A Chemical Investigation of Mineral Levels in Coconut Water, in Relation to Soil, Season and Yield.

INTRODUCTION

Since Liebig's days (1840) the possibility of diagnosing levels of available plant nutrients in the soil by analysing plant tissues has received considerable attention. Goodall and Gregory (1947) have given a summary of work done up to 1947 in connection with tissue analysis for diagnostic purposes. Wallace (1951) also describes the use made of these tests at Long Ashton mainly as confirmatory tests for supplementing visual diagnosis of mineral deficiencies of plants in the field.

We now know that a great many complex physiological processes are involved in the uptake of nutrients from the soil, and great care is required to interpret the data from foliar analysis especially when rapid colorimetric methods have been used. Full chemical analysis, though much slower, are much more accurate. Such work has assumed a great deal of importance in the last thirty years and some workers such as Cook (1949), Richer and Driskell (1952), Nicholas (1948) and Prevot and Ollagnier (1954) have found significant correlation between yields, levels of minerals in plant tissues, rate of application of the minerals to the soil and the composition of the soil. Evans (personal communication) has found that foliar analysis of the sugar cane has given an accurate criterion for fertilizer programmes which have reduced fertilizer bills and increased yields enormously. Generally tests on leaf tissues indicate reasonably quantitatively whether or not a plant is getting sufficient nutrients to satisfy its needs at the moment the test is made. Recent emphasis has been given to rapid colorimetric and turbidimetric methods of tissue analysis as used by Nicholas (1948, 1951, 1953) Plant, Jones and Nicholas (1949) and Evans and Murray (1954).