NITRIFICATION STUDIES WITH YAHOLA SOILS

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In recent articles in this Journal, data were presented which show the influence of lime and organic matter (manure) applied to two typical soils of the Great Plains region (Vernon and Kirkland soil series) on plant characteristics and nitrate production.

The purpose of this article is to give briefly the influence of these materials when used on the Yahola soil of the same region. The Yahola soil is a bottom land soil formed principally from the Red soils (Vernon). The Red lands formed from disintegrated and weathered sandstone generally occupy the rough to steep hills and erode quite badly, the material washing away and forming a rather deep soil generally of a sandy nature. This newly formed soil is classified Yahola. The subsoil is generally of a lighter texture and color than the surface soil. Very often the first two or three inches of the surface soil is of a sticky sandy-clay nature, and is sandier below, becoming more open as the depth increases. The color of the surface is reddish brown, while the subsoil lightens to an almost salmon shade. The surface drainage is generally good but the under drainage is such that a large amount of moisture is lost.

The soil type used for this experiment was Yahola very fine sandy loam. The surface soil is a little heavy, but the general soil is moderately open in character.

The rate per acre of the various treatments and general results as to nitrates produced found are given in Table 1. The soil has received the outlined treatments twice since the experiment was started, once in 1917, and again in 1921. The nitrate data given are the results of pot tests using 100 milligrams of ammonium sulfate as the material to be nitrified for each 100 grams of soil.

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