The Effect of Fertilizer Use on Total Crop Production.—H. R. Smalley, National Fertilizer Association.

An estimate based on crop values for the 3 years 1926-28 and fertilizer consumption in 1928 and excluding the western group of 11 states shows that 11.5% of the value of all crops may be attributed to the use of fertilizer. That part of the total crop value produced by fertilizer in New England was 16.2%; in the Middle Atlantic States, 15.5%; in the Southeastern States, 46.4%; in the South Central States, 29.3%; in the Southwestern States, 5.6%; in the East North Central States, 8.0%; in the West North Central States, 0.9%; and in the Great Plains States, 0.1%.

For the important crops the figures were as follows: Corn, 6%; cotton, 28.0%; tobacco, 42.2%; potatoes, 26.6%; vegetables and fruits, 24.7%; wheat, 8%; oats, 3.5%; hay, 1.0%; and miscellaneous crops, 1.6%.

These estimates are based on a survey made in 1928 on 48,000 farms in 35 states and on the crop estimate of the U. S. Dept. of Agriculture.


After 300 samples of soils from Colorado, Wyoming, Montana, and Nebraska had been tested for phosphate deficiency by the Neubauer method and some 10,000 samples by the Winogradsky method, a new and rapid chemical method was worked out for soils of this type. In order to standardize the latter method, 101 different soils were carefully checked by all three methods. The agreement between the three methods was as follows:

73 out of 101 agree by all three methods.
83 out of 101 agree by Neubauer and Winogradsky methods.
82 out of 101 agree by Neubauer and chemical methods.
75 out of 101 agree by Winogradsky and chemical methods.

The percentage of agreement is still higher on the most deficient soils, classified as group C soils. Since the laboratory results have in some cases been confirmed by field trials, the authors believe that in general any one of the three methods may safely be substituted for the latter.

The chemical method is a somewhat radical modification of the Illinois method in which the soil is extracted with 0.25 N, 5.0 pH sodium acetate buffer solution, rather than with the acid molybdate reagent. The method is described in detail. As yet it is recommended only for soils of 7.0 pH and above, and for soils containing appreciable quantities of acid-soluble P₂O₅.