

INTRODUCTION

Growing concern about the nutritional status of a large proportion of the world's population has been paralleled by increasing interest among agriculturalists in the better use of grassland resources. While the main energy-producing foods such as the staple cereals still call for most research, attention is also being given to the improved use of grasslands and livestock for the production of high-quality protein foods. It is also recognised that in this way a secure basis for a sound, mixed-farming system will be laid, to replace present haphazard peasant methods in many of the less-developed countries.

One of the main limiting factors of present livestock production is lack of adequate nutrition of the animals during the dry season, which may last two to ten months in tropical regions. A large number of cattle may die of starvation; even if they survive, the effect of a severe nutritional depression on their productive and reproductive performance is tremendous. But many of these grassland areas which support only a poor type of extensive livestock production produce much more plant material in the wet season than can possibly be utilised by the animals.

The main methods by which the variation in grass growth due to climate can be modified are:-

- (a) Use of more productive and drought resistant pasture plants.
- (b) Use of fertilisers.
- (c) Use of irrigation.
- (d) Use of conservation techniques.

The use of irrigation and fertilisers is confined to a small number of situations where the high cost can be offset and other specific conditions met. The work being done on new pasture species will probably be of great value, but it is a slow process, and results will be long in coming.

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The last method, that of conservation of surplus fodder in the growing season for feeding in the dry season, is one on which much knowledge has accumulated in temperate countries. Haymaking is the most widely used conservation measure in temperate countries. It has limited application to the tropics because the requisite dry period for curing of the grass is often not available in the wet season. The technique of artificial drying is limited in use because it requires a high level of capital investment and requires a highly nutritious original herbage material to be economical. Tropical herbages do not often meet this requirement.

One method of conservation which would seem to be applicable to most climatic conditions and to a wide variety of farming circumstances is that of ensilage. Briefly, this consists of harvesting and storing plant material in a fresh, succulent condition, in a consolidated mass, when chemical and biological action produces a succulent fodder of good palatability and retaining a high percentage of the feeding value of the original herbage. Silage can be made from a large number of plant materials. It is not affected by the weather, and the stored product is not subject to insect or mould damage. The technique does not require a high standard of management, but fits in well with the development of grassland management principles as they should be learned by the small farmer.

Some work has been done on ensilage in the tropics in the past, but the process has not been widely adopted. This is probably due to the low level of farming generally and the low feeding value of the fodder produced. The advent of new, more productive and nutritious tropical pasture plants may lead to more interest in ensilage in the future, recognising its value in promoting the productivity of both grasslands and livestock.