 99 | 97 | 98 | 100 | 99 | 98 | 98 | 95 | 95 | 91 | 92 | 94 | 96 | 94 | |
| Iowa | : | 72 | 78 | 86 | 84 | 84 | 88 | 90 | 89 | 90 | 84 | 81 | 85 | 90 | 90 | 85 | 89 | 87 | 90 | 90 | 84 | 85 | 85 | 83 | 84 | 91 | 85 | 82 | 79 |
| Missouri | : | 78 | 84 | 82 | 88 | 85 | 83 | 90 | 88 | 84 | 86 | 83 | 84 | 89 | 82 | 83 | 89 | 87 | 85 | 87 | 81 | 78 | 71 | 77 | 81 | 85 | 79 | 80 | 76 |
| Ohio | : | 97 | 100 | 99 | 100 | 99 | 99 | 100 | 99 | 97 | 93 | 97 | 96 | 93 | 98 | 96 | 96 | 98 | 98 | 97 | 96 | 97 | 93 | 96 | 96 | 97 | 94 | 94 | |
| Kansas | : | 61 | 74 | 74 | 74 | 85 | 75 | 78 | 79 | 81 | 65 | 66 | 73 | 72 | 76 | 62 | 68 | 72 | NA | |
| Nebraska | : | 64 | 47 | 60 | 70 | 75 | 67 | 71 | 71 | 69 | 74 | 68 | 57 | 65 | 66 | 62 | 72 | 58 | 69 | 61 | 72 | 72 | 70 | 62 | 63 | 72 | 68 | 64 | |
| South Dakota | : | 21 | 19 | 21 | 37 | 30 | 42 | 52 | 39 | 37 | 55 | 51 | 59 | 54 | 46 | 40 | 48 | 44 | 51 | 49 | 52 | 51 | 55 | 60 | 49 | 57 | 58 | 58 | 67 |
| Kentucky | : | 92 | 89 | 95 | 84 | 94 | 91 | 92 | 95 | 93 | 92 | 97 | 98 | 93 | 96 | 93 | 94 | 91 | NA | |
| North Carolina | : | 99 | 99 | 100 | 100 | 99 | 100 | 98 | 100 | 100 | 71 | 97 | 99 | 99 | 99 | 97 | 100 | 98 | NA | |
| Tennessee | : | 92 | 91 | 94 | 97 | 94 | 97 | 98 | NA | |
| Virginia | : | 100 | 96 | 98 | 98 | 100 | 98 | 100 | 99 | 97 | 98 | 94 | 98 | 100 | 98 | 93 | 98 | NA | |
| Alabama | : | 98 | 98 | 100 | 98 | 99 | 98 | 100 | NA | |
| Florida | : | NA | 100 | 99 | 87 | 92 | 97 | 96 | NA | |
| Georgia | : | 99 | 100 | 99 | 100 | 100 | 99 | 100 | 98 | 99 | 97 | 97 | 96 | 100 | 100 | 99 | 100 | NA | |
| South Carolina | : | 100 | 99 | 99 | 95 | 100 | 100 | 100 | NA | |
| Mississippi | : | 87 | 81 | 93 | 76 | 93 | 93 | 93 | NA | |
| Colorado | : | NA | 86 | 75 | 76 | 63 | 60 | 66 | 66 | 78 | 79 | NA | |
| Texas | : | 53 | 58 | 59 | 65 | 49 | 60 | 58 | NA | NA | NA | NA | NA | 54 | 54 | NA | 84 | 80 | NA | |
| Average | : | 78 | 82 | 86 | 87 | 89 | 87 | 90 | 88 | 90 | 86 | 87 | 86 | 90 | 88 | 87 | 89 | 87 | 90 | 88 | 88 | 87 | 86 | 84 | 83 | 87 | 84 | 85 | 82 |

NA = Not available.

Appendix table 5--Phosphate used on corn, rate per fertilized acre receiving phosphate, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | Pounds | : | : | : | : | : | : | : | : | : | : | : | : | : | |
| Delaware | NA | 77 | 66 | 74 | 71 | 66 | 64 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | | |
| Maryland | NA | NA | 80 | 71 | 71 | 68 | 67 | 74 | 83 | 85 | 75 | 78 | 81 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | | |
| New York | NA | 51 | 62 | 65 | 66 | 61 | 67 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | | |
| Pennsylvania | NA | 61 | 67 | 64 | 63 | 64 | 66 | 65 | 66 | 69 | 61 | 59 | 66 | 72 | 77 | 69 | 64 | NA | | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Michigan | 48 | 56 | 51 | 60 | 70 | 66 | 77 | 66 | 72 | 76 | 57 | 57 | 63 | 64 | 71 | 69 | 67 | 63 | 65 | 64 | 65 | 55 | 58 | 60 | 61 | 52 | 52 | 63 | |
| Minnesota | 36 | 45 | 45 | 55 | 63 | 60 | 61 | 60 | 66 | 64 | 61 | 58 | 61 | 56 | 51 | 60 | 50 | 53 | 51 | 48 | 50 | 45 | 48 | 49 | 52 | 49 | 51 | 50 | |
| Wisconsin | 46 | 48 | 56 | 51 | 75 | 64 | 69 | 65 | 61 | 61 | 55 | 55 | 60 | 60 | 71 | 57 | 58 | 60 | 57 | 56 | 57 | 49 | 53 | 56 | 56 | 55 | 52 | 44 | |
| Illinois | 44 | 56 | 69 | 67 | 77 | 75 | 92 | 67 | 74 | 70 | 75 | 67 | 78 | 83 | 85 | 88 | 83 | 90 | 85 | 81 | 87 | 80 | 79 | 82 | 87 | 74 | 81 | 79 | |
| Indiana | 50 | 68 | 74 | 78 | 80 | 77 | 92 | 76 | 75 | 77 | 74 | 63 | 84 | 84 | 75 | 85 | 77 | 78 | 69 | 75 | 72 | 70 | 75 | 65 | 71 | 78 | 75 | 78 | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Iowa | 39 | 43 | 52 | 57 | 54 | 67 | 67 | 58 | 60 | 59 | 62 | 59 | 62 | 64 | 66 | 70 | 68 | 63 | 66 | 62 | 63 | 56 | 57 | 58 | 57 | 58 | 58 | 58 | |
| Missouri | 34 | 39 | 52 | 48 | 49 | 56 | 57 | 53 | 60 | 56 | 59 | 51 | 52 | 61 | 59 | 59 | 58 | 63 | 57 | 61 | 56 | 58 | 58 | 57 | 58 | 58 | 54 | 54 | |
| Ohio | 56 | 56 | 68 | 71 | 75 | 77 | 83 | 70 | 81 | 79 | 68 | 64 | 80 | 90 | 86 | 82 | 79 | 80 | 71 | 78 | 79 | 68 | 73 | 76 | 80 | 72 | 72 | 75 | |
| Kansas | 28 | 34 | 39 | 36 | 41 | 46 | 47 | 43 | 45 | 55 | 52 | 41 | 59 | 40 | 38 | 46 | 40 | NA | | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Nebraska | 31 | 33 | 36 | 36 | 37 | 37 | 42 | 43 | 40 | 42 | 38 | 36 | 42 | 40 | 42 | 41 | 33 | 42 | 37 | 42 | 41 | 40 | 36 | 41 | 38 | 36 | 31 | 36 | |
| South Dakota | 28 | 26 | 26 | 36 | 33 | 31 | 36 | 27 | 29 | 31 | 23 | 30 | 34 | 24 | 38 | 33 | 29 | 30 | 36 | 38 | 34 | 35 | 38 | 38 | 33 | 42 | 36 | 36 | |
| Kentucky | 49 | 50 | 58 | 63 | 63 | 70 | 68 | 71 | 86 | 78 | 58 | 68 | 90 | 81 | 91 | 75 | 79 | NA | |
| North Carolina | 44 | 45 | 48 | 51 | 50 | 56 | 55 | 58 | 60 | 56 | 58 | 56 | 67 | 61 | 65 | 64 | 60 | NA | |
| Tennessee | 44 | 50 | 50 | 53 | 58 | 56 | 59 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Virginia | 60 | 64 | 77 | 71 | 67 | 71 | 70 | 77 | 73 | 80 | 79 | 72 | 84 | 81 | 80 | 66 | NA | NA |
| Alabama | 39 | 42 | 46 | 48 | 42 | 53 | 51 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Florida | NA | NA | 42 | 44 | 52 | 48 | 49 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Georgia | 43 | 43 | 49 | 49 | 53 | 50 | 51 | 50 | 52 | 52 | 49 | 47 | 51 | 61 | 56 | 54 | 60 | NA | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| South Carolina | 43 | 50 | 56 | 57 | 67 | 63 | 64 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Mississippi | 32 | 36 | 36 | 36 | 39 | 40 | 49 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Colorado | NA | 64 | 80 | 81 | 56 | 47 | 50 | 42 | 64 | 71 | NA | | |
| Texas | 37 | 36 | 42 | 50 | 43 | 55 | 40 | NA | NA | NA | NA | NA | 53 | 49 | NA | 47 | 45 | NA | | |
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Average | 41 | 50 | 57 | 60 | 64 | 64 | 71 | 62 | 66 | 64 | 62 | 58 | 67 | 68 | 68 | 69 | 66 | 67 | 65 | 64 | 65 | 60 | 61 | 61 | 63 | 59 | 60 | 60 | |

NA = Not available.

Appendix table 6--Percentage of corn acreage receiving potash fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Delaware | NA | 100 | 95 | 98 | 92 | 94 | 95 | NA |
| Maryland | NA | 98 | 97 | 98 | 96 | 100 | 96 | 99 | 100 | 98 | 96 | 93 | 100 | NA |
| New York | NA | 100 | 99 | 100 | 97 | 100 | 98 | NA |
| Pennsylvania | NA | 93 | 95 | 97 | 98 | 98 | 97 | 96 | 96 | 94 | 97 | 93 | 93 | 97 | 98 | 96 | 97 | NA |
| Michigan | 98 | 95 | 98 | 98 | 98 | 99 | 96 | 97 | 98 | 97 | 95 | 99 | 99 | 98 | 93 | 99 | 97 | 100 | 99 | 98 | 97 | 89 | 95 | 93 | 95 | 90 | 94 | 90 |
| Minnesota | 69 | 73 | 81 | 88 | 95 | 85 | 91 | 92 | 86 | 89 | 86 | 92 | 94 | 90 | 90 | 93 | 91 | 94 | 90 | 89 | 91 | 86 | 85 | 85 | 87 | 85 | 86 | 83 |
| Wisconsin | 92 | 96 | 98 | 92 | 95 | 97 | 97 | 96 | 97 | 97 | 98 | 96 | 97 | 97 | 96 | 99 | 96 | 96 | 96 | 96 | 97 | 95 | 95 | 96 | 97 | 95 | 95 | 93 |
| Illinois | 82 | 86 | 89 | 89 | 94 | 90 | 94 | 87 | 91 | 88 | 92 | 89 | 94 | 97 | 91 | 91 | 90 | 94 | 94 | 90 | 88 | 82 | 85 | 89 | 85 | 89 | 85 | |
| Indiana | 99 | 99 | 99 | 99 | 99 | 97 | 99 | 98 | 99 | 93 | 96 | 96 | 99 | 96 | 94 | 93 | 96 | 94 | 96 | 89 | 93 | 84 | 86 | 84 | 85 | 87 | 89 | 86 |
| Iowa | 62 | 71 | 78 | 78 | 80 | 83 | 87 | 84 | 86 | 80 | 79 | 82 | 85 | 89 | 82 | 88 | 85 | 88 | 89 | 85 | 86 | 83 | 81 | 82 | 87 | 83 | 80 | 77 |
| Missouri | 78 | 82 | 82 | 89 | 84 | 82 | 90 | 87 | 84 | 85 | 84 | 83 | 88 | 81 | 88 | 89 | 85 | 84 | 89 | 82 | 78 | 73 | 75 | 82 | 82 | 80 | 79 | |
| Ohio | 96 | 100 | 99 | 99 | 99 | 99 | 100 | 99 | 97 | 94 | 98 | 95 | 97 | 95 | 94 | 100 | 97 | 97 | 96 | 96 | 89 | 94 | 92 | 93 | 92 | 89 | 91 | |
| Kansas | 29 | 43 | 45 | 46 | 49 | 47 | 53 | 49 | 66 | 42 | 48 | 47 | 44 | 34 | 45 | 32 | 31 | NA | |
| Nebraska | 18 | 15 | 26 | 40 | 49 | 44 | 46 | 43 | 50 | 50 | 49 | 43 | 42 | 37 | 37 | 40 | 35 | 35 | 38 | 45 | 49 | 46 | 37 | 35 | 36 | 28 | 34 | 29 |
| South Dakota | 1 | 4 | 7 | 8 | 9 | 19 | 28 | 17 | 20 | 27 | 24 | 25 | 31 | 32 | 26 | 31 | 35 | 39 | 32 | 31 | 30 | 28 | 31 | 18 | 30 | 30 | 33 | 26 |
| Kentucky | 92 | 90 | 95 | 84 | 94 | 91 | 93 | 97 | 91 | 91 | 96 | 99 | 94 | 98 | 92 | 94 | 89 | NA | |
| North Carolina | 99 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 100 | 71 | 97 | 99 | 99 | 99 | 98 | 100 | 99 | NA | |
| Tennessee | 92 | 92 | 94 | 97 | 94 | 98 | 98 | NA |
| Virginia | 100 | 96 | 99 | 98 | 100 | 97 | 100 | 99 | 98 | NA |
| Alabama | 98 | 98 | 100 | 98 | 99 | 98 | 100 | NA |
| Florida | NA | 100 | 99 | 94 | 98 | 100 | 96 | NA |
| Georgia | 99 | 100 | 99 | 100 | 100 | 99 | 100 | 98 | 113 | 98 | 98 | 96 | 100 | 100 | 98 | 100 | 97 | NA | |
| South Carolina | 99 | 99 | 99 | 95 | 100 | 100 | 100 | NA |
| Mississippi | 89 | 81 | 93 | 76 | 93 | 93 | 93 | NA |
| Colorado | NA | 37 | 14 | 19 | 26 | 20 | 34 | 37 | 29 | 37 | NA |
| Texas | 54 | 36 | 45 | 34 | 24 | 31 | NA | NA | NA | NA | NA | 63 | 29 | NA | 43 | 40 | NA |
| Average | 72 | 77 | 80 | 82 | 84 | 82 | 85 | 82 | 86 | 80 | 83 | 82 | 84 | 82 | 81 | 82 | 81 | 84 | 84 | 83 | 82 | 79 | 76 | 75 | 78 | 77 | 73 | |

NA = Not available.

Appendix table 7--Potash used on corn, rate per fertilized acre receiving potash, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|
| Delaware | NA | 93 | 74 | 101 | 95 | 84 | 96 | NA | | |
| Maryland | NA | NA | 82 | 79 | 86 | 78 | 74 | 87 | 96 | 94 | 87 | 84 | 99 | NA | | |
| New York | NA | 49 | 60 | 65 | 61 | 60 | 68 | NA | | |
| Pennsylvania | NA | 52 | 49 | 47 | 50 | 56 | 51 | 54 | 56 | 58 | 52 | 48 | 51 | 56 | 59 | 58 | 57 | NA | | |
| Michigan | 42 | 48 | 51 | 71 | 70 | 87 | 73 | 81 | 69 | 76 | 73 | 70 | 74 | 79 | 90 | 85 | 90 | 83 | 92 | 94 | 108 | 104 | 90 | 104 | 103 | 105 | 95 | 95 | | |
| Minnesota | 30 | 36 | 41 | 46 | 61 | 60 | 70 | 61 | 60 | 73 | 69 | 61 | 68 | 77 | 63 | 73 | 76 | 76 | 69 | 66 | 68 | 65 | 62 | 65 | 65 | 69 | 69 | 63 | | |
| Wisconsin | 45 | 47 | 63 | 73 | 78 | 75 | 82 | 71 | 78 | 86 | 88 | 84 | 105 | 87 | 89 | 91 | 85 | 91 | 91 | 86 | 84 | 69 | 70 | 82 | 77 | 73 | 74 | 69 | | |
| Illinois | 40 | 50 | 68 | 70 | 76 | 78 | 92 | 64 | 80 | 83 | 85 | 78 | 92 | 99 | 99 | 109 | 111 | 109 | 112 | 111 | 117 | 114 | 105 | 110 | 109 | 101 | 107 | 104 | | |
| Indiana | 57 | 80 | 92 | 91 | 98 | 90 | 101 | 94 | 109 | 105 | 97 | 88 | 105 | 105 | 100 | 109 | 122 | 106 | 106 | 107 | 104 | 115 | 113 | 107 | 113 | 110 | 111 | 112 | | |
| Iowa | 26 | 31 | 38 | 45 | 54 | 58 | 63 | 52 | 56 | 55 | 64 | 62 | 67 | 73 | 73 | 75 | 74 | 73 | 75 | 76 | 80 | 73 | 66 | 73 | 78 | 69 | 74 | 68 | | |
| Missouri | 31 | 37 | 45 | 44 | 46 | 55 | 55 | 49 | 64 | 61 | 64 | 61 | 59 | 69 | 71 | 71 | 71 | 74 | 67 | 79 | 66 | 73 | 66 | 73 | 69 | 72 | 80 | 72 | | |
| Ohio | 53 | 51 | 62 | 70 | 74 | 76 | 84 | 73 | 81 | 82 | 83 | 68 | 82 | 100 | 91 | 101 | 106 | 114 | 104 | 98 | 102 | 97 | 102 | 109 | 111 | 101 | 101 | 103 | | |
| Kansas | 15 | 19 | 20 | 22 | 17 | 24 | 28 | 23 | 24 | 29 | 31 | 21 | 44 | 27 | 31 | 29 | 17 | NA | | |
| Nebraska | 11 | 16 | 12 | 18 | 15 | 23 | 22 | 23 | 18 | 21 | 19 | 19 | 25 | 20 | 20 | 26 | 14 | 21 | 17 | 24 | 25 | 22 | 22 | 16 | 22 | 23 | 22 | 20 | | |
| South Dakota | 10 | 17 | 13 | 30 | 14 | 12 | 13 | 13 | 20 | 16 | 11 | 18 | 14 | 18 | 19 | 18 | 16 | 17 | 20 | 18 | 18 | 16 | 23 | 20 | 26 | 23 | 24 | 22 | | |
| Kentucky | 49 | 52 | 56 | 62 | 64 | 74 | 70 | 71 | 81 | 80 | 61 | 72 | 93 | 89 | 92 | 83 | 80 | NA | | |
| North Carolina | 49 | 52 | 57 | 62 | 61 | 70 | 68 | 75 | 75 | 71 | 75 | 77 | 68 | 86 | 90 | 97 | 92 | NA | | |
| Tennessee | 45 | 48 | 50 | 52 | 59 | 59 | 62 | NA | NA | |
| Virginia | 71 | 74 | 88 | 89 | 87 | 94 | 90 | 109 | 94 | 104 | 110 | 96 | 124 | 105 | 91 | 83 | 80 | NA | NA | |
| Alabama | 39 | 42 | 46 | 49 | 42 | 54 | 52 | NA | NA | |
| Florida | NA | NA | 58 | 54 | 71 | 69 | 65 | NA | NA | |
| Georgia | 52 | 56 | 67 | 71 | 73 | 74 | 74 | 72 | 74 | 75 | 75 | 68 | 75 | 99 | 98 | 89 | 87 | 90 | NA | | |
| South Carolina | 43 | 51 | 68 | 71 | 81 | 78 | 84 | NA | NA | |
| Mississippi | 34 | 35 | 35 | 35 | 39 | 40 | 49 | NA | NA | |
| Colorado | NA | 33 | 51 | 43 | 32 | 23 | 29 | 37 | 36 | 29 | NA | NA | NA |
| Texas | 21 | 20 | 23 | 22 | 34 | 22 | 23 | NA | NA | NA | NA | 36 | 57 | NA | 23 | 44 | NA | NA | |
| Average | 35 | 48 | 57 | 60 | 65 | 67 | 72 | 64 | 69 | 71 | 73 | 67 | 78 | 82 | 80 | 84 | 86 | 86 | 86 | 85 | 87 | 84 | 80 | 85 | 85 | 81 | 84 | 81 | 81 | |

NA = Not available.

Appendix table 8--Percentage of cotton acreage receiving any fertilizer, selected States

| States | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | | |
|----------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|----|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : 100 | 100 | 99 | 99 | 95 | 94 | 90 | 99 | 100 | 100 | 97 | 96 | 93 | 100 | 97 | 100 | 100 | 92 | 100 | 100 | 100 | 98 | 100 | NA | NA | NA | NA | NA | | |
| North Carolina | : 100 | 100 | 98 | 100 | 100 | 99 | 100 | 100 | 100 | 98 | 100 | 100 | 100 | 100 | NA | | |
| Tennessee | : 98 | 100 | 92 | 97 | 99 | 100 | 99 | 99 | 95 | 100 | 100 | 100 | 91 | 99 | 97 | 99 | 100 | NA | 97 | 100 | 100 | 100 | 100 | NA | NA | NA | NA | NA | | |
| Alabama | : 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 98 | 99 | NA | NA | NA | NA | | |
| Georgia | : 100 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 98 | 99 | NA | NA | NA | NA | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | : 100 | 100 | 100 | 100 | 100 | 99 | 100 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | NA | 100 | 100 | 100 | 100 | 100 | 100 | 98 | 100 | 96 | NA | NA | NA | NA | NA | |
| Arkansas | : 98 | 99 | 98 | 99 | 100 | 98 | 97 | 98 | 100 | 97 | 98 | 98 | 98 | 98 | 98 | 94 | 99 | 99 | 100 | 100 | 100 | 100 | 99 | 99 | 100 | 95 | 100 | 96 | | |
| Louisiana | : 97 | 93 | 90 | 91 | 92 | 97 | 95 | 98 | 98 | 91 | 100 | 98 | 98 | 100 | 100 | 100 | 100 | 98 | 100 | 100 | 100 | 99 | 100 | 100 | 100 | 100 | 94 | 100 | 99 | 92 |
| Mississippi | : 99 | 100 | 100 | 97 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 100 | 99 | 100 | 99 | 99 | 98 | 98 | 100 | 98 | 100 | 99 | 100 | |
| Oklahoma | : 51 | 55 | 51 | 51 | 41 | 53 | 50 | 44 | 46 | 50 | 47 | 29 | 63 | 60 | 63 | 55 | 67 | 45 | 43 | 57 | 66 | 59 | 67 | NA | NA | NA | NA | NA | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | : 51 | 55 | 52 | 47 | 46 | 49 | 49 | 50 | 51 | 53 | 55 | 32 | 49 | 59 | 41 | 53 | 50 | 61 | 39 | 41 | 56 | 57 | 56 | 57 | 68 | 63 | 67 | 70 | | |
| Arizona | : 94 | 93 | 96 | 89 | 95 | 97 | 90 | 91 | 82 | 88 | 97 | 83 | 88 | 92 | 89 | 93 | 90 | 92 | 95 | 90 | 99 | 95 | 93 | 95 | 91 | 95 | 94 | 99 | | |
| New Mexico | : 71 | 74 | 56 | 68 | 67 | 63 | 67 | 60 | 68 | 64 | 56 | 45 | 59 | NA | NA | 70 | 42 | 66 | 49 | 54 | 67 | 59 | 49 | NA | NA | NA | NA | NA | | |
| California | : 96 | 97 | 94 | 92 | 94 | 94 | 93 | 90 | 92 | 92 | 83 | 86 | 94 | 95 | 96 | 94 | 95 | 97 | 95 | 95 | 92 | 87 | 92 | 93 | 94 | 97 | 94 | 96 | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : 78 | 79 | 77 | 73 | 74 | 76 | 72 | 75 | 77 | 75 | 79 | 65 | 76 | 79 | 69 | 71 | 71 | 75 | 71 | 68 | 77 | 76 | 80 | 76 | 80 | 79 | 80 | 81 | | |

NA = Not available.

Appendix table 9--Percentage of cotton acreage receiving nitrogen fertilizer, selected States

| States | : 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : 100 | 99 | 94 | 99 | 93 | 94 | 90 | 99 | 100 | 88 | 97 | 96 | 90 | 96 | 91 | 96 | 100 | 92 | 100 | 100 | 100 | 98 | 100 | NA | NA | NA | NA | NA |
| North Carolina | : 100 | 100 | 98 | 100 | 100 | 99 | 100 | 100 | 100 | 98 | 100 | 100 | 100 | NA |
| Tennessee | : 98 | 100 | 92 | 97 | 99 | 100 | 96 | 99 | 95 | 100 | 100 | 100 | 91 | 96 | 97 | 99 | 100 | NA | 97 | 100 | 100 | 99 | 100 | NA | NA | NA | NA | NA |
| Alabama | : 99 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 99 | 100 | 100 | 98 | 99 | 100 | 100 | 100 | 99 | 100 | 100 | 98 | 99 | NA | NA | NA | NA | NA | |
| Georgia | : 100 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 86 | 93 | 100 | 100 | 100 | 100 | 92 | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | : 100 | 100 | 100 | 100 | 100 | 99 | 100 | 99 | 99 | 100 | 100 | 99 | 100 | 100 | NA | 100 | 100 | 100 | 100 | 100 | 98 | 100 | 96 | NA | NA | KA | NA | NA |
| Arkansas | : 97 | 99 | 97 | 98 | 99 | 96 | 95 | 98 | 99 | 97 | 98 | 98 | 97 | 95 | 93 | 98 | 98 | 97 | 97 | 97 | 97 | 100 | 99 | 99 | 99 | 94 | 99 | 96 |
| Louisiana | : 97 | 93 | 90 | 91 | 92 | 97 | 95 | 98 | 98 | 91 | 98 | 98 | 98 | 99 | 100 | 96 | 98 | 98 | 100 | 99 | 100 | 99 | 100 | 100 | 94 | 100 | 99 | 90 |
| Mississippi | : 99 | 100 | 98 | 97 | 100 | 100 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 99 | 100 | 99 | 99 | 100 | 99 | 98 | 98 | 96 | 100 | 98 | 100 | 99 | 100 |
| Oklahoma | : 51 | 55 | 50 | 51 | 41 | 53 | 50 | 44 | 46 | 50 | 47 | 29 | 61 | 60 | 61 | 55 | 67 | 43 | 43 | 57 | 66 | 59 | 46 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | : 50 | 55 | 51 | 47 | 45 | 48 | 48 | 50 | 51 | 53 | 55 | 32 | 49 | 59 | 41 | 53 | 50 | 60 | 39 | 41 | 55 | 57 | 56 | 57 | 68 | 63 | 66 | 70 |
| Arizona | : 94 | 92 | 96 | 89 | 95 | 97 | 90 | 91 | 82 | 88 | 97 | 82 | 88 | 92 | 89 | 93 | 90 | 92 | 94 | 90 | 98 | 95 | 93 | 95 | 90 | 95 | 94 | 99 |
| New Mexico | : 63 | 71 | 52 | 67 | 67 | 57 | 61 | 56 | 61 | 64 | 52 | 45 | 56 | NA | NA | 70 | 40 | 65 | 47 | 54 | 66 | 59 | 49 | NA | NA | NA | NA | NA |
| California | : 95 | 96 | 94 | 91 | 94 | 93 | 92 | 90 | 92 | 88 | 84 | 86 | 94 | 95 | 96 | 94 | 95 | 97 | 95 | 95 | 91 | 87 | 92 | 93 | 93 | 97 | 94 | 95 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : 77 | 79 | 76 | 72 | 73 | 75 | 72 | 74 | 77 | 74 | 79 | 65 | 75 | 78 | 69 | 71 | 71 | 75 | 71 | 68 | 76 | 76 | 80 | 76 | 79 | 79 | 81 | |

NA = Not available.

Appendix table 10--Nitrogen used on cotton, rate per fertilized acre receiving nitrogen, selected States

| States | : 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | |
| Missouri | : 85 | 64 | 71 | 50 | 54 | 56 | 57 | 55 | 63 | 47 | 60 | 56 | 36 | 49 | 44 | 52 | 55 | 47 | 54 | 44 | 70 | 56 | 57 | NA | NA | NA | NA | |
| North Carolina | : 65 | 90 | 63 | 69 | 74 | 62 | 67 | 53 | 66 | 86 | 70 | 84 | 102 | NA | |
| Tennessee | : 67 | 71 | 85 | 61 | 51 | 67 | 61 | 72 | 69 | 67 | 66 | 69 | 71 | 68 | 74 | 76 | 73 | NA | 67 | 91 | 82 | 78 | 75 | NA | NA | NA | NA | |
| Alabama | : 72 | 81 | 83 | 78 | 71 | 80 | 78 | 84 | 89 | 82 | 100 | 74 | 72 | 74 | 66 | 70 | 73 | 73 | 101 | 79 | 78 | 88 | 82 | NA | NA | NA | NA | |
| Georgia | : 80 | 86 | 104 | 102 | 97 | 105 | 92 | 94 | 82 | 95 | 119 | 130 | 92 | 109 | 78 | 69 | 80 | 63 | 79 | 72 | 69 | 78 | 80 | NA | NA | NA | NA | |
| LS | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | |
| South Carolina | : 68 | 78 | 101 | 91 | 101 | 88 | 80 | 88 | 95 | 99 | 101 | 109 | 92 | 125 | NA | 84 | 78 | 81 | 84 | 107 | 95 | 92 | 84 | NA | NA | NA | NA | NA |
| Arkansas | : 68 | 72 | 70 | 68 | 63 | 65 | 67 | 63 | 62 | 69 | 68 | 57 | 65 | 66 | 64 | 62 | 59 | 64 | 67 | 69 | 75 | 70 | 84 | 81 | 79 | 80 | 85 | 86 |
| Louisiana | : 54 | 56 | 69 | 69 | 76 | 63 | 81 | 69 | 73 | 71 | 69 | 69 | 72 | 70 | 78 | 68 | 69 | 73 | 74 | 69 | 81 | 80 | 95 | 74 | 88 | 86 | 77 | 100 |
| Mississippi | : 77 | 104 | 98 | 98 | 91 | 93 | 96 | 93 | 92 | 90 | 103 | 92 | 90 | 98 | 92 | 87 | 92 | 91 | 94 | 98 | 103 | 104 | 102 | 106 | 110 | 103 | 109 | 109 |
| Oklahoma | : 28 | 30 | 28 | 19 | 28 | 27 | 25 | 31 | 32 | 34 | 21 | 28 | 34 | 27 | 34 | 32 | 32 | 50 | 34 | 45 | 53 | 34 | 29 | NA | NA | NA | NA | |
| TX | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | |
| Texas | : 59 | 62 | 62 | 55 | 51 | 61 | 57 | 57 | 53 | 46 | 48 | 39 | 52 | 45 | 50 | 45 | 43 | 44 | 41 | 52 | 47 | 49 | 45 | 51 | 45 | 48 | 59 | 69 |
| Arizona | : 130 | 131 | 141 | 141 | 142 | 145 | 135 | 123 | 117 | 120 | 123 | 117 | 155 | 148 | 135 | 142 | 161 | 159 | 126 | 113 | 150 | 157 | 122 | 159 | 144 | 178 | 155 | 170 |
| New Mexico | : 85 | 81 | 73 | 67 | 83 | 92 | 72 | 70 | 69 | 60 | 49 | 54 | 59 | NA | NA | 61 | 64 | 58 | 64 | 88 | 71 | 58 | 54 | NA | NA | NA | NA | NA |
| California | : 111 | 150 | 138 | 145 | 157 | 135 | 129 | 124 | 121 | 125 | 104 | 137 | 146 | 142 | 120 | 106 | 108 | 110 | 117 | 117 | 116 | 118 | 104 | 115 | 124 | 123 | 140 | 138 |
| LA | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | |
| Average | : 69 | 81 | 84 | 79 | 80 | 91 | 75 | 75 | 75 | 73 | 78 | 78 | 81 | 78 | 76 | 71 | 72 | 72 | 82 | 81 | 81 | 80 | 77 | 82 | 78 | 84 | 86 | 91 |

NA = Not available.

Appendix table 11--Percentage of cotton acreage receiving phosphate fertilizer, selected States

| States | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 95 | 96 | 96 | 94 | 92 | 91 | 84 | 84 | 91 | 94 | 85 | 84 | 91 | 83 | 88 | 96 | 78 | 75 | 83 | 100 | 100 | 68 | 82 | NA | NA | NA | NA | | |
| North Carolina | 100 | 100 | 95 | 100 | 100 | 90 | 100 | 98 | 100 | 95 | 100 | 91 | 91 | 91 | NA | |
| Tennessee | 97 | 92 | 89 | 91 | 89 | 97 | 96 | 93 | 94 | 100 | 96 | 98 | 91 | 92 | 95 | 99 | 94 | NA | 97 | 100 | 100 | 97 | 100 | NA | NA | NA | NA | NA | |
| Alabama | 100 | 100 | 100 | 100 | 99 | 98 | 100 | 100 | 98 | 95 | 99 | 92 | 93 | 91 | 95 | 84 | 93 | 97 | 93 | 86 | 91 | 88 | 87 | NA | NA | NA | NA | NA | |
| Georgia | 99 | 99 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 96 | 98 | 93 | 90 | 91 | 93 | 93 | 87 | NA | NA | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | 100 | 100 | 100 | 100 | 100 | 97 | 100 | 97 | 97 | 99 | 94 | 91 | 100 | 94 | NA | 87 | 97 | 83 | 83 | 83 | 87 | 83 | 77 | NA | NA | NA | NA | NA | |
| Arkansas | 59 | 72 | 77 | 79 | 66 | 68 | 60 | 64 | 72 | 70 | 72 | 67 | 74 | 75 | 62 | 78 | 76 | 59 | 68 | 68 | 80 | 76 | 68 | 75 | 71 | 70 | 83 | 70 | |
| Louisiana | 62 | 63 | 58 | 61 | 48 | 62 | 57 | 69 | 70 | 60 | 59 | 50 | 63 | 63 | 81 | 65 | 92 | 80 | 73 | 62 | 77 | 70 | 72 | 68 | 59 | 70 | 62 | 46 | |
| Mississippi | 59 | 56 | 71 | 58 | 63 | 59 | 42 | 41 | 48 | 49 | 45 | 47 | 40 | 43 | 36 | 32 | 33 | 41 | 41 | 45 | 44 | 42 | 39 | 48 | 50 | 54 | 42 | 52 | |
| Oklahoma | 49 | 48 | 45 | 45 | 38 | 50 | 43 | 38 | 42 | 45 | 43 | 29 | 55 | 58 | 61 | 51 | 58 | 34 | 19 | 52 | 42 | 32 | 39 | NA | NA | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | 38 | 40 | 40 | 39 | 37 | 34 | 30 | 30 | 36 | 41 | 47 | 23 | 40 | 45 | 28 | 45 | 43 | 53 | 28 | 31 | 39 | 47 | 44 | 46 | 56 | 53 | 48 | 53 | |
| Arizona | 50 | 42 | 45 | 47 | 46 | 39 | 36 | 46 | 49 | 53 | 51 | 34 | 47 | 58 | 38 | 46 | 34 | 36 | 35 | 45 | 48 | 51 | 39 | 39 | 58 | 51 | 47 | 62 | |
| New Mexico | 58 | 45 | 44 | 57 | 62 | 48 | 50 | 42 | 63 | 38 | 48 | 32 | 38 | NA | NA | 51 | 28 | 42 | 30 | 30 | 34 | 47 | 28 | NA | NA | NA | NA | NA | NA |
| California | 48 | 37 | 26 | 42 | 47 | 42 | 41 | 41 | 43 | 45 | 38 | 30 | 47 | 47 | 39 | 31 | 27 | 36 | 30 | 33 | 27 | 23 | 16 | 26 | 36 | 42 | 31 | 35 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 58 | 59 | 59 | 56 | 56 | 54 | 48 | 50 | 55 | 55 | 58 | 43 | 53 | 51 | 45 | 48 | 48 | 52 | 41 | 44 | 48 | 50 | 50 | 44 | 54 | 54 | 49 | 52 | |

NA = Not available.

Appendix table 12--Phosphate used on cotton, rate per fertilized acre receiving phosphate, selected States

| States | : 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Missouri | : 58 | 46 | 57 | 53 | 48 | 49 | 42 | 45 | 51 | 54 | 51 | 43 | 47 | 39 | 48 | 50 | 45 | 37 | 31 | 39 | 31 | 35 | 48 | NA | NA | NA | NA | NA |
| North Carolina | : 54 | 54 | 53 | 65 | 54 | 54 | 55 | 53 | 57 | 68 | 56 | 52 | 44 | NA |
| Tennessee | : 53 | 57 | 64 | 61 | 58 | 57 | 62 | 63 | 61 | 69 | 60 | 52 | 59 | 67 | 69 | 74 | 64 | NA | 62 | 65 | 62 | 61 | 65 | NA | NA | NA | NA | NA |
| Alabama | : 62 | 63 | 69 | 71 | 71 | 70 | 74 | 71 | 73 | 77 | 76 | 57 | 71 | 72 | 64 | 63 | 63 | 57 | 65 | 62 | 60 | 62 | 57 | NA | NA | NA | NA | NA |
| Georgia | : 64 | 65 | 66 | 64 | 62 | 65 | 59 | 61 | 60 | 65 | 55 | 53 | 61 | 67 | 60 | 47 | 50 | 48 | 53 | 53 | 51 | 62 | 55 | NA | NA | NA | NA | NA |
| Pounds | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | : 76 | 81 | 85 | 85 | 89 | 84 | 71 | 78 | 77 | 72 | 69 | 66 | 63 | 65 | NA | 51 | 60 | 42 | 44 | 42 | 47 | 51 | 58 | NA | NA | NA | NA | NA |
| Arkansas | : 39 | 46 | 44 | 41 | 45 | 46 | 43 | 40 | 44 | 45 | 40 | 40 | 41 | 48 | 42 | 37 | 39 | 40 | 36 | 34 | 38 | 37 | 39 | 43 | 44 | 35 | 36 | 40 |
| Louisiana | : 34 | 40 | 48 | 49 | 43 | 46 | 50 | 50 | 54 | 59 | 54 | 45 | 52 | 51 | 48 | 49 | 48 | 46 | 47 | 42 | 52 | 48 | 43 | 47 | 51 | 45 | 48 | 55 |
| Mississippi | : 50 | 58 | 54 | 56 | 52 | 56 | 60 | 55 | 64 | 64 | 64 | 59 | 53 | 57 | 54 | 61 | 50 | 45 | 54 | 50 | 57 | 56 | 54 | 52 | 49 | 50 | 50 | |
| Oklahoma | : 28 | 27 | 33 | 23 | 28 | 37 | 27 | 36 | 38 | 33 | 30 | 29 | 31 | 38 | 39 | 43 | 30 | 46 | 29 | 36 | 42 | 34 | 29 | NA | NA | NA | NA | NA |
| Texas | : 46 | 44 | 45 | 43 | 44 | 46 | 45 | 42 | 44 | 45 | 43 | 39 | 43 | 47 | 42 | 45 | 39 | 40 | 30 | 40 | 39 | 39 | 35 | 37 | 38 | 37 | 40 | 41 |
| Arizona | : 66 | 78 | 69 | 62 | 68 | 70 | 59 | 62 | 57 | 66 | 58 | 49 | 62 | 59 | 53 | 61 | 72 | 67 | 59 | 43 | 59 | 55 | 47 | 70 | 59 | 64 | 68 | 66 |
| New Mexico | : 60 | 79 | 64 | 70 | 74 | 77 | 85 | 50 | 69 | 64 | 57 | 58 | 59 | NA | NA | 54 | 51 | 50 | 57 | 49 | 64 | 48 | 60 | NA | NA | NA | NA | NA |
| California | : 62 | 81 | 72 | 99 | 88 | 91 | 60 | 73 | 70 | 84 | 59 | 74 | 78 | 75 | 81 | 65 | 61 | 73 | 61 | 52 | 61 | 56 | 62 | 60 | 45 | 56 | 68 | 87 |
| Average | : 49 | 55 | 55 | 55 | 57 | 60 | 55 | 53 | 55 | 53 | 53 | 50 | 52 | 53 | 54 | 50 | 46 | 46 | 46 | 45 | 48 | 46 | 44 | 44 | 42 | 43 | 44 | 47 |

NA = Not available.

Appendix table 13--Percentage of cotton acreage receiving potash fertilizer, selected States

| States | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : 95 | 96 | 96 | 94 | 92 | 91 | 84 | 87 | 91 | 97 | 89 | 87 | 91 | 88 | 94 | 100 | 100 | 85 | 83 | 100 | 180 | 98 | 88 | NA | NA | NA | NA | NA |
| North Carolina | : 100 | 103 | 98 | 100 | 100 | 90 | 100 | 100 | 100 | 98 | 100 | 98 | 100 | 100 | NA |
| Tennessee | : 98 | 93 | 90 | 92 | 90 | 97 | 96 | 93 | 95 | 100 | 98 | 99 | 91 | 92 | 95 | 99 | 94 | NA | 97 | 100 | 180 | 94 | 100 | NA | NA | NA | NA | NA |
| Alabama | : 99 | 100 | 100 | 100 | 99 | 98 | 100 | 99 | 98 | 97 | 99 | 98 | 98 | 97 | 95 | 84 | 93 | 91 | 93 | 89 | 88 | 80 | 77 | NA | NA | NA | NA | NA |
| Georgia | : 100 | 99 | 100 | 100 | 100 | 98 | 100 | 100 | 98 | 100 | 100 | 100 | 98 | 100 | 100 | 99 | 98 | 85 | 100 | 100 | 98 | 100 | 90 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | : 100 | 100 | 100 | 100 | 100 | 97 | 100 | 99 | 99 | 99 | 100 | 100 | 100 | 99 | NA | 100 | 92 | 97 | 86 | 100 | 98 | 98 | 85 | NA | NA | NA | NA | NA |
| Arkansas | : 65 | 73 | 76 | 79 | 61 | 68 | 63 | 65 | 70 | 69 | 75 | 72 | 77 | 78 | 74 | 83 | 85 | 62 | 72 | 70 | 82 | 77 | 81 | 79 | 75 | 71 | 87 | 73 |
| Louisiana | : 69 | 64 | 58 | 62 | 51 | 64 | 56 | 69 | 70 | 60 | 59 | 50 | 63 | 61 | 81 | 65 | 92 | 80 | 72 | 70 | 77 | 76 | 73 | 71 | 65 | 72 | 62 | 43 |
| Mississippi | : 59 | 54 | 72 | 58 | 62 | 59 | 42 | 43 | 47 | 50 | 46 | 48 | 40 | 44 | 38 | 33 | 34 | 48 | 41 | 50 | 46 | 44 | 49 | 60 | 56 | 61 | 56 | 68 |
| Oklahoma | : 33 | 40 | 40 | 41 | 35 | 42 | 33 | 37 | 35 | 35 | 41 | 16 | 40 | 26 | 35 | 34 | 28 | 15 | 15 | 26 | 4 | 3 | 25 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | : 10 | 11 | 14 | 12 | 18 | 14 | 13 | 12 | 11 | 15 | 24 | 9 | 13 | 15 | 9 | 17 | 18 | 21 | 13 | 14 | 18 | 22 | 18 | 23 | 22 | 22 | 20 | 25 |
| Arizona | : 2 | 2 | 1 | 1 | 1 | 2 | 4 | 3 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 2 | 2 | 3 | 11 | 4 | 9 | 7 | NA | 7 | 3 | 8 | 18 |
| New Mexico | : NA | 5 | 9 | 9 | 13 | NA | 6 | 11 | 9 | 5 | 16 | 13 | 8 | NA | NA | 14 | 2 | 12 | 8 | 9 | 14 | 2 | 3 | NA | NA | NA | NA | NA |
| California | : 8 | NA | 4 | 6 | 6 | 1 | 9 | 6 | 12 | 9 | 10 | 1 | 7 | 10 | 8 | 5 | 3 | 5 | 4 | 6 | 2 | 3 | 2 | NA | 16 | 13 | 3 | 10 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : 43 | 44 | 45 | 40 | 43 | 39 | 36 | 39 | 41 | 39 | 46 | 33 | 37 | 31 | 31 | 27 | 30 | 30 | 30 | 32 | 34 | 39 | 33 | 32 | 32 | 31 | 34 | |

NA = Not available.

