NOTE

LIME, POTASH, AND ALFALFA ON PIEDMONT SOILS

When cotton is planted after alfalfa on Piedmont soils, it is very common to notice signs of potash hunger on the cotton. This condition is called "rust" by the farmers. The explanation commonly given of this condition is that it is caused by the alfalfa removing large amounts of potash from the soil. This explanation seemed reasonable as in five years time the potash removed from an alfalfa field would amount to 1,000 pounds per acre. As the surface 7 inches of many of the Piedmont soils do not contain more than a total of 5,000 to 10,000 pounds of available and unavailable potash per acre, the removal of 1,000 pounds would seem to account for rust on cotton planted after alfalfa.

On a trip through South Carolina in the fall of 1928, a field of cotton was visited which was very heavily rusted. Questioning the owner of the land, the history of the field was found to be as follows:

Three years before the cotton crop was planted, the field had been limed with about 2 tons of limestone per acre in preparation for planting alfalfa. For some reason the alfalfa was not planted. The owner reported that rust had been bad on the cotton in this field every year since the lime was applied.

On part of the field the N. V. Potash Company had made a heavy application of potash as a demonstration. Where the potash was applied no rust was observed.

It appears from this that rust or potash hunger in cotton following alfalfa is caused by the lime which is always applied for alfalfa in this section. The old idea that lime liberates potash does not seem to be true on these soils. Either the lime locks up the potash, so that the cotton plant cannot get it, or the lime greatly increases the need of cotton for this element.—R. P. Bledsoe, Georgia Agricultural Experiment Station, Experiment, Ga.