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EXTRACTION OF INORGANIC NITROGEN FROM SOIL

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ABSTRACT

A method of determining exchangeable ammonium, nitrate and nitrite nitrogen in soils is described. It involves shaking of the soil sample with 0.5 M potassium sulphate (20 meq K/g of soil) for 2 hours at 2°C and then analysing the extract with a Technicon Auto-Analyzer after filtering the suspension through Whatman Filter paper No 40. The method is accurate and precise and is applicable to a broad range of soils. The filtered soil extract can be safely stored in a 2°C frefrigerator for at least one week without altering its mineral nitrogen content.

INTRODUCTION

Bremner and Keeney [5] developed a method for the extraction of soil inorganic nitrogen and determined this by the steam distillation method. Their study of the method of extraction revealed that the amount of ammonium extracted from soil by potassium chloride solution at room temperature is essentially maximal if 2 M potassium chloride is used and the soil sample is shaken with this reagent for one hour using 10 cm^3 of 2 M potassium chloride per g of soil. They further showed that the amount of ammonium extracted by shaking the soil with potassium chloride at room temperature for one hour is the same whether 1 M, 2 M or 4 M potassium chloride is used, provided that the amount of potassium chloride solution employed contains the equivalent of 20 meq of K per g of soil and that it is not increased if the meq of K per g of soil exceeds