

SUPPORTING THE DEVELOPMENT OF LIVESTOCK PRODUCTION  
IN GUYANA AND SURINAME

IICA PROJECT

IICA OFFICE IN GUYANA

HERD MANAGEMENT

OF

ST. STANISLAUS DAIRY DEMONSTRATION UNIT

AT

ST. STANISLAUS COLLEGE FARM

SOPHIA BACKLANDS

GEORGETOWN

COMPILED BY

DR. PETER DAVIS  
DR. HECTOR MUNOZ  
MR. M.P.MANSARAM

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**MANAGEMENT OF THE BREEDING HERD  
AT ST. STANISLAUS COLLEGE DAIRY FARM**

Herd Management refers to the practices in the day to day handling of the herd to achieve the maximum production from each animal and the farm as a whole:

1. Efficient utilization of farm labour;
2. Effective maintenance of herd health; and,
3. Maximum use of available land for pasture.

At the St. Stanislaus College Dairy Farm, the breeding herd is managed within an integrated system of simple dairy production practices, which include a feeding regime, a milking routine, herd health and reproductive management practices, breeding and record keeping. A description of these practices are as follows:

**1. FEEDING REGIME**

**Forage:**

The main feed is a good quality forage, Antelope grass (*Echinochloa pyramidalis*) which is grazed fresh at 26 days. Each adult cow (400kg), or one animal unit, is estimated to consume at least 10% of its body weight or 40kg/day of fresh grass (approximately one bundle). When Antelope grass silage is fed, approximately 20kg is required per animal unit.

Forage of high dry matter, high crude-protein and low fiber contents has been consistently obtained from Antelope grass pastures grazed in a cycle of twenty six (26) days. Control of the grazing has been achieved by an electric fence powered by a solar charger. With this system of grazing management, labour requirements for feeding is minimal.

**Supplements:**

Supplemental feeding for the milking cows consists of 1kg of wheat milling at each milking. Depending on the availability of copra meal, it is occasionally mixed with the wheat milling in a combination of 30 parts copra meal to 70 parts wheat milling.

Additionally, ad-libitum feeding of mineral block salt ensures supplementation of minerals such as calcium, phosphorus, magnesium, zinc, selenium, copper, etc.

Recently, the feeding of legume plants has been intensified in an attempt to replace the use of supplemental feeds. Legume plants on the farm include *Glericidia*, *Leucaena*, and *Erythrina*. The leaves are used in silage or fed fresh along with silage to the animals while they are penned.

## 2. HERD HEALTH

### Internal Parasites

The animals are treated routinely for internal parasites. Dry cows are given Ivermectin or, upon freshening (calving) are treated with a Levamisole base dewormer three days before the milk is used for human consumption.

### External Parasites

Treatment for external parasites including ticks is mostly around the onset of the rainy season and therefore not more than twice a year. A pour-on type acaracide (tickicide) e.g. "Bayticol", has been found to be most effective due to its residual effect over a six week period, even in the rainy season.

### Mastitis

Mastitis control is closely coordinated with the milking procedures. Regular California Mastitis Test (CMT) is performed twice a month and on all cows to be dried off or suspected to have mastitis. Treatment is instituted on all cows reacting as "CMT-Trace" in this test using a series treatment (two to three syringes of antibiotic depending on the type of preparation) of Lactating cow treatment. Cows being dried off and also reacting to the CMT are treated with one syringe of Dry cow treatment per affected quarter.

## 3. REPRODUCTIVE MANAGEMENT

Two main goals of reproductive management at the farm are:

1. for each cow to produce a calf a year, and
2. for the herd to calve year-round.

The near-achievement of these goals has contributed to maintenance of a consistent level of total farm milk production from month to month over last ten the years.

Reproductive management consists of rigid practices which are applied to each cow from one calving to the next. These management practices are as follows:

- At seven months of pregnancy, heifers are put in with the milking cows when they are going through the milking parlour to get them accustomed to the parlour;

4.

Cows are milked with a milking machine and without calf stimulation. Milking procedures are as follows:

1. - Feed is put in a feed trough in the milking parlour;
2. - The cow is let in from the waiting area to the milking parlour and restrained with a chain behind the hind legs of the cow;
3. - The udder is rinsed off using clean water;
4. - First milk is stripped out by squeezing teat once or twice, and the stream of milk is directed onto a dark/black surface to check for clots in the milk. This is a simple but essential test for clinical mastitis (infection of the milk gland); If the California Mastitis Test (CMT) is needed, the best time is just after the first one or two strippings of milk from the teats. This tests for subclinical mastitis; Milk from quarters which react to the CMT is discarded or fed to the calves;
5. - The udder and teats are washed and massaged for about a minute until the udder appears to become tight and the teats feel firm;
6. - Excess water is allowed to drip from the teats or, if available, each teat is dried with separate paper towels. The same towel should not be reused for any other teat or animal since that would spread infection;
7. - The clusters of the milking machine are attached to the teats taking care not to fold the teat in the teat-cup. Milk should begin to flow after suction of teat-cups fixes the cluster onto the teats. Milk flow may last for about five minutes, dependent on the bore of the teat canal, the size of the teat in relation to the teat cup and the amount of milk which is letdown;
8. - When milk flow slows, the cluster is pulled gently downward to relieve the pressure on the udder and at the same time to strip out residual milk. When the milk flow almost stops, the clusters are detached from the teats;
9. - As a precaution to prevent mastitis, all excess milk in the udder after cluster removal is removed by hand-stripping.

## 5. THE BREEDING HERD

### Genetic Composition:

The dairy herd consists of up-graded "Creole" cows, most of which are crosses varying between  $3/8$  to  $5/8$  - Holstein. The present herd consists of cows which are part of, or are descendants from, the original batch of "Creole" cows which were introduced to establish the farm.

### Breeding:

A modest breeding program of crossing Guyana's "Creole" cows with mostly pