

## INTRODUCTION.

The need for grassland research has now become a vital necessity in tropical agriculture. Due to the increase in population on available land the old system of a bush fallow associated with shifting cultivation is no longer possible. The rapid breakdown of soil structure under continuous arable cultivation in the tropics can only be checked by a periodic soil cover. A system of alternate husbandry using pasture grasses not only overcomes this problem to a great extent, but also makes the production of animal protein, which is deficient in the tropics, possible.

Work on pasture grasses in the wet tropics has made only limited progress. In many cases only grasses in small observation plots have been examined. As it is animal production which is the major objective in the grass production, the next step appears to be the selection of grasses most suited to this purpose.

With other miscellaneous concentrates and roughages, the composition of the ration consumed can be controlled by man but with grass this is, in the greater part, determined by the self selection of the grazing animal. It is therefore essential to know:-

- (a) What the animal prefers.
- (b) The factors which govern the selection.
- (c) Whether the animal's own choice is a true guide to its physiological requirements.

As in all fields of agricultural research, the object of a study of food preference is eventually an increased efficiency in animal production. It may be legitimately argued that a fundamental understanding of such preferences will ultimately

lead to improved methods of feeding and management for optimum production, since a fuller knowledge gives fuller control.

The review of literature shows the present knowledge available on food preferences, factors affecting animals selection being critically reviewed. Finally a section is devoted to an experiment in which the preferences of sheep and goats for five pasture grasses were observed.

It must be remembered that palatability is a function of the animal rather than the plant since it is the action of the animal in accepting or rejecting a food that assigns to it a degree of palatability. Therefore the animal factors can be considered to be of primary importance whilst plant and environmental factors are secondary since they show their influence through the animal.

(a) Species and Individual Variations in Preferences.

Food selection varies with different species of animal. It is common knowledge that a goat makes obviously different choices from a dairy cow and a chicken from a turkey. Tribe (1960) reports experimental evidence of this factor when he reviews the classical work of Linnaeus (1749). Linnaeus offered 618 plants both singly and in mixtures to sheep, goats, cattle, horses and pigs, finding in many cases that while one or two animal species would readily accept a particular plant others would reject it. He found that of all the classes of stock used, goats and sheep showed least discrimination refusing 14% and 22% respectively of the plants offered.

Later work by Tiemann and Miller (1953) is reported by Tribe (1958). In their studies on grasses and clovers they found that, while *Festuca pratensis* was definitely unpalatable to cows and horses, it was readily accepted by pigs and sheep.