NOTE

A REAGENT FOR THE ELIMINATION OF THE INFLUENCE OF HIGH AMMONIA CONCENTRATIONS UPON THE POTASH RESULTS IN SHORT CHEMICAL SOIL TESTS

MOST of the short chemical tests for available potassium in soils are based on the reaction between sodium cobaltinitrite and a potassium salt to form the dipotassium sodium cobaltinitrite which is precipitated in more or less colloidal form by means of an alcohol and the resulting turbidity measured by a variety of procedures. Ethyl, methyl, and isopropyl alcohols have been used to effect the precipitation.

While all investigators\(^1\) of the cobaltinitrite method for potassium in soils recognize the possibility of interference from the ammonium ion, there is a lack of definiteness as to the extent of this influence, except for the statement by Bray that the test as carried out under his conditions is approximately four times as sensitive to the potassium ion as it is to the ammonium ion.

Under carefully defined conditions, as would be encountered in the use of the sodium cobaltinitrite test for potassium in soils by the short chemical method, the influence of the ammonium ion and the use of different alcohols has been investigated, and the reaction described by Macallum for the elimination of ammonium salts in the cobaltinitrite reaction for potassium has been applied to these tests.

While ethyl alcohol has been found to be the most satisfactory alcohol (of ethyl, methyl, and isopropyl), relatively large amounts of ammonia nitrogen in the soil extract distinctly deviate the results. A reagent for eliminating the influence of ammonia in the short chemical tests is very highly desirable. Formaldehyde substituted for a part of the alcohol in the test eliminates the interference of a high test of ammonia. Two milliliters of 37% formaldehyde supplied before the alcohol is added completely ties up the ammonia and prevents its

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———. Mimeographed supplement. 1936.

