



Guinea grass, one of the many grass varieties being experimented on in Antigua.

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IN SEARCH OF GREENER PASTURES

by DAVID SPURGEON

Research on pasture legumes, now being carried out in the Caribbean, could revolutionize agriculture in Africa by opening up vast areas for livestock production.

"This is not far-fetched," says John Keoghan, director of the Antigua component of the project. In fact, grasses being experimented on in Antigua, Trinidad and Belize, and thought of as native to these Caribbean islands, actually come from Africa. They have been chosen because they are suitable to dry livestock grazing soils, both in the Caribbean and Africa.

"This is what the Australians did", says Mr. Keoghan. "They went to South and Central America and found plants for Northern Australia, which is tropical. The legumes that dominate livestock agriculture in Northern Australia were originally growing as weeds in South and Central America."

The research carried out in Antigua aims to make better use of this tiny island's rocky and hilly land. Since a sugarcane factory left the island some years ago, there has been little more than tourism and rum-making in the way of industry there -- both the molasses for the rum and most of the beef for tourists being imported. Yet, if the grasses and legumes were more abundant and of better nutritional quality, the land could be used for grazing cattle. The island might become self-sufficient in beef and dairy production, and even export to other Leeward Islands.

The program, begun in 1972, is being conducted by the University of the West Indies with the aid of a grant from Canada's International Development Research Centre. Mr. Keoghan and a team of researchers from various parts of the world have

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collected several hundred varieties of grasses and legumes from the area for planting in experimental plots. They are carrying out a complete classification and description of the plants, and making an agronomic assessment under different growing conditions, for example, with different types of soils, and in mixtures of grasses and legumes.

Two experimental plots are being used, one of them near the old sugar mill, where the small amount of laboratory equipment required is located, along with nursery facilities. Although pasture legumes are widespread the world over, very little research has been undertaken to exploit their potential, and this is the only project of its kind in the area.

Pasture legumes are important not only for their high protein content, but for their ability to fix nitrogen and thus to provide a fertilizer for the grasses. This latter capacity is particularly important to developing countries at a time of high fertilizer prices.

Samples of legumes collected from all over the island and from other countries in the region are grown in plots. Leaves are clipped from selected plants, dried in ovens at the sugar factory, and their weight measured. Nitrogen and protein content are determined, and records are kept of these measurements. Seeds are collected and examined, and then sent to the Commonwealth Scientific and Industrial Research Organization in Australia, the main centre of tropical legume research, which is participating in the project.

After two years of trials in these plots, the research group in Antigua is now beginning to mix the best grasses and legumes in field trials on heavy soils. Later it will test them under actual grazing conditions. The types of soil used for the trials are representative of those found in much of the grazing areas in Antigua, and in many parts of Africa. This is being done with grasses and legumes grown singly as well as in mixed stands, to determine the effects of the legumes and grasses on each other. Animal grazing tests will follow.

Basically the idea is to narrow down the choice of grasses and legumes to the best varieties available for local conditions, to determine the most productive combinations of plants grown together, and to work out the most suitable management practices. It is the first time such a project has been undertaken in the Caribbean, and the experiment is being followed with interest by neighboring countries where similar conditions prevail.

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