

INTRODUCTION

During recent years considerable attention has been given to the improvement of Agriculture in the Tropical Colonies. A system which will rectify the evils of both the past systems of peasant and estate agriculture has been sought after, and there is a growing realisation that agricultural progress in the tropics lies along the lines of the development of mixed farming (1).

The importance of livestock in the development of this system has also been appreciated. In consequence, livestock selection and the improvement of local animals by grading up with imported pedigree breeds has been going on in many colonies for a number of years. Unfortunately the old saying "half the breed goes in at the mouth" does not seem to have stimulated the same interest in foods of tropical animals that one would have expected, and investigations along these lines have lagged considerably behind those of improved breeds.

It is a generally accepted theory, that high grade animals in the tropics tend to degenerate very quickly towards the level of local scrub. How much of this degeneration is due to climatic effect, however, and how much is due to the type of feeding the animals received has never been clearly stated.

It is therefore important that the most efficient methods of utilizing the best existing types of tropical fodders, and any new types that may be evolved, should be studied.

Edwards in Sierra Leone (2) tried grazing experiments with sheep to discover the grasses most preferred by these animals, whilst extensive pasture investigations including rotational grazing have been carried out by Staples in Tanganyika (3). Paterson (4) has worked on the cultivation of fodder grasses in Trinidad where soiling is the system most generally used where-ever stock are kept in large numbers. There is in nearly all Colonies, however, a time of the year when the amount of green material available for livestock is strictly limited, and where some method of crop preservation would be of considerable value to dairy farmers and others.

Hay making is not a practice generally suited to the tropics chiefly because of climatic conditions, but it has been tried in the drier parts of India, and there are reports of experiments being done on it in Antigua and Tobago, but again climate and the low nutritive value of the grasses used seem to be its main limiting factors. Paterson (5) studied the feasibility of artificial grass drying in Trinidad, but the low nutritive value of the product did not warrant the expense involved.

Crop conservation by ensilage on the other hand seems to have met with a greater measure of success than either of the above mentioned methods. Investigational work based on the experiences gained over a long period in temperate regions has been carried out in a number of Colonies with the object of standardising a technique suitable for the tropics. Preliminary investigations on this subject were started in 1942-43 by Hammond (6) and Storrar (7) and the present work is largely a continuation of their studies.

These five types were briefly as follows:-

(1) Sweet Dark-brown Silage

Produced as early work^s showed when temperature of fermentation exceeded 113° F. It has a pleasant smell, is generally comparatively dry and is readily eaten by stock. It is frequently produced in stacks where air has easy access. On account however of excessive heating, it loses more digestible food material than other forms of silage. But at such a high temperature only those bacteria producing lactic acid can survive, so that there is no danger of undesirable butyric fermentation taking place.

(2) Acid Light-brown Silage

The range of temperature at which this type is produced is usually between 68° F.-104° F. Produced in tower silos when moderately mature crops containing 25-30 % dry matter are ensiled. Yellowish-brown in colour with a pleasant though slightly acetic acid smell. Animals thrive on it.