ABSTRACT

The thesis describes soil variability within the Cunupia series of central Trinidad on a cultivated area. The soil series was analysed for field morphological properties, and physical and chemical properties that are used in soil survey publications.

It was found that morphology and physical properties varied only slightly - always less than 1% coefficient of variation. Chemical properties however, were seen to vary much more.

Seven sampling programmes were carried out in order to see how variability might alter between programmes. It was found that variability could be measured by programmes involving one-seventh of the effort involved in the largest programme. Variability increased with the size of sampling area, and not with the size of sample.

Cultivation practises were found to have little effect on variability of conductivity, CEC, calcium, magnesium, nitrogen and C/N ratio. Management had greatest effect on phosphorus, Carbon, sodium, potassium and pH were shown to be affected to lesser extents.

It was found that the major nutrients: P, and K are the most difficult to define quantitatively, even between certain range limits. Mg, C, N and Na are the easiest to define quantitatively. The number of sampling units needed to give reasonably accurate values for chemical parameters in the study area is established.

It is suggested that a further study embracing all the area mapped as Cunupia clay could be carried out in order to establish the 'purity' of the Cunupia series in Trinidad.