Appendix table 14--Potash used on cotton, rate per fertilized acre receiving potash, selected States

| States | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 59 | 49 | 61 | 56 | 52 | 57 | 44 | 50 | 56 | 77 | 73 | 56 | 57 | 62 | 51 | 52 | 75 | 67 | 80 | 68 | 66 | 62 | 63 | NA | NA | NA | NA | |
| North Carolina | 69 | 69 | 68 | 80 | 75 | 70 | 75 | 70 | 84 | 92 | 90 | 82 | 81 | NA |
| Tennessee | 56 | 62 | 66 | 63 | 59 | 60 | 64 | 63 | 64 | 69 | 61 | 58 | 64 | 69 | 74 | 79 | 74 | NA | 68 | 71 | 68 | 67 | 71 | NA | NA | NA | NA | |
| Alabama | 63 | 66 | 70 | 73 | 73 | 71 | 77 | 73 | 77 | 83 | 75 | 66 | 80 | 85 | 69 | 68 | 70 | 68 | 72 | 72 | 70 | 73 | 62 | NA | NA | NA | NA | |
| Georgia | 89 | 89 | 104 | 95 | 94 | 92 | 85 | 90 | 91 | 102 | 103 | 84 | 88 | 110 | 93 | 79 | 77 | 83 | 89 | 73 | 88 | 86 | 88 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Carolina | 88 | 89 | 90 | 89 | 101 | 98 | 90 | 96 | 102 | 102 | 108 | 99 | 113 | 110 | NA | 102 | 97 | 97 | 84 | 102 | 103 | 90 | 96 | NA | NA | NA | NA | NA |
| Arkansas | 48 | 51 | 51 | 47 | 55 | 54 | 53 | 50 | 54 | 50 | 46 | 46 | 55 | 60 | 50 | 51 | 53 | 58 | 48 | 46 | 53 | 51 | 65 | 63 | 58 | 62 | 57 | 61 |
| Louisiana | 35 | 41 | 48 | 50 | 46 | 47 | 50 | 53 | 56 | 60 | 51 | 45 | 52 | 49 | 49 | 53 | 52 | 51 | 53 | 58 | 59 | 64 | 48 | 55 | 58 | 55 | 62 | 79 |
| Mississippi | 50 | 55 | 55 | 57 | 53 | 57 | 61 | 63 | 65 | 65 | 64 | 66 | 54 | 57 | 59 | 63 | 55 | 59 | 65 | 63 | 68 | 59 | 63 | 71 | 59 | 65 | 78 | 76 |
| Oklahoma | 14 | 14 | 19 | 13 | 14 | 17 | 13 | 15 | 26 | 17 | 15 | 16 | 14 | 15 | 15 | 23 | 15 | 24 | 23 | 18 | 12 | 10 | 15 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | 16 | 18 | 18 | 20 | 18 | 21 | 21 | 17 | 19 | 14 | 17 | 12 | 16 | 14 | 16 | 16 | 14 | 20 | 20 | 22 | 15 | 21 | 13 | 14 | 13 | 12 | 17 | 23 |
| Arizona | 88 | 8 | 15 | 40 | 36 | 12 | 16 | 41 | 39 | 34 | 27 | 22 | 16 | 37 | 26 | 55 | 9 | 7 | 34 | 14 | 29 | 6 | 12 | NA | 14 | NA | NA | 10 |
| New Mexico | NA | 28 | 23 | 40 | 41 | NA | 17 | 12 | 31 | 18 | 26 | 18 | 22 | NA | NA | 15 | 10 | 19 | 37 | 1 | 6 | 14 | 6 | NA | NA | NA | NA | NA |
| California | 26 | NA | 16 | 74 | 46 | 31 | 24 | 37 | 49 | 50 | 22 | 43 | 70 | 50 | 67 | 44 | 75 | 84 | 39 | 38 | 87 | 112 | 24 | NA | 39 | 14 | 40 | 38 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 37 | 57 | 58 | 55 | 58 | 57 | 57 | 58 | 61 | 62 | 55 | 55 | 56 | 52 | 54 | 44 | 46 | 46 | 55 | 52 | 53 | 52 | 50 | 45 | 39 | 40 | 47 | 48 |

NA = Not available.

Appendix table 15--Percentage of soybean acreage receiving any fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | : | 4 | 13 | 12 | 14 | 25 | 22 | 22 | 10 | 14 | 26 | 23 | 13 | 13 | 11 | 15 | 22 | 15 | 15 | 13 | 23 | 26 | 19 | 11 | 13 | 23 | 19 | 13 | 14 | |
| Illinois | : | 8 | 16 | 18 | 17 | 17 | 11 | 17 | 20 | 22 | 29 | 19 | 20 | 28 | 26 | 19 | 24 | 24 | 22 | 18 | 32 | 24 | 22 | 23 | 27 | 35 | 34 | 37 | 31 | |
| Indiana | : | 38 | 42 | 48 | 56 | 51 | 52 | 61 | 52 | 48 | 63 | 58 | 55 | 56 | 56 | 57 | 67 | 53 | 52 | 45 | 43 | 54 | 52 | 38 | 50 | 51 | 43 | 45 | 36 | |
| Iowa | : | 6 | 10 | 18 | 15 | 22 | 13 | 13 | 11 | 14 | 16 | 11 | 11 | 9 | 15 | 13 | 12 | 8 | 9 | 10 | 12 | 18 | 12 | 10 | 18 | 13 | 19 | 15 | 14 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : | 7 | 11 | 20 | 20 | 20 | 18 | 17 | 17 | 27 | 25 | 14 | 13 | 12 | 16 | 30 | 31 | 29 | 22 | 25 | 19 | 14 | 23 | 23 | 28 | 28 | 25 | 15 | 25 | |
| Ohio | : | 23 | 27 | 34 | 42 | 34 | 46 | 46 | 42 | 54 | 49 | 55 | 48 | 50 | 52 | 40 | 59 | 51 | 47 | 40 | 42 | 48 | 60 | 56 | 51 | 48 | 51 | 47 | 49 | |
| Kansas | : | 12 | 4 | 6 | 21 | 16 | 16 | 20 | 11 | 14 | 19 | 14 | 6 | 10 | 23 | 16 | 21 | 22 | NA | NA | |
| Nebraska | : | 12 | 10 | 39 | 25 | 25 | 15 | 24 | 9 | 22 | 23 | 7 | 9 | 8 | 11 | 11 | 20 | 28 | 19 | 28 | 21 | 18 | 30 | 19 | 12 | 14 | 28 | 17 | 20 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | : | NA | 71 | 69 | 68 | 74 | NA | NA | NA | 47 | 59 | 49 | 53 | 55 | 53 | 56 | | |
| North Carolina | : | NA | NA | 71 | 64 | 68 | 71 | 58 | 70 | 67 | 70 | 63 | 63 | 58 | 56 | 76 | 73 | 66 | 64 | 53 | 65 | 58 | 56 | 58 | 58 | 72 | 64 | 66 | 60 | |
| Tennessee | : | NA | NA | 46 | 42 | 45 | 48 | 52 | 49 | 54 | 60 | 58 | 53 | 71 | 67 | 84 | 68 | 74 | 70 | 63 | 67 | 64 | 66 | 48 | 49 | 57 | 52 | 51 | 55 | |
| Alabama | : | NA | 97 | 93 | 85 | 87 | 69 | 65 | 77 | 74 | 65 | 68 | 67 | NA | NA | NA | NA | NA |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Georgia | : | NA | 92 | 89 | 86 | 72 | 80 | 55 | 79 | 63 | 63 | 81 | 75 | 79 | 73 | 70 | | |
| South Carolina | : | NA | NA | 74 | 67 | 80 | 81 | 84 | 80 | 85 | 82 | 80 | 78 | 75 | 79 | NA | 88 | 81 | 86 | 59 | 71 | 74 | NA | NA | NA | NA | NA | NA | NA | |
| Arkansas | : | 15 | 22 | 24 | 24 | 26 | 28 | 36 | 36 | 39 | 29 | 32 | 30 | 33 | 39 | 37 | 37 | 33 | 35 | 22 | 27 | 28 | 24 | 18 | 23 | 24 | 29 | 28 | 31 | |
| Louisiana | : | NA | NA | NA | 22 | 21 | 23 | 24 | 27 | 28 | 28 | 21 | 23 | 21 | 26 | 34 | 33 | 37 | 49 | 32 | 28 | 32 | 33 | 23 | 17 | 30 | 38 | 31 | 8 | |
| Mississippi | : | 4 | 6 | 18 | 24 | 28 | 26 | 25 | 30 | 34 | 91 | 35 | 30 | 42 | 41 | 43 | 42 | 36 | 42 | 35 | 29 | 41 | 33 | 24 | 24 | 23 | 34 | 25 | 21 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : | 13 | 18 | 27 | 28 | 29 | 27 | 29 | 28 | 31 | 33 | 30 | 28 | 31 | 35 | 37 | 40 | 37 | 36 | 30 | 33 | 34 | 32 | 33 | 30 | 32 | 34 | 31 | 28 | |

NA = Not available.

Appendix table 16--Percentage of soybean acreage receiving nitrogen fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | 2 | 11 | 10 | 10 | 19 | 18 | 17 | 8 | 13 | 23 | 18 | 11 | 7 | 6 | 12 | 13 | 7 | 10 | 10 | 19 | 20 | 12 | 10 | 9 | 16 | 16 | 12 | 12 | |
| Illinois | 5 | 6 | 10 | 9 | 8 | 6 | 9 | 12 | 11 | 16 | 12 | 9 | 12 | 16 | 10 | 11 | 8 | 9 | 5 | 13 | 9 | 8 | 9 | 9 | 10 | 16 | 13 | | |
| Indiana | 23 | 33 | 36 | 46 | 43 | 40 | 52 | 46 | 42 | 54 | 49 | 46 | 48 | 46 | 41 | 51 | 39 | 40 | 25 | 31 | 35 | 23 | 16 | 30 | 31 | 20 | 22 | 19 | |
| Iowa | 3 | 8 | 15 | 11 | 17 | 6 | 8 | 7 | 9 | 10 | 7 | 8 | 7 | 11 | 10 | 7 | 6 | 5 | 5 | 8 | 14 | 9 | 6 | 10 | 9 | 9 | 10 | 9 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 6 | 9 | 17 | 20 | 17 | 15 | 15 | 14 | 23 | 19 | 12 | 8 | 9 | 8 | 23 | 14 | 17 | 11 | 15 | 11 | 7 | 0 | 8 | 12 | 12 | 11 | 8 | 16 | |
| Ohio | 18 | 19 | 27 | 37 | 28 | 38 | 42 | 37 | 47 | 42 | 47 | 42 | 36 | 41 | 33 | 46 | 38 | 28 | 24 | 23 | 22 | 35 | 23 | 21 | 20 | 21 | 20 | 21 | |
| Kansas | 12 | 4 | 6 | 21 | 16 | 16 | 19 | 9 | 14 | 19 | 12 | 6 | 8 | 21 | 12 | 16 | 20 | NA | |
| Nebraska | 6 | 5 | 35 | 22 | 22 | 15 | 18 | 9 | 16 | 23 | 7 | 9 | 7 | 11 | 11 | 14 | 20 | 17 | 21 | 18 | 17 | 28 | 15 | 12 | 14 | 24 | 15 | 19 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | NA | 64 | 54 | 57 | 60 | NA | NA | NA | NA | 25 | 42 | 28 | 34 | 35 | 36 | 36 |
| North Carolina | NA | NA | 58 | 50 | 59 | 57 | 49 | 62 | 65 | 62 | 57 | 57 | 49 | 49 | 63 | 61 | 60 | 60 | 44 | 57 | 46 | 46 | 46 | 48 | 54 | 54 | 50 | 47 | |
| Tennessee | NA | NA | 32 | 35 | 42 | 34 | 38 | 35 | 42 | 45 | 38 | 32 | 47 | 48 | 56 | 44 | 51 | 43 | 33 | 38 | 40 | 33 | 22 | 20 | 30 | 22 | 35 | 27 | |
| Alabama | NA | 71 | 77 | 66 | 68 | 57 | 49 | 51 | 34 | 34 | 44 | 44 | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Georgia | NA | 76 | 74 | 71 | 58 | 69 | 46 | 59 | 51 | 54 | 58 | 51 | 49 | 67 | 58 | 55 |
| South Carolina | NA | NA | 52 | 44 | 62 | 66 | 65 | 61 | 65 | 63 | 60 | 53 | 52 | 61 | NA | 45 | 43 | 44 | 40 | 32 | 41 | NA | |
| Arkansas | 2 | 3 | 5 | 8 | 12 | 15 | 14 | 6 | 14 | 14 | 20 | 10 | 13 | 18 | 16 | 16 | 11 | 13 | 12 | 13 | 14 | 6 | 7 | 8 | 10 | 11 | 13 | 11 | |
| Louisiana | NA | NA | NA | 20 | 16 | 14 | 12 | 14 | 14 | 19 | 17 | 9 | 14 | 12 | 19 | 19 | 7 | 12 | 9 | 11 | 8 | 7 | 3 | 7 | 9 | 8 | 15 | 3 | |
| Mississippi | 2 | 1 | 8 | 16 | 14 | 14 | 13 | 17 | 15 | 12 | 17 | 11 | 26 | 17 | 21 | 14 | 13 | 15 | 13 | 12 | 17 | 5 | 8 | 10 | 9 | 10 | 13 | 10 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 7 | 11 | 18 | 21 | 21 | 19 | 21 | 19 | 22 | 24 | 22 | 18 | 20 | 24 | 25 | 26 | 23 | 21 | 17 | 20 | 20 | 17 | 18 | 15 | 16 | 17 | 17 | 16 | |

NA = Not available.

