

USE OF COMMERCIAL FERTILIZER AND LIME

COMMERCIAL FERTILIZER

Fertilizers are applied to land for the purpose of improving the growth and increasing the yields of crops. Fertilizers contain one or more plant nutrients or elements that are needed by growing plants. Soils contain these same elements but often they are not present or available in sufficient quantity for best plant growth and yield. Hence, commercial fertilizers, barnyard manure, straw, and other fertilizing materials are applied to supplement the available nutrients in the soil.

The three major plant nutrients sold in commercial fertilizers are nitrogen, phosphorus, and potassium. Fertilizers may contain one, two, or all three of these elements and, in addition, they may contain calcium and/or some minor nutrients. Some of the common fertilizers containing nitrogen are ammonium nitrate, ammonium sulfate, and anhydrous ammonia. Among commercial fertilizers containing phosphorus the most widely used is superphosphate; others are finely ground phosphate rock, colloidal phosphate, and calcium metaphosphate. Muriate of potash is the most common fertilizer that supplies potassium. Mixed fertilizers contain two or all three of the major nutrients in various proportions. Soil tests and observation of growing plants are useful in indicating the particular mixture or proportion of nutrients that will give best results on a given soil for a given crop. The most profitable rate of application (pounds per acre) of fertilizer varies with the relative prices of the fertilizer and of the crop fertilized as well as with the yield response obtained from increasing quantities of fertilizer applied per acre.

Use of commercial fertilizer by farmers in the United States expanded greatly during the last 20 years. The proportion of all

farms reporting expenditures for commercial fertilizer and fertilizing material increased from 38.9 percent in 1939 to 44 percent in 1944 and 61 percent in 1954. In the North Central States the quantity of fertilizer used increased nearly three-fold during the 1941-50 decade (3). In some parts of this region the rate of increase was much greater than this. For example, the quantity of fertilizer used in Iowa increased from 9,000 tons in 1938 to over 600,000 tons in 1953 (1). The introduction of improved varieties of corn, the existence of relatively favorable fertilizer-crop price ratios, the increased knowledge of fertilizer use and soil management, and the improved capital position of farmers during this period contributed greatly to the expansion in fertilizer use in the Corn Belt. About two-thirds of the total fertilizer nutrients used in the belt is in the form of mixtures. In 1954, the commercial farms in the Corn Belt accounted for a fourth of the total expenditure for commercial fertilizer and fertilizing material by all commercial farms in the United States.

The percentage of farms reporting expenditures for commercial fertilizer in the United States, on a county basis, is shown in figure 30. The areas having the highest percentages of farms using commercial fertilizer are mainly in the eastern half of the country and particularly in the southern and southeastern States. Commercial fertilizer was used also by a large proportion of the farmers in irrigated areas of the West. In the Corn Belt, the highest percentage of farmers using commercial fertilizer was found in the eastern part. The proportion of farmers reporting expenditures for fertilizer ranged from more than 80 percent in parts of the Eastern and Northern Corn Belt to less than 10 percent in parts of the Western Corn Belt.

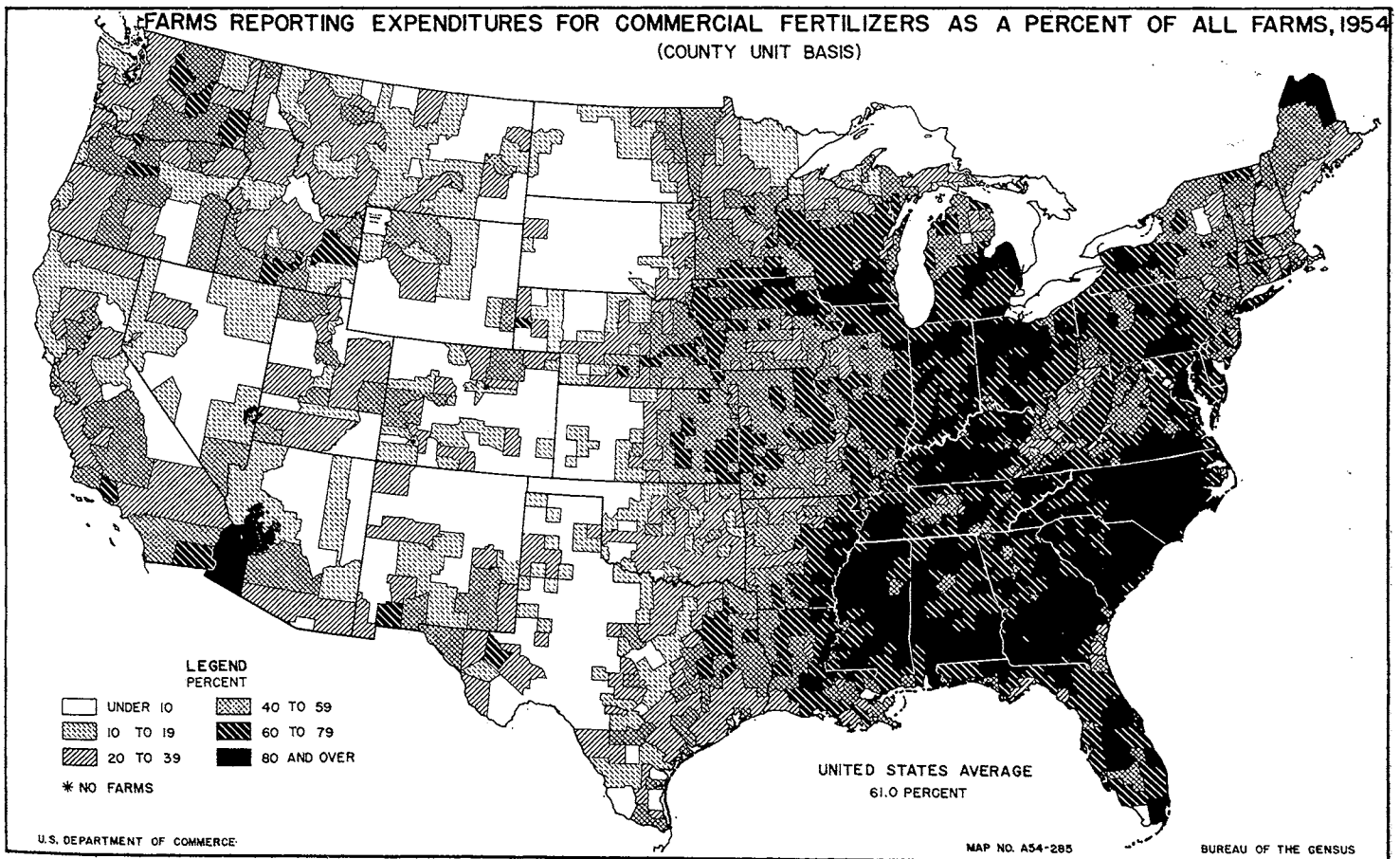


FIGURE 30.