

SECTION I

GRASS DIGESTIBILITY TRIALS

WITH SHEEP AND GOATS

INTRODUCTION AND OBJECTS

The old adage that "half the breeding goes in at the mouth" has a particular significance in the tropics. The saying expresses in a simple way the important fact that an animal cannot reach the maximum expression of its genetic capabilities if it has limitations imposed by poor feeding. This fact is not widely understood in the tropics where only a minority of the indigenous farmers understand and apply the principles of scientific nutrition. It must be understood that the breeding of new strains of livestock suitable to the tropics is not the panacea to all evils. These animals must be intelligently fed if the maximum benefit is to be derived from them.

In computing balanced rations for livestock the amounts of nutrients furnished by the various available feeds must be known. Attempts have been made to accomplish this by chemical analysis. A determination of the chemical composition of any one nutrient in a feed is possible but this involves much time and labour. Moreover the metabolic processes after the ingestion of the food are too varied and are not yet understood in all their details. However, in conjunction with the chemical method, certain simple standardized physiological techniques have been evolved and adopted in the evaluation of the nutritive value of a feed. The simplest of these is the digestibility trial by means of which the digestion coefficient (or digestibility percentage) is determined.

Whilst much work in this field has been done in temperate countries, little is as yet known of grass digestibility in the Humid Tropics. It is known that there are many factors which influence the digestibility of a given feed. It is necessary that these factors be thoroughly investigated in order that a set of conditions may be evolved under which the Standard Digestibility of a feed may be measured.

The objects of these trials were as follows:

- (1) To study the digestibility of Tripsacum laxum Nash (Guatemala grass) in the Humid Tropics using sheep and goats in digestibility crates.
- (2) To study the relation, if any, between the digestibility of the grass and the age at which it was cut i.e. at three and six weeks old.
- (3) To study the relation, if any, between the digestibility of the grass and the type of animal used to determine it i.e. sheep and goats.
- (4) To study and compare the intakes by the animals of the three and six weeks old grasses.
- (5) To test and, if possible, improve the design of the digestibility crates which have been evolved at the College.