Appendix table 17--Nitrogen used on soybeans, rate per fertilized acre receiving nitrogen, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Minnesota | 15 | 8 | 9 | 6 | 10 | 8 | 17 | 10 | 20 | 12 | 15 | 42 | 21 | 10 | 16 | 16 | 13 | 30 | 13 | 16 | 18 | 26 | 13 | 17 | 21 | 16 | 16 | 39 | |
| Illinois | 8 | 8 | 18 | 17 | 14 | 9 | 25 | 30 | 12 | 19 | 11 | 11 | 11 | 12 | 16 | 14 | 15 | 20 | 18 | 20 | 17 | 31 | 16 | 14 | 39 | 20 | 17 | 25 | 21 |
| Indiana | 6 | 8 | 9 | 7 | 11 | 9 | 8 | 11 | 11 | 9 | 10 | 9 | 10 | 11 | 11 | 11 | 11 | 12 | 11 | 9 | 10 | 14 | 11 | 14 | 18 | 12 | 16 | 15 | |
| Iowa | 4 | 17 | 6 | 12 | 10 | 8 | 11 | 10 | 11 | 10 | 9 | 9 | 12 | 14 | 11 | 11 | 18 | 20 | 32 | 14 | 23 | 10 | 14 | 13 | 24 | 16 | 34 | 45 | |
| Missouri | 7 | 14 | 8 | 16 | 11 | 12 | 10 | 14 | 17 | 10 | 17 | 26 | 12 | 13 | 17 | 19 | 22 | 14 | 21 | 23 | 22 | 12 | 14 | 31 | 24 | 25 | 21 | 19 | |
| Ohio | 11 | 10 | 7 | 9 | 10 | 10 | 11 | 12 | 12 | 12 | 13 | 11 | 11 | 12 | 15 | 12 | 12 | 14 | 10 | 10 | 14 | 13 | 14 | 13 | 17 | 14 | 11 | 17 | |
| Kansas | 9 | 5 | 19 | 22 | 11 | 21 | 18 | 23 | 44 | 21 | 55 | 43 | 32 | 30 | 26 | 15 | 10 | NA | |
| Nebraska | 2 | 9 | 21 | 9 | 32 | 27 | 32 | 11 | 14 | 19 | 27 | 22 | 23 | 25 | 23 | 21 | 30 | 19 | 23 | 21 | 13 | 18 | 14 | 15 | 32 | 16 | 32 | 15 | |
| Kentucky | NA | |
| North Carolina | NA | NA | 13 | 12 | 13 | 15 | 13 | 15 | 13 | 14 | 17 | 12 | 12 | 14 | 18 | 17 | 15 | 18 | 16 | 20 | 16 | 16 | 13 | 23 | 14 | 24 | 16 | 18 | |
| Tennessee | NA | NA | 14 | 16 | 14 | 13 | 13 | 14 | 15 | 24 | 15 | 17 | 19 | 18 | 17 | 14 | 16 | 14 | 14 | 20 | 16 | 19 | 18 | 20 | 34 | 21 | 30 | 25 | |
| Alabama | NA | |
| Georgia | NA | |
| South Carolina | NA | NA | 15 | 16 | 17 | 17 | 17 | 13 | 18 | 15 | 21 | 14 | 17 | 15 | NA | 19 | 13 | 18 | 20 | 11 | 13 | NA | |
| Arkansas | 40 | 19 | 28 | 24 | 11 | 13 | 15 | 12 | 14 | 11 | 16 | 18 | 19 | 28 | 16 | 17 | 16 | 17 | 17 | 15 | 21 | 24 | 14 | 18 | 28 | 16 | 38 | 22 | |
| Louisiana | NA | NA | NA | 14 | 10 | 12 | 13 | 17 | 15 | 20 | 19 | 14 | 14 | 12 | 15 | 16 | 19 | 26 | 17 | 13 | 13 | 21 | 17 | 15 | 18 | 24 | 23 | 33 | |
| Mississippi | 44 | 10 | 24 | 17 | 2 | 19 | 17 | 17 | 27 | 19 | 23 | 17 | 17 | 22 | 17 | 17 | 13 | 24 | 15 | 12 | 16 | 16 | 10 | 37 | 16 | 43 | 29 | | |
| Average | 14 | 10 | 12 | 13 | 15 | 12 | 14 | 15 | 14 | 14 | 15 | 15 | 14 | 16 | 17 | 16 | 17 | 18 | 17 | 18 | 17 | 15 | 15 | 20 | 22 | 18 | 24 | 25 | |

NA = Not available.

Appendix table 18--Percentage of soybean acreage receiving phosphate fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | 4 | 13 | 12 | 14 | 25 | 20 | 22 | 10 | 11 | 25 | 21 | 10 | 10 | 9 | 14 | 21 | 11 | 11 | 11 | 21 | 24 | 14 | 9 | 11 | 20 | 17 | 12 | 10 | |
| Illinois | 6 | 10 | 17 | 13 | 10 | 11 | 12 | 17 | 18 | 27 | 15 | 15 | 23 | 23 | 18 | 20 | 19 | 17 | 14 | 23 | 17 | 17 | 17 | 20 | 25 | 23 | 27 | 22 | |
| Indiana | 37 | 41 | 48 | 55 | 51 | 52 | 57 | 50 | 47 | 62 | 54 | 51 | 54 | 54 | 56 | 61 | 49 | 47 | 34 | 38 | 48 | 38 | 31 | 41 | 41 | 31 | 33 | 28 | |
| Iowa | 6 | 9 | 18 | 15 | 22 | 12 | 13 | 11 | 13 | 16 | 11 | 11 | 9 | 15 | 13 | 12 | 8 | 9 | 8 | 12 | 16 | 12 | 8 | 15 | 10 | 16 | 11 | 9 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 6 | 11 | 18 | 20 | 17 | 16 | 16 | 17 | 27 | 23 | 13 | 11 | 9 | 15 | 28 | 25 | 26 | 19 | 23 | 16 | 10 | 21 | 19 | 20 | 21 | 20 | 14 | 19 | |
| Ohio | 23 | 26 | 33 | 42 | 33 | 46 | 45 | 42 | 53 | 48 | 53 | 46 | 49 | 52 | 38 | 56 | 48 | 39 | 35 | 34 | 39 | 48 | 41 | 40 | 35 | 37 | 29 | 34 | |
| Kansas | 8 | 4 | 6 | 21 | 13 | 14 | 18 | 4 | 11 | 19 | 10 | 2 | 10 | 17 | 10 | 20 | 20 | NA | | |
| Nebraska | 12 | 10 | 30 | 25 | 16 | 13 | 20 | 9 | 22 | 19 | 6 | 7 | 7 | 11 | 9 | 17 | 20 | 15 | 23 | 19 | 15 | 25 | 18 | 10 | 11 | 28 | 12 | 17 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | NA | 71 | 67 | 68 | 74 | NA | NA | NA | 46 | 59 | 46 | 50 | 54 | 49 | 53 | |
| North Carolina | NA | NA | 69 | 63 | 65 | 70 | 56 | 70 | 67 | 67 | 60 | 62 | 58 | 55 | 73 | 72 | 66 | 60 | 50 | 63 | 54 | 55 | 52 | 51 | 63 | 55 | 61 | 51 | |
| Tennessee | NA | NA | 46 | 42 | 45 | 48 | 51 | 49 | 54 | 59 | 58 | 52 | 67 | 62 | 84 | 66 | 73 | 66 | 63 | 65 | 61 | 59 | 47 | 43 | 52 | 45 | 50 | 51 | |
| Alabama | NA | 95 | 92 | 81 | 86 | 66 | 60 | 77 | 74 | 65 | 68 | 66 | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Georgia | NA | 92 | 87 | 86 | 72 | 75 | 55 | 76 | 63 | 61 | 77 | 72 | 76 | 77 | 72 | 62 |
| South Carolina | NA | NA | 72 | 66 | 79 | 81 | 84 | 80 | 84 | 82 | 78 | 77 | 74 | 78 | NA | 85 | 78 | 84 | 54 | 65 | 66 | NA | |
| Arkansas | 14 | 19 | 23 | 23 | 26 | 28 | 35 | 33 | 35 | 27 | 31 | 26 | 29 | 35 | 35 | 35 | 31 | 32 | 21 | 26 | 26 | 21 | 15 | 22 | 21 | 27 | 24 | 26 | |
| Louisiana | NA | NA | NA | 22 | 21 | 23 | 24 | 27 | 28 | 28 | 20 | 23 | 21 | 26 | 34 | 33 | 37 | 49 | 32 | 28 | 32 | 32 | 23 | 17 | 30 | 36 | 30 | 8 | |
| Mississippi | 3 | 6 | 17 | 24 | 28 | 26 | 25 | 30 | 33 | 19 | 34 | 29 | 40 | 39 | 41 | 38 | 34 | 42 | 35 | 29 | 40 | 32 | 19 | 23 | 18 | 34 | 19 | 18 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 12 | 16 | 26 | 27 | 27 | 26 | 27 | 27 | 29 | 32 | 28 | 25 | 28 | 33 | 35 | 38 | 35 | 33 | 27 | 30 | 30 | 28 | 29 | 25 | 26 | 28 | 24 | 22 | |

NA = Not available.

Appendix table 19--Phosphate used on soybeans, rate per fertilized acre receiving phosphate, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | | |
| Minnesota | 37 | 21 | 20 | 24 | 30 | 27 | 35 | 25 | 44 | 31 | 26 | 44 | 31 | 34 | 27 | 36 | 29 | 31 | 30 | 38 | 38 | 34 | 20 | 26 | 57 | 34 | 34 | 41 | |
| Illinois | 24 | 32 | 56 | 51 | 57 | 54 | 36 | 41 | 48 | 55 | 44 | 43 | 49 | 47 | 50 | 57 | 73 | 63 | 66 | 63 | 62 | 61 | 45 | 57 | 67 | 54 | 58 | 60 | |
| Indiana | 22 | 28 | 25 | 25 | 28 | 42 | 31 | 29 | 41 | 37 | 38 | 32 | 34 | 37 | 39 | 38 | 44 | 36 | 39 | 35 | 41 | 40 | 49 | 46 | 40 | 48 | 41 | 41 | |
| Iowa | 37 | 30 | 21 | 30 | 39 | 53 | 44 | 34 | 36 | 42 | 33 | 27 | 33 | 39 | 33 | 36 | 42 | 54 | 54 | 46 | 52 | 34 | 51 | 45 | 33 | 50 | 40 | 51 | |
| Missouri | 22 | 39 | 30 | 31 | 34 | 43 | 29 | 30 | 37 | 34 | 43 | 38 | 43 | 41 | 43 | 49 | 47 | 57 | 45 | 49 | 58 | 44 | 46 | 43 | 49 | 41 | 41 | 43 | |
| Ohio | 28 | 36 | 33 | 33 | 36 | 37 | 36 | 38 | 38 | 44 | 42 | 37 | 39 | 42 | 42 | 46 | 38 | 54 | 43 | 37 | 53 | 37 | 42 | 52 | 46 | 55 | 48 | 49 | |
| Kansas | 16 | 20 | 58 | 29 | 29 | 33 | 36 | 42 | 46 | 32 | 29 | 46 | 43 | 39 | 30 | 30 | 22 | NA | |
| Nebraska | 29 | 23 | 36 | 27 | 24 | 44 | 43 | 33 | 34 | 29 | 29 | 15 | 37 | 44 | 50 | 36 | 47 | 32 | 29 | 33 | 27 | 27 | 27 | 24 | 36 | 40 | 32 | | |
| Kentucky | NA | |
| North Carolina | NA | NA | 35 | 35 | 36 | 36 | 35 | 39 | 34 | 37 | 38 | 34 | 38 | 36 | 41 | 45 | 37 | 42 | 39 | 35 | 42 | 40 | 36 | 45 | 34 | 40 | 40 | 34 | |
| Tennessee | NA | NA | 32 | 36 | 38 | 34 | 36 | 42 | 44 | 44 | 42 | 41 | 43 | 50 | 48 | 46 | 45 | 42 | 43 | 48 | 43 | 45 | 44 | 53 | 44 | 43 | 42 | 44 | |
| Alabama | NA | |
| Georgia | NA | |
| South Carolina | NA | NA | 44 | 46 | 42 | 42 | 42 | 46 | 42 | 40 | 40 | 45 | 43 | NA | 41 | 39 | 43 | 37 | 37 | 36 | NA | NA |
| Arkansas | 32 | 35 | 35 | 41 | 39 | 38 | 39 | 39 | 42 | 37 | 44 | 46 | 36 | 40 | 41 | 38 | 43 | 38 | 38 | 38 | 40 | 36 | 39 | 44 | 45 | 37 | 53 | 40 | |
| Louisiana | NA | NA | NA | 51 | 41 | 48 | 56 | 63 | 54 | 58 | 54 | 60 | 52 | 57 | 51 | 52 | 53 | 55 | 47 | 47 | 50 | 54 | 45 | 51 | 41 | 45 | 39 | | |
| Mississippi | 37 | 44 | 57 | 53 | 14 | 44 | 46 | 57 | 54 | 53 | 56 | 52 | 57 | 55 | 51 | 50 | 47 | 50 | 41 | 42 | 49 | 44 | 40 | 41 | 42 | 39 | 50 | | |
| Average | 30 | 32 | 34 | 37 | 37 | 41 | 37 | 39 | 42 | 42 | 41 | 40 | 42 | 45 | 45 | 46 | 46 | 46 | 43 | 45 | 46 | 43 | 43 | 47 | 48 | 46 | 47 | 48 | |

NA = Not available.

