

## INTRODUCTION

One of the problems in breeding perennial tree crops such as cacao is that experimental material occupies much space in the field. In addition, a considerable number of years must be allowed before the yielding ability of the genotypes can be properly evaluated. Space and time are both limiting and therefore the amount of breeding material that can be handled is considerably restricted.

In a breeding programme where a large number of lines is to be tested the existence of an association between early vigour and yielding ability could be used to eliminate weak plants at an early stage. This would increase the efficiency of selection and the number of 'good' genotypes which could be included in subsequent progeny tests and variety trials.

A considerable variation in the rate of development of young cacao seedlings of different genetic constitutions has been observed. It was felt that a method of early testing could be developed by studying the characters related to plant growth and by determining their genetic and environmental relationships with yielding ability.

Owing to the short time available for carrying out this study it was not possible to determine which of the characters influencing growth of young cacao seedlings are associated with the yield performance of mature trees. This study is concerned with the heritable relationships among the factors affecting early growth. Firstly, the characters themselves must be studied to determine whether they are genetically influenced, the effect of environment on development, and, which characters are suitable for measurement and are important in selection.