

INTRODUCTION

(i) General background

One of the major agricultural problems in the West Indies today is the inability of most of the islands to meet local demand for dairy products, especially fresh milk for human consumption. The need to overcome this problem is of paramount importance to the area since the islands, some of which, like Trinidad and Tobago, have obtained political independence, and can ill afford to spend foreign exchange reserves on importations of dairy produce, when the purchase abroad of capital equipment is so much more vital to their economic progress.

Trinidad, for example, imported approximately \$14.5 million worth of dairy products in 1964, (Ann. Stat. Dig. 1964) in order to meet the wide gap between home production and consumption. With a population now rapidly approaching one million, this represents an expenditure of \$14.50 per capita. Local milk production has not been carefully estimated since the 1946 census, and the daily figure of 3,831 gallons then is hardly valid, except that it represented an availability of 0.038 pints of fresh milk/head/day for the population at the time. Every indication is that this depressing situation has not significantly improved since then. The agricultural census at present in progress may shed some light on the position today; unfortunately, although this is nearing completion, it will probably not be published until later this year (1966) or early in 1967, and no figures can be released before this.

In the sense in which the term is generally accepted in 'developed' countries, there is no real 'dairy industry' in Trinidad. No organised distribution of milk in urban areas exists, except by a handful of producers who retail their own production. Most of the country's daily milk production comes from small holdings, where the farmers keep a few cows tethered on land that can hardly be called 'pasture' in the

accepted sense of the word. Very small quantities of milk are produced on each holding, therefore, and even less is actually sold, since most of this milk goes towards the family's subsistence. However, some small-holders sell milk to itinerant vendors who operate in urban areas. Some larger scale operations do exist, but these are few, and consist of herds maintained by commercial industrial firms or agricultural estates to supply their employees, herds for teaching and demonstration purposes, and herds maintained by the Ministry of Agriculture to supply stock to small-holders and to provide material for research work. Therefore very few purely commercial herds are to be found on the island of a size to make much of a contribution to milk sales.

Faulkner (1962) in his report on Livestock Development in Trinidad and Tobago, states that large-scale commercial milk production is lacking here for five main reasons:-

- (1) Greater returns are to be obtained from cash crops grown on land, the value of which in itself is relatively high.
- (2) Competition from imported high quality milk products, which can be produced more efficiently elsewhere, e.g. New Zealand, Australia, Western Europe.
- (3) Lack of technical knowledge and experience by those attempting to pursue dairying.
- (4) The high cost of obtaining suitable stock with the potential to produce at a sufficiently economic level to make milk production an attractive proposition.
- (5) The lack of an efficient marketing and distributing organisation.

At present, Government is making strong efforts to remedy the situation, but much remains to be done. Several importations of purebred and grade Holstein stock have been made from Australia, Florida,

Puerto Rico and Canada, but the initial cost per animal is high (approx. \$600 - 700 for an in-calf heifer). However, there is an urgent need for good dairy stock and the scheme, now in its fourth year, answers this partially. For economic reasons, in-calf heifers are now generally imported; the initial stress on these animals attempting to adapt to a new and, for most of them, more severe environment, cannot be underestimated. Tick-borne Anaplasmosis (Anaplasma marginale or centrale) is contracted on arrival in Trinidad, adding to the stress on the animal; resistance is eventually built up. Some interesting work on levels of anti-biotic treatment is currently being carried out by the Department of Animal Production, U.W.I. (Dr. H. Williams), using chlortetracycline. Excessive levels, however, can decrease effective resistance to the disease, resulting in a return to susceptibility. On importation, therefore, there is an overall deterioration in the condition of the animals and only after several months of careful management, and generally a first lactation, can the animals be sold to farmers from the Government Livestock farms.

The total cattle population in the country, inclusive of beef, dairy and draft animals, is about 45 - 50,000 head, according to Faulkner (1962), but 95% of these are kept on small holdings under 100 acres in size. However, the size of these holdings is usually under 5 acres in size (79% of the total overall - 1956 Agricultural Land Utilisation and Production Report). Of the acreage of agricultural land, farms under 100 acres represent 48% and are farmed by 34,428 families.

In 1964, 14,400 acres were under pasture (Ann. Stat. Dig. 1964), Wilson (1960) has suggested that a carrying capacity of one beast/acre and an average productivity of 500 gallons per 305-day lactation would make dairying competitive on a profit per acre basis with other agricultural enterprises. He emphasises that milk must be produced at low cost to make this possible. A higher stocking rate of 2 beasts/acre

with a lactation yield of 750 gallons could yield \$800 per acre per annum profit, according to Wilson, making milk production a more attractive proposition than sugar, coconuts, or cocoa. Here purebred Holsteins, selected for adaptability and productivity, and managed under high standards, could provide the answer. This is being achieved in Puerto Rico now. How far the consumer is prepared to pay a realistic price for quality milk is difficult to say, in a country where manufactured milk is already so much a part of the diet. Persuasion of the public in favour of fresh milk could be a slow and expensive process.

Wilson in another paper (1958) suggested that 67,000 head can be supported on the available land suitable for pasture, only if this were to be greatly improved. On his figures, this meant an increase of 23,000 head which would be sufficient to reduce imports of dairy products by half only, based on an average 500 gallon cow. He concluded that the increase per cow was therefore the most important aspect of the problem, rather than increasing the cow population.

With purebred exotic animals, a sufficiently high level of management to enable them to express their potential to the optimum is imperative. Since Government is distributing current importations onto small-holder schemes, this spells an adequacy of technical education amongst the farmers if they are to succeed with such high quality animals. A quite impressive start has been made on the Waller Field Pilot Scheme, and rapid expansion of the scheme is going ahead. Considerable time and effort from trained staff of the Ministry of Agriculture will need to be injected, credit facilities made available to farmers (as at present), and very careful selection of farmers to take up settlement on these dairy farms made to ensure success. It is too early to be able to evaluate the scheme, but so far progress is promising. It is often argued that grade animals would be preferable for such a venture, that other breeds more adapted to this climate, such as the Jersey and Brown Swiss, be tried.