Appendix table 20--Percentage of soybean acreage receiving potash fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|----|
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | 4 | 12 | 11 | 14 | 23 | 21 | 22 | 10 | 12 | 24 | 21 | 10 | 12 | 11 | 14 | 21 | 15 | 14 | 11 | 20 | 25 | 19 | 10 | 12 | 20 | 16 | 13 | 10 | |
| Illinois | 7 | 14 | 17 | 17 | 15 | 11 | 16 | 20 | 22 | 28 | 17 | 18 | 28 | 26 | 19 | 23 | 21 | 21 | 17 | 32 | 22 | 21 | 22 | 26 | 34 | 33 | 34 | 27 | |
| Indiana | 36 | 41 | 47 | 56 | 51 | 52 | 57 | 52 | 48 | 63 | 58 | 55 | 55 | 55 | 54 | 64 | 51 | 51 | 44 | 42 | 49 | 50 | 37 | 45 | 49 | 41 | 44 | 35 | |
| Iowa | 5 | 8 | 16 | 14 | 21 | 12 | 13 | 11 | 14 | 16 | 11 | 11 | 9 | 15 | 13 | 12 | 8 | 9 | 9 | 11 | 18 | 11 | 10 | 17 | 12 | 18 | 14 | 10 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 7 | 11 | 19 | 20 | 18 | 18 | 17 | 17 | 27 | 25 | 14 | 13 | 12 | 16 | 29 | 30 | 29 | 21 | 24 | 18 | 14 | 23 | 23 | 26 | 27 | 23 | 15 | 21 | |
| Ohio | 20 | 26 | 32 | 41 | 34 | 46 | 46 | 42 | 54 | 48 | 54 | 47 | 50 | 52 | 40 | 57 | 51 | 47 | 38 | 40 | 45 | 58 | 55 | 48 | 46 | 50 | 47 | 48 | |
| Kansas | 8 | 4 | 3 | 17 | 10 | 14 | 11 | 2 | 9 | 19 | 4 | NA | 8 | 11 | 8 | 7 | 4 | NA | NA | |
| Nebraska | 6 | NA | 13 | 19 | 6 | 6 | 13 | 7 | 16 | 15 | 6 | 6 | 7 | 8 | 8 | 11 | 13 | 5 | 15 | 13 | 9 | 10 | 7 | 6 | 8 | 13 | 5 | 8 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | NA | 71 | 67 | 66 | 74 | NA | NA | NA | NA | 46 | 56 | 45 | 47 | 55 | 46 | 49 |
| North Carolina | NA | NA | 71 | 63 | 67 | 71 | 58 | 70 | 67 | 69 | 62 | 63 | 56 | 56 | 76 | 73 | 66 | 61 | 53 | 65 | 56 | 56 | 57 | 57 | 72 | 63 | 66 | 59 | |
| Tennessee | NA | NA | 46 | 42 | 45 | 48 | 51 | 49 | 54 | 59 | 57 | 53 | 70 | 66 | 84 | 67 | 73 | 70 | 63 | 67 | 63 | 66 | 48 | 48 | 55 | 51 | 51 | 53 | |
| Alabama | NA | 96 | 93 | 84 | 83 | 69 | 65 | 77 | 73 | 64 | 59 | 66 | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Georgia | NA | 92 | 89 | 86 | 72 | 80 | 55 | 78 | 63 | 62 | 77 | 75 | 79 | 78 | 73 | 67 |
| South Carolina | NA | NA | 72 | 66 | 79 | 81 | 84 | 80 | 85 | 82 | 80 | 78 | 73 | 79 | NA | 86 | 81 | 84 | 59 | 71 | 74 | NA | NA | NA | NA | NA | NA | NA | |
| Arkansas | 12 | 21 | 21 | 22 | 24 | 28 | 36 | 35 | 38 | 29 | 32 | 28 | 32 | 36 | 37 | 36 | 33 | 34 | 21 | 26 | 21 | 24 | 17 | 23 | 22 | 29 | 26 | 29 | |
| Louisiana | NA | NA | NA | 22 | 20 | 23 | 24 | 27 | 28 | 27 | 20 | 23 | 21 | 25 | 34 | 33 | 37 | 49 | 32 | 28 | 30 | 31 | 22 | 15 | 30 | 37 | 27 | 8 | |
| Mississippi | 3 | 5 | 13 | 24 | 28 | 26 | 25 | 30 | 31 | 19 | 32 | 29 | 41 | 40 | 43 | 42 | 35 | 42 | 34 | 28 | 41 | 32 | 23 | 24 | 21 | 34 | 23 | 18 | |
| Average | 12 | 17 | 24 | 27 | 27 | 28 | 27 | 31 | 32 | 28 | 26 | 30 | 34 | 36 | 39 | 36 | 35 | 29 | 32 | 32 | 30 | 31 | 28 | 31 | 32 | 29 | 25 | | |

NA = Not available.

Appendix table 21--Potash used on soybeans, rate per fertilized acre receiving potash, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | 73 | 26 | 23 | 27 | 40 | 35 | 82 | 38 | 62 | 39 | 39 | 53 | 64 | 56 | 36 | 56 | 48 | 72 | 52 | 56 | 63 | 62 | 42 | 51 | 51 | 51 | 62 | 53 | |
| Illinois | 42 | 58 | 72 | 66 | 73 | 71 | 74 | 48 | 63 | 69 | 73 | 56 | 79 | 67 | 85 | 92 | 97 | 113 | 96 | 96 | 99 | 93 | 88 | 105 | 101 | 85 | 96 | 91 | |
| Indiana | 29 | 30 | 33 | 34 | 31 | 48 | 43 | 42 | 51 | 60 | 60 | 55 | 52 | 52 | 59 | 69 | 75 | 76 | 87 | 67 | 67 | 99 | 84 | 66 | 78 | 81 | 90 | 79 | |
| Iowa | 28 | 29 | 19 | 24 | 34 | 53 | 49 | 45 | 35 | 48 | 44 | 34 | 59 | 49 | 39 | 52 | 61 | 65 | 64 | 49 | 69 | 59 | 62 | 55 | 65 | 68 | 56 | 73 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 29 | 40 | 35 | 33 | 39 | 45 | 37 | 39 | 43 | 46 | 55 | 61 | 59 | 60 | 65 | 72 | 82 | 77 | 66 | 68 | 76 | 60 | 69 | 67 | 74 | 69 | 63 | 68 | |
| Ohio | 27 | 40 | 31 | 31 | 39 | 33 | 37 | 39 | 47 | 51 | 50 | 38 | 47 | 47 | 52 | 53 | 64 | 89 | 71 | 73 | 102 | 74 | 81 | 96 | 102 | 93 | 105 | 91 | |
| Kansas | 5 | 20 | 20 | 17 | 24 | 32 | 54 | 26 | 31 | 21 | 16 | NA | 26 | 46 | 28 | 26 | 28 | NA | |
| Nebraska | 4 | 3 | 24 | 7 | 18 | 23 | 11 | 12 | 22 | 16 | 14 | 16 | 24 | 20 | 18 | 18 | 32 | 20 | 14 | 22 | 12 | 13 | 10 | 15 | 16 | 23 | 32 | 20 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kentucky | NA | 75 | 70 | 71 | 80 | 76 | 84 | 76 |
| North Carolina | NA | NA | 50 | 53 | 54 | 51 | 55 | 59 | 55 | 65 | 60 | 65 | 66 | 58 | 71 | 76 | 75 | 83 | 71 | 70 | 68 | 70 | 70 | 80 | 72 | 80 | 85 | 87 | |
| Tennessee | NA | NA | 34 | 37 | 42 | 35 | 41 | 41 | 46 | 45 | 44 | 45 | 46 | 55 | 60 | 63 | 58 | 60 | 55 | 60 | 60 | 63 | 57 | 66 | 61 | 56 | 58 | | |
| Alabama | NA | 63 | 72 | 61 | 67 | 66 | 60 | 61 | 56 | 57 | 57 | 54 | NA | NA | NA | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Georgia | NA | 78 | 69 | 77 | 76 | 78 | 67 | 79 | 68 | 63 | 64 | 68 | 76 | 76 | 69 | 90 | |
| South Carolina | NA | NA | 68 | 70 | 69 | 66 | 70 | 71 | 77 | 75 | 68 | 71 | 80 | 84 | NA | 89 | 84 | 82 | 79 | 81 | 76 | NA | |
| Arkansas | 39 | 42 | 38 | 42 | 42 | 42 | 49 | 47 | 48 | 50 | 52 | 50 | 56 | 54 | 57 | 52 | 56 | 51 | 49 | 52 | 48 | 55 | 58 | 62 | 62 | 57 | 67 | 56 | |
| Louisiana | NA | NA | NA | 51 | 40 | 48 | 53 | 61 | 53 | 58 | 53 | 57 | 53 | 60 | 54 | 58 | 66 | 68 | 60 | 68 | 67 | 73 | 62 | 78 | 62 | 60 | 55 | 57 | |
| Mississippi | 37 | 45 | 43 | 52 | 15 | 44 | 44 | 57 | 53 | 54 | 55 | 53 | 59 | 68 | 61 | 69 | 65 | 69 | 60 | 61 | 71 | 69 | 65 | 60 | 68 | 63 | 67 | 59 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 37 | 39 | 41 | 42 | 45 | 48 | 51 | 48 | 51 | 55 | 55 | 53 | 60 | 60 | 62 | 67 | 70 | 76 | 68 | 70 | 72 | 72 | 71 | 75 | 79 | 76 | 81 | 77 | |

NA = Not available.

Appendix table 22--Percentage of wheat acreage receiving any fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Michigan | : 96 | 100 | 100 | 100 | 97 | 98 | 99 | 96 | 92 | 100 | 97 | 98 | 98 | 98 | 96 | 94 | 100 | 100 | 100 | NA | |
| Minnesota | : 76 | 80 | 67 | 86 | 88 | 90 | 86 | 87 | 96 | 91 | 92 | 90 | 95 | 91 | 98 | 96 | 95 | 96 | NA | 95 | 95 | 94 | 99 | 88 | 100 | 99 | 97 | 96 | |
| Illinois | : 94 | 89 | 86 | 91 | 96 | 90 | 92 | 99 | 95 | 90 | 96 | 91 | 90 | 95 | 93 | 97 | 98 | 96 | 88 | 85 | 92 | 92 | 87 | 99 | 99 | 98 | 100 | 96 | |
| Indiana | : 98 | 99 | 99 | 95 | 97 | 83 | 95 | 99 | 97 | 100 | 100 | 100 | 100 | 96 | 86 | 97 | 99 | 100 | 94 | 97 | 85 | 92 | 92 | 100 | 96 | 95 | NA | 99 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : 95 | 95 | 92 | 93 | 92 | 93 | 92 | 94 | 91 | 86 | 99 | 95 | 96 | 93 | 96 | 89 | 95 | 95 | 94 | 94 | 87 | 92 | 80 | 98 | 99 | 96 | 96 | 99 | |
| Ohio | : 97 | 100 | 99 | 99 | 98 | 98 | 99 | 100 | 98 | 99 | 97 | 100 | 97 | 99 | 96 | 97 | 99 | 100 | 84 | 99 | 95 | 92 | 90 | 95 | 100 | 95 | 99 | 99 | |
| Arkansas | : NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Kansas | : 40 | 40 | 50 | 51 | 59 | 51 | 51 | 49 | 60 | 67 | 69 | 69 | 73 | 72 | 64 | 70 | 76 | 76 | 75 | 82 | 84 | 81 | 79 | 87 | 89 | 87 | 89 | 89 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | : 25 | 25 | 26 | 42 | 43 | 49 | 43 | 45 | 46 | 53 | 73 | 55 | 58 | 58 | 46 | 57 | 57 | 64 | 56 | 59 | 58 | 81 | 71 | 70 | 73 | 76 | 79 | 80 | |
| North Dakota | : 51 | 56 | 60 | 67 | 68 | 72 | 73 | 66 | 72 | 74 | 65 | 57 | 65 | 51 | 60 | 68 | 49 | 57 | NA | 71 | 72 | 81 | 80 | 75 | 73 | 67 | 74 | | |
| South Dakota | : 6 | 8 | 16 | 25 | 28 | 33 | 34 | 43 | 31 | 39 | 42 | 29 | 53 | 24 | 21 | 19 | 25 | 44 | NA | 44 | 47 | 62 | 68 | 63 | 73 | 44 | 51 | 54 | |
| Oklahoma | : 58 | 61 | 61 | 53 | 60 | 57 | 70 | 70 | 63 | 65 | 65 | 66 | 82 | 73 | 62 | 80 | 89 | 85 | 81 | 70 | 81 | 83 | 81 | 89 | 86 | 95 | 91 | 92 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | : 39 | 45 | 46 | 50 | 42 | 34 | 52 | 48 | 46 | 42 | 65 | 37 | 59 | 44 | 50 | 32 | 48 | 58 | 55 | 54 | 71 | 62 | 44 | 69 | 70 | 72 | 66 | 72 | |
| Colorado | : 9 | 7 | 1 | 8 | 13 | 13 | 6 | 6 | 10 | 9 | 8 | 16 | 18 | 9 | 11 | 10 | 14 | 25 | 35 | 23 | 39 | 56 | 64 | 66 | 63 | 64 | 65 | 54 | |
| Idaho | : 46 | 43 | 40 | 48 | 42 | 52 | 57 | 59 | 72 | 71 | 72 | 66 | 79 | 77 | 82 | 85 | 80 | 87 | 85 | 94 | 88 | 89 | 88 | 92 | 90 | 90 | NA | 78 | |
| Montana | : 19 | 30 | 29 | 41 | 40 | 39 | 39 | 41 | 47 | 40 | 37 | 43 | 48 | 48 | 45 | 59 | 45 | 47 | 63 | 59 | 64 | 67 | 59 | 58 | 70 | 59 | 63 | 60 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| California | : NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| Oregon | : 94 | 86 | 92 | 59 | 78 | 54 | 81 | 83 | 89 | 82 | 87 | 81 | 85 | 72 | 88 | 90 | 90 | 95 | 95 | 96 | 95 | 96 | 96 | 99 | 97 | NA | NA | 98 | |
| Washington | : 81 | 70 | 78 | 88 | 94 | 82 | 92 | 90 | 92 | 98 | 87 | 97 | 93 | 99 | 96 | 96 | 99 | 99 | 97 | 100 | 98 | 96 | 96 | 98 | 100 | 98 | 98 | 99 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : 50 | 52 | 54 | 58 | 60 | 59 | 63 | 58 | 63 | 64 | 66 | 63 | 71 | 65 | 61 | 66 | 67 | 70 | 70 | 73 | 76 | 77 | 79 | 80 | 83 | 81 | 79 | 80 | |

NA = Not available.

Appendix table 23--Percentage of wheat acreage receiving nitrogen fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
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| Michigan | 95 | 99 | 99 | 100 | 97 | 98 | 99 | 96 | 91 | 100 | 97 | 98 | 98 | 98 | 96 | 94 | 98 | 100 | 98 | 100 | NA |
| Minnesota | 76 | 78 | 64 | 86 | 88 | 90 | 86 | 87 | 96 | 91 | 92 | 90 | 95 | 91 | 98 | 96 | 93 | 96 | NA | 95 | 95 | 94 | 99 | 88 | 100 | 99 | 97 | 96 |
| Illinois | 92 | 85 | 85 | 88 | 88 | 85 | 92 | 99 | 93 | 65 | 96 | 87 | 89 | 95 | 92 | 93 | 95 | 94 | 87 | 82 | 89 | 92 | 87 | 97 | 98 | 98 | 100 | 96 |
| Indiana | 96 | 99 | 99 | 95 | 97 | 83 | 91 | 99 | 97 | 99 | 100 | 99 | 96 | 86 | 97 | 99 | 100 | 94 | 95 | 84 | 91 | 77 | 100 | 96 | 95 | NA | 97 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 95 | 95 | 92 | 93 | 92 | 93 | 90 | 94 | 91 | 81 | 99 | 95 | 96 | 93 | 96 | 84 | 95 | 95 | 94 | 93 | 87 | 91 | 80 | 96 | 99 | 96 | 96 | 99 |
| Ohio | 97 | 100 | 99 | 99 | 95 | 98 | 99 | 100 | 98 | 99 | 97 | 100 | 97 | 99 | 94 | 97 | 99 | 100 | 84 | 99 | 94 | 92 | 99 | 93 | 100 | 95 | 97 | 99 |
| Arkansas | NA | 72 | 90 | 93 | 100 | 97 | 100 | 100 | |
| Kansas | 39 | 40 | 50 | 51 | 59 | 50 | 51 | 48 | 60 | 66 | 68 | 68 | 73 | 71 | 63 | 70 | 76 | 76 | 75 | 82 | 84 | 81 | 79 | 86 | 89 | 87 | 88 | 89 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | 25 | 25 | 26 | 39 | 43 | 48 | 43 | 44 | 45 | 51 | 72 | 55 | 58 | 56 | 46 | 57 | 57 | 62 | 56 | 59 | 58 | 81 | 70 | 70 | 73 | 76 | 79 | 80 |
| North Dakota | 42 | 43 | 41 | 48 | 52 | 65 | 69 | 63 | 68 | 73 | 63 | 57 | 65 | 51 | 58 | 65 | 49 | 57 | NA | 71 | 72 | 72 | 81 | 80 | 75 | 73 | 66 | 74 |
| South Dakota | 6 | 7 | 16 | 25 | 23 | 33 | 32 | 41 | 31 | 39 | 42 | 29 | 53 | 24 | 21 | 19 | 25 | 44 | NA | 43 | 47 | 62 | 68 | 61 | 73 | 44 | 51 | 54 |
| Oklahoma | 58 | 60 | 60 | 52 | 58 | 57 | 70 | 70 | 63 | 65 | 65 | 65 | 82 | 73 | 62 | 79 | 89 | 84 | 81 | 70 | 81 | 83 | 81 | 89 | 86 | 95 | 91 | 92 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | 39 | 44 | 46 | 50 | 41 | 34 | 51 | 47 | 46 | 42 | 65 | 37 | 59 | 44 | 49 | 32 | 48 | 57 | 55 | 54 | 71 | 62 | 43 | 69 | 70 | 72 | 66 | 72 |
| Colorado | 9 | 7 | 1 | 8 | 13 | 13 | 6 | 6 | 10 | 9 | 8 | 16 | 18 | 9 | 11 | 10 | 14 | 25 | 35 | 23 | 39 | 56 | 64 | 66 | 62 | 64 | 64 | 54 |
| Idaho | 46 | 41 | 40 | 48 | 42 | 50 | 56 | 59 | 71 | 71 | 72 | 65 | 79 | 77 | 81 | 84 | 80 | 87 | 85 | 93 | 88 | 89 | 88 | 92 | 90 | 90 | NA | 78 |
| Montana | 6 | 17 | 14 | 28 | 32 | 32 | 30 | 37 | 43 | 38 | 37 | 43 | 47 | 47 | 45 | 56 | 45 | 47 | 63 | 59 | 64 | 65 | 59 | 58 | 69 | 59 | 63 | 60 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| California | NA |
| Oregon | 94 | 86 | 92 | 59 | 78 | 54 | 81 | 83 | 89 | 89 | 82 | 87 | 81 | 84 | 72 | 88 | 90 | 90 | 95 | 95 | 96 | 96 | 96 | 99 | 97 | NA | NA | 98 |
| Washington | 81 | 70 | 77 | 88 | 94 | 82 | 92 | 90 | 92 | 98 | 87 | 97 | 93 | 99 | 96 | 96 | 99 | 99 | 97 | 100 | 98 | 96 | 96 | 98 | 100 | 98 | 98 | 98 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 47 | 48 | 49 | 53 | 56 | 56 | 61 | 57 | 62 | 63 | 66 | 63 | 71 | 64 | 61 | 65 | 67 | 70 | 70 | 72 | 76 | 77 | 79 | 80 | 83 | 81 | 79 | 80 |

NA = Not available.

Appendix table 24--Nitrogen used on wheat, rate per fertilized acre receiving nitrogen, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Michigan | 35 | 28 | 33 | 26 | 35 | 31 | 37 | 41 | 36 | 40 | 38 | 37 | 49 | 51 | 52 | 48 | 51 | 64 | 54 | 64 | NA | |
| Minnesota | 16 | 15 | 18 | 24 | 34 | 32 | 36 | 24 | 58 | 54 | 52 | 54 | 62 | 63 | 68 | 73 | 69 | 57 | NA | 72 | 60 | 67 | 76 | 83 | 103 | 72 | 83 | 86 | |
| Illinois | 32 | 32 | 43 | 44 | 41 | 42 | 46 | 59 | 56 | 60 | 57 | 50 | 57 | 54 | 57 | 55 | 69 | 65 | 82 | 76 | 74 | 84 | 72 | 88 | 98 | 90 | 85 | 87 | |
| Indiana | 39 | 40 | 45 | 46 | 50 | 48 | 48 | 52 | 53 | 58 | 53 | 59 | 61 | 63 | 58 | 63 | 64 | 84 | 80 | 68 | 87 | 74 | 77 | 73 | 72 | 76 | NA | 80 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | 36 | 40 | 44 | 51 | 44 | 53 | 61 | 49 | 78 | 79 | 53 | 50 | 63 | 61 | 53 | 58 | 68 | 70 | 69 | 76 | 72 | 72 | 73 | 87 | 90 | 86 | 84 | 89 | |
| Ohio | 26 | 34 | 34 | 42 | 39 | 37 | 37 | 42 | 43 | 41 | 40 | 49 | 56 | 61 | 46 | 56 | 69 | 74 | 65 | 58 | 65 | 77 | 72 | 71 | 70 | 79 | 75 | 77 | |
| Arkansas | NA | 146 | 112 | 103 | 94 | 99 | 100 | 96 | | |
| Kansas | 26 | 27 | 35 | 36 | 42 | 50 | 46 | 47 | 51 | 54 | 49 | 47 | 52 | 49 | 50 | 50 | 56 | 54 | 56 | 52 | 57 | 57 | 59 | 54 | 53 | 53 | 49 | 58 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | 42 | 42 | 34 | 27 | 34 | 36 | 40 | 43 | 40 | 51 | 45 | 43 | 48 | 48 | 43 | 49 | 45 | 50 | 47 | 49 | 49 | 45 | 46 | 43 | 41 | 50 | 42 | | |
| North Dakota | 9 | 9 | 10 | 10 | 11 | 14 | 15 | 18 | 18 | 23 | 21 | 25 | 32 | 33 | 33 | 41 | 43 | 39 | NA | 46 | 43 | 38 | 44 | 51 | 47 | 41 | 42 | 50 | |
| South Dakota | 13 | 22 | 15 | 14 | 19 | 23 | 20 | 19 | 27 | 24 | 23 | 21 | 30 | 28 | 24 | 19 | 27 | 44 | NA | 32 | 21 | 32 | 46 | 39 | 42 | 54 | 39 | 41 | |
| Oklahoma | 29 | 31 | 38 | 33 | 39 | 41 | 47 | 49 | 49 | 61 | 54 | 45 | 54 | 57 | 58 | 60 | 65 | 64 | 63 | 56 | 65 | 67 | 64 | 70 | 75 | 65 | 67 | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | 76 | 56 | 62 | 84 | 69 | 85 | 80 | 101 | 82 | 103 | 82 | 74 | 72 | 77 | 112 | 93 | 74 | 70 | 83 | 91 | 95 | 77 | 68 | 90 | 80 | 89 | 88 | 86 | |
| Colorado | 13 | 48 | 22 | 54 | 31 | 18 | 43 | 32 | 61 | 54 | 35 | 39 | 56 | 58 | 40 | 43 | 52 | 48 | 36 | 44 | 41 | 49 | 42 | 37 | 43 | 45 | 41 | 48 | |
| Idaho | 41 | 56 | 65 | 77 | 67 | 60 | 66 | 76 | 60 | 71 | 69 | 96 | 74 | 84 | 72 | 76 | 81 | 89 | 93 | 89 | 108 | 89 | 89 | 92 | 100 | 95 | NA | 100 | |
| Montana | 5 | 10 | 11 | 6 | 9 | 8 | 10 | 12 | 14 | 14 | 13 | 11 | 17 | 20 | 24 | 28 | 23 | 23 | 36 | 32 | 40 | 28 | 30 | 38 | 38 | 34 | 44 | 33 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| California | NA | 102 | 121 | 106 | 98 | 105 | NA | NA | | |
| Oregon | 41 | 60 | 39 | 52 | 56 | 47 | 41 | 55 | 46 | 47 | 69 | 66 | 78 | 72 | 67 | 74 | 73 | 90 | 65 | 87 | 66 | 66 | 79 | 72 | 73 | 75 | NA | 58 | |
| Washington | 38 | 53 | 56 | 69 | 86 | 79 | 64 | 60 | 63 | 67 | 69 | 70 | 69 | 71 | 76 | 65 | 73 | 67 | 82 | 76 | 83 | 74 | 73 | 69 | 66 | 65 | 72 | | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | 27 | 31 | 32 | 35 | 36 | 38 | 39 | 40 | 46 | 48 | 46 | 46 | 51 | 53 | 52 | 54 | 58 | 58 | 59 | 60 | 62 | 60 | 60 | 62 | 64 | 62 | 59 | 62 | |

NA = Not available.

Appendix table 25--Percentage of wheat acreage receiving phosphate fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Percent | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Michigan | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Minnesota | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Illinois | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Indiana | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ohio | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arkansas | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Kansas | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oklahoma | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Colorado | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Idaho | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Montana | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| California | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Oregon | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Washington | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

NA = Not available.

Appendix table 26--Phosphate used on wheat, rate per fertilized acre receiving phosphate, selected States

| State | : 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|--------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| Michigan | : | 53 | 53 | 53 | 56 | 55 | 58 | 56 | 61 | 60 | 58 | 57 | 52 | 57 | 57 | 53 | 62 | 55 | 58 | 57 | 54 | NA | |
| Minnesota | : | 26 | 31 | 27 | 29 | 35 | 36 | 39 | 31 | 38 | 33 | 39 | 38 | 36 | 36 | 39 | 35 | 32 | 30 | NA | 39 | 33 | 32 | 40 | 33 | 41 | 37 | 42 | 36 |
| Illinois | : | 42 | 41 | 52 | 57 | 56 | 56 | 52 | 64 | 72 | 55 | 66 | 54 | 66 | 65 | 69 | 68 | 81 | 70 | 82 | 76 | 75 | 64 | 80 | 76 | 79 | 72 | 74 | 65 |
| Indiana | : | 49 | 49 | 51 | 53 | 52 | 50 | 56 | 56 | 57 | 63 | 56 | 54 | 57 | 61 | 58 | 62 | 54 | 69 | 60 | 61 | 63 | 64 | 49 | 60 | 58 | 63 | NA | 58 |
| Missouri | : | 27 | 32 | 32 | 38 | 37 | 42 | 41 | 39 | 38 | 50 | 53 | 41 | 39 | 69 | 46 | 47 | 52 | 49 | 45 | 53 | 50 | 43 | 44 | 46 | 52 | 54 | 51 | 51 |
| Ohio | : | 52 | 53 | 57 | 56 | 57 | 55 | 58 | 57 | 59 | 63 | 59 | 54 | 62 | 63 | 56 | 64 | 57 | 62 | 60 | 59 | 62 | 66 | 63 | 71 | 60 | 60 | 66 | 61 |
| Arkansas | : | NA | NA |
| Kansas | : | 30 | 30 | 29 | 37 | 35 | 38 | 36 | 38 | 36 | 41 | 34 | 32 | 35 | 34 | 30 | 35 | 34 | 34 | 35 | 33 | 35 | 33 | 33 | 33 | 34 | 32 | 29 | 33 |
| Nebraska | : | 29 | 33 | 33 | 39 | 31 | 34 | 32 | 33 | 44 | 34 | 34 | 35 | 36 | 36 | 39 | 36 | 40 | 40 | 32 | 34 | 30 | 31 | 33 | 40 | 29 | 30 | 27 | 29 |
| North Dakota | : | 23 | 22 | 23 | 23 | 25 | 25 | 27 | 26 | 26 | 28 | 25 | 24 | 25 | 28 | 26 | 28 | 26 | 25 | NA | 27 | 25 | 29 | 27 | 28 | 29 | 28 | 30 | 28 |
| South Dakota | : | 11 | 23 | 20 | 21 | 21 | 23 | 22 | 21 | 20 | 20 | 22 | 21 | 22 | 21 | 22 | 23 | 22 | 31 | NA | 27 | 23 | 27 | 26 | 29 | 25 | 28 | 27 | 30 |
| Oklahoma | : | 26 | 28 | 30 | 30 | 31 | 32 | 32 | 37 | 36 | 47 | 38 | 31 | 34 | 37 | 30 | 35 | 38 | 40 | 35 | 36 | 35 | 33 | 37 | 35 | 30 | 36 | 34 | 35 |
| Texas | : | 25 | 26 | 52 | 49 | 47 | 54 | 33 | 37 | 52 | 37 | 25 | 35 | 41 | 47 | 39 | 38 | 46 | 39 | 46 | 51 | 46 | 35 | 52 | 39 | 41 | 37 | 39 | |
| Colorado | : | NA | 30 | NA | 17 | 24 | NA | NA | NA | 19 | NA | NA | 35 | NA | NA | 53 | 25 | 23 | 28 | 18 | 20 | 26 | 26 | 25 | 17 | 32 | 22 | 31 | |
| Idaho | : | 17 | 44 | 36 | 35 | 41 | 34 | 35 | 29 | 46 | 34 | 40 | 43 | 55 | 34 | 49 | 44 | 48 | 33 | 33 | 36 | 33 | 39 | 35 | 36 | 41 | NA | 35 | |
| Montana | : | 14 | 18 | 20 | 18 | 18 | 18 | 20 | 23 | 22 | 23 | 25 | 24 | 31 | 27 | 30 | 30 | 28 | 27 | 33 | 31 | 32 | 30 | 28 | 26 | 27 | 26 | 29 | 27 |
| California | : | NA | NA |
| Oregon | : | 38 | 26 | 77 | 32 | 30 | 35 | 24 | 65 | 35 | 25 | 40 | 62 | 47 | 45 | 48 | 45 | 38 | 40 | 33 | 42 | 37 | 40 | 31 | 37 | 34 | 44 | NA | 38 |
| Washington | : | 64 | 30 | 44 | 46 | 41 | 51 | 26 | 30 | 32 | 43 | 59 | 43 | 44 | 38 | 30 | 35 | 31 | 43 | 32 | 30 | 31 | 30 | 24 | 21 | 24 | 30 | 19 | 26 |
| Average | : | 27 | 30 | 32 | 32 | 32 | 34 | 30 | 34 | 37 | 38 | 38 | 35 | 37 | 39 | 35 | 38 | 39 | 39 | 37 | 39 | 37 | 35 | 36 | 35 | 37 | 37 | 36 | 36 |

NA = Not available.

Appendix table 27--Percentage of wheat acreage receiving potash fertilizer, selected States

| State | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | |
|--------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| Michigan | 95 | 100 | 100 | 100 | 97 | 96 | 99 | 84 | 91 | 100 | 95 | 89 | 96 | 96 | 91 | 91 | 98 | 100 | 98 | 100 | NA | | |
| Minnesota | 31 | 34 | 31 | 50 | 56 | 59 | 56 | 65 | 59 | 70 | 69 | 59 | 65 | 71 | 70 | 65 | 63 | 70 | NA | 53 | 72 | 68 | 62 | 64 | 67 | 65 | 70 | 66 | |
| Illinois | 82 | 74 | 74 | 77 | 78 | 77 | 85 | 86 | 77 | 83 | 69 | 79 | 62 | 76 | 51 | 69 | 82 | 70 | 72 | 77 | 78 | 66 | 65 | 76 | 80 | 66 | 79 | 83 | |
| Indiana | 93 | 98 | 94 | 92 | 97 | 79 | 95 | 97 | 97 | 99 | 99 | 99 | 95 | 95 | 84 | 90 | 97 | 96 | 89 | 88 | 85 | 82 | 89 | 82 | 85 | 88 | NA | 86 | |
| Missouri | 76 | 70 | 70 | 64 | 66 | 74 | 67 | 63 | 64 | 55 | 73 | 69 | 85 | 75 | 76 | 78 | 84 | 85 | 82 | 73 | 69 | 78 | 75 | 51 | 83 | 70 | 83 | 83 | |
| Ohio | 96 | 100 | 98 | 99 | 98 | 98 | 99 | 100 | 98 | 97 | 97 | 99 | 95 | 97 | 93 | 93 | 99 | 95 | 82 | 91 | 92 | 80 | 87 | 87 | 96 | 90 | 90 | 93 | |
| Arkansas | NA | 25 | 42 | 30 | 35 | 38 | 31 | 36 | |
| Kansas | 4 | 3 | 4 | 5 | 5 | 5 | 5 | 8 | 6 | 8 | 10 | 11 | 11 | 8 | 6 | 9 | 10 | 12 | 8 | 11 | 9 | 10 | 6 | 2 | 4 | 6 | 9 | 10 | |
| Nebraska | NA | 1 | 2 | 2 | 3 | 3 | 3 | 2 | 1 | 7 | 4 | 8 | 7 | 4 | 2 | 2 | 2 | 4 | 5 | 5 | 5 | 6 | 4 | NA | 2 | NA | NA | 4 | |
| North Dakota | 3 | 4 | 3 | 5 | 4 | 8 | 6 | 5 | 8 | 10 | 11 | 11 | 9 | 7 | 10 | 10 | 5 | 7 | NA | 11 | 5 | 9 | 7 | 11 | 9 | 9 | 16 | 15 | |
| South Dakota | NA | NA | NA | NA | 2 | NA | NA | 4 | 5 | 6 | 7 | 9 | 4 | 1 | 6 | 4 | 3 | 3 | NA | 6 | 4 | 8 | 6 | NA | 3 | 6 | 5 | 6 | |
| Oklahoma | 15 | 10 | 12 | 19 | 13 | 10 | 16 | 10 | 9 | 16 | 15 | 19 | 19 | 18 | 13 | 13 | 14 | 16 | 17 | 12 | 13 | 15 | 9 | 8 | 13 | 12 | 10 | 7 | |
| Texas | 3 | 2 | 1 | 2 | 3 | 2 | 5 | 5 | 4 | 12 | 13 | 9 | 10 | 6 | 2 | 6 | 5 | 7 | 11 | 11 | 5 | 8 | 7 | 59 | 9 | 8 | 5 | 12 | |
| Colorado | NA | 1 | NA | NA | 2 | NA | NA | NA | NA | 1 | NA | 1 | 3 | NA | 1 | NA | 2 | NA | NA | 2 | |
| Idaho | NA | 2 | NA | NA | NA | NA | 2 | NA | 1 | 2 | 1 | 5 | 2 | 2 | 3 | 4 | 1 | 1 | 8 | 7 | 6 | 19 | 8 | 6 | 6 | 7 | NA | 3 | |
| Montana | NA | 1 | NA | NA | 1 | NA | 2 | 2 | 2 | 4 | 2 | 2 | 5 | 3 | 5 | 4 | 5 | 3 | 7 | 6 | 7 | 11 | 5 | 7 | 6 | 10 | 14 | 9 | |
| California | NA | 6 | 1 | NA | 13 | 6 | NA | NA | |
| Oregon | 12 | NA | 4 | 2 | 2 | NA | 1 | 1 | NA | NA | 6 | 7 | 5 | 5 | 3 | 3 | 4 | 10 | 8 | 19 | 6 | 4 | 12 | 9 | 14 | 6 | NA | 6 | |
| Washington | 2 | NA | NA | NA | 2 | 5 | NA | 3 | NA | NA | NA | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 6 | 1 | 5 | 4 | 3 | 6 | 2 | NA | 9 | | |
| Average | 16 | 15 | 15 | 15 | 17 | 17 | 17 | 20 | 14 | 15 | 17 | 20 | 21 | 21 | 19 | 16 | 18 | 18 | 20 | 18 | 20 | 17 | 16 | 19 | 15 | 18 | 18 | 19 | 20 |

NA = Not available.

Appendix table 28--Potash used on wheat, rate per fertilized acre receiving potash, selected States

| State | : 1964 | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|--------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Michigan | : 44 | 49 | 49 | 50 | 52 | 51 | 52 | 52 | 50 | 54 | 49 | 49 | 56 | 55 | 53 | 63 | 60 | 58 | 59 | 53 | NA | |
| Minnesota | : 19 | 18 | 9 | 19 | 19 | 20 | 22 | 17 | 21 | 17 | 28 | 24 | 22 | 23 | 29 | 26 | 21 | 25 | NA | 35 | 28 | 29 | 32 | 27 | 38 | 28 | 34 | 31 |
| Illinois | : 30 | 37 | 40 | 54 | 45 | 51 | 41 | 53 | 56 | 60 | 57 | 52 | 66 | 62 | 69 | 75 | 64 | 76 | 86 | 85 | 86 | 76 | 92 | 94 | 95 | 79 | 91 | 83 |
| Indiana | : 48 | 46 | 50 | 49 | 49 | 47 | 55 | 53 | 52 | 63 | 62 | 63 | 59 | 65 | 53 | 64 | 57 | 84 | 66 | 69 | 73 | 63 | 60 | 75 | 76 | 65 | NA | 69 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Missouri | : 26 | 27 | 32 | 36 | 34 | 41 | 40 | 40 | 41 | 53 | 46 | 44 | 43 | 49 | 54 | 56 | 62 | 57 | 55 | 59 | 55 | 51 | 65 | 57 | 69 | 67 | 71 | 59 |
| Ohio | : 45 | 46 | 51 | 53 | 55 | 52 | 55 | 55 | 54 | 63 | 57 | 55 | 60 | 64 | 53 | 63 | 58 | 67 | 65 | 65 | 70 | 72 | 74 | 73 | 76 | 67 | 70 | 67 |
| Arkansas | : NA | NA |
| Kansas | : 11 | 11 | 13 | 14 | 16 | 24 | 14 | 18 | 15 | 22 | 19 | 19 | 24 | 21 | 18 | 25 | 31 | 30 | 27 | 41 | 28 | 24 | 31 | 14 | 31 | 29 | 21 | 34 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nebraska | : NA | 5 | 15 | 27 | 16 | 23 | 13 | 10 | 6 | 9 | 12 | 12 | 18 | 8 | 7 | 18 | 28 | 12 | 16 | 3 | 14 | 20 | 17 | NA | NA | NA | NA | 11 |
| North Dakota | : 9 | 10 | 7 | 10 | 8 | 11 | 8 | 9 | 12 | 11 | 10 | 9 | 13 | 15 | 13 | 18 | 15 | 17 | NA | 10 | 19 | 18 | 14 | 17 | 16 | 19 | 12 | 11 |
| South Dakota | : NA | NA | NA | NA | 3 | NA | 1 | 7 | 11 | 8 | 10 | 8 | 13 | 5 | 6 | 10 | 10 | 13 | NA | 16 | 17 | 22 | 14 | NA | NA | NA | 7 | 11 |
| Oklahoma | : 21 | 9 | 13 | 13 | 12 | 11 | 12 | 11 | 11 | 35 | 15 | 12 | 12 | 17 | 12 | 15 | 14 | 29 | 17 | 18 | 16 | 19 | 27 | 19 | 13 | 22 | 25 | 26 |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Texas | : 4 | 26 | 24 | 16 | 8 | 20 | 13 | 40 | 16 | 20 | 15 | 11 | 23 | 38 | 10 | 22 | 13 | 14 | 22 | 41 | 27 | 16 | 18 | 49 | 24 | 26 | 10 | 26 |
| Colorado | : NA | 12 | NA | 10 | NA | 3 | NA | NA | NA | 23 | NA | 9 | 6 | NA | 10 | NA | NA | NA | NA | NA | |
| Idaho | : NA | 9 | NA | 7 | NA | NA | 11 | NA | 12 | 12 | 33 | 10 | 31 | 35 | 10 | 32 | 38 | 2 | 22 | 27 | 24 | 23 | 27 | 24 | 21 | 32 | NA | 21 |
| Montana | : 3 | 1 | NA | NA | 1 | 1 | 4 | 4 | 6 | 9 | 8 | 5 | 22 | 27 | 9 | 21 | 21 | 18 | 19 | 19 | 11 | 11 | 9 | 22 | 12 | 14 | 9 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| California | : NA | NA |
| Oregon | : 17 | NA | 24 | 30 | 30 | NA | 14 | 29 | NA | NA | 20 | 25 | 22 | 38 | 37 | 31 | 42 | 37 | 31 | 38 | 32 | 42 | 42 | 49 | 35 | 38 | NA | 32 |
| Washington | : 80 | NA | NA | 2 | 13 | 51 | NA | 28 | NA | NA | NA | 2 | 20 | 10 | 37 | 18 | 78 | 42 | 31 | 42 | 33 | 15 | 26 | 32 | NA | NA | 21 | |
| : | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Average | : 19 | 35 | 37 | 39 | 36 | 39 | 36 | 36 | 38 | 36 | 37 | 35 | 37 | 41 | 34 | 43 | 40 | 47 | 41 | 48 | 46 | 36 | 44 | 43 | 52 | 46 | 44 | 43 |

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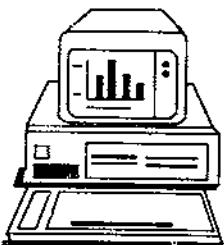
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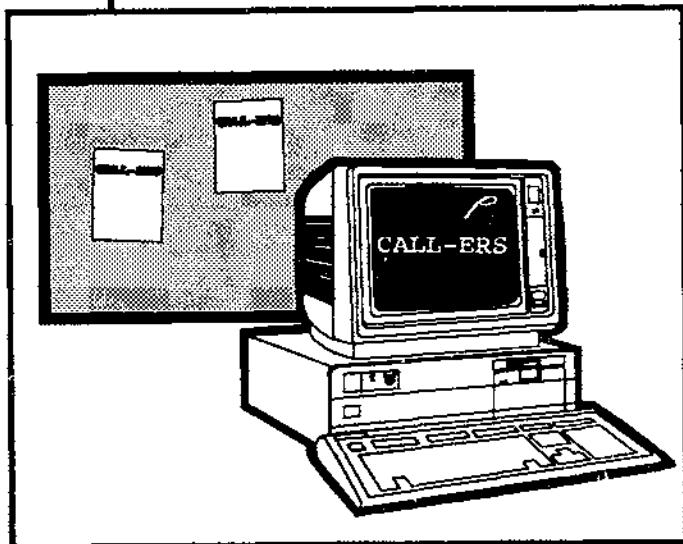
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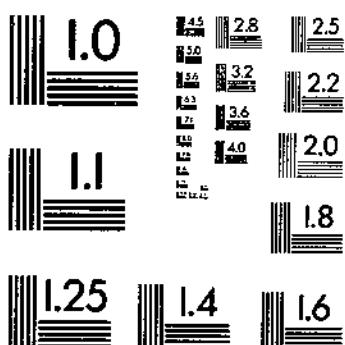
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