NITROGEN PROBLEMS IN THE SOUTHERN STATES

THE present economic structure of the South is dependent to a large degree on the supply of commercial nitrogen available to farmers. This is quite evident when it is realized that the six states, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi, consume about 60% of the commercial nitrogen used by the entire nation. Experimental results reveal that without the use of some form of nitrogen the economic production of crops would be impossible on a vast acreage of the land in the Southeast; whereas, the application of phosphorus and potash to the soil could be withheld for a short period of time with much less damaging results to crop production.

YIELDS OF CROPS IN THE SOUTH WITH AND WITHOUT THE APPLICATION OF NITROGEN

It is assumed that the response of crops to the application of nitrogen is similar for most southern states. A great many tests have been conducted on substations, on experiment fields, and cooperatively with farmers which show that the addition of an adequate supply of nitrogen to the average Alabama soil will usually double the yield of major non-leguminous crops (Table 1).

For most agronomic nonleguminous crops in the South, a decrease in the amount of nitrogen generally used by the farmer will cause a proportionate decrease in the yields obtained (Table 2).

It is believed that the South will be short 25% of commercial nitrogen for normal crop production in 1943. A 25% reduction in the amount of nitrogen that is normally applied to crops will, on the average, result in a loss of 1.17 pounds of seed cotton, 4 bushels of corn, or 6.4 bushels of oats per acre. At present prices this will cut the average farmer’s income by about 20%. It is our problem to reduce this loss in income to a minimum and to maintain production of essential crops during the nitrogen shortage.

METHODS OF MEETING THE PROBLEM OF NITROGEN SHORTAGE

The shortage of commercial nitrogen in the southern states previously mentioned will amount at least 50,000 tons during the 1942-43 season. Educational programs of one kind and another are being vigorously promoted by all the southern states in an effort to advise the farmers as to the most efficient methods of using the commercial nitrogen that will be available and to encourage the production of essential crops during the nitrogen shortage.

THE WINTER LEGUME PROGRAM

For the different states the percentage that should be in winter legumes varies, but in Alabama the ideal situation would be for every farmer to have one-fourth of his cultivated acreage in winter legumes. With mule power it is usually impossible for a farmer to turn more than one-fourth of his land late in the spring. This would mean that about 2,000,000 acres should be planted to winter legumes.