

INTRODUCTION

The mineralisation of organic nitrogen is the process whereby nitrogenous compounds in plant and animal residues are broken down into inorganic forms by micro-organisms in the soil.

This process can be divided up into two definite stages; one, organic nitrogen to ammonium nitrogen and two, ammonium nitrogen to nitrate nitrogen. In the literature some confusion exists on the nomenclature of these processes. The conversion of organic nitrogen to nitrate nitrogen is referred to as 'mineralisation' in some papers and as 'nitrification' in others. The name 'nitrification' is also used to describe the stage ammonium nitrogen to nitrate nitrogen. In this report the entire process, organic nitrogen to nitrate nitrogen, is referred to as mineralisation, the stage organic nitrogen to ammonium nitrogen as ammonification, and stage ammonium nitrogen to nitrate nitrogen as nitrification.

The importance of mineralisation was first recognised in the late 19th. It was realised that plants could only take up nitrogen in inorganic forms and of these, only the ammonium and nitrate ions could be absorbed by the roots. Initially it was thought that nitrate nitrogen was preferred by most plants but this view is no longer held. Mineralisation therefore is the process which makes nitrogen from organic material available for new plant growth.

Of the three major nutrients, nitrogen deficiency most frequently limited plant growth in West Indian soils (Partridge 1965). The object of this report was to study the effects of time, pH and moisture content on the mineralisation of nitrogen from organic materials of varying C/N ratios. Mineralisation was studied in three soils of contrasting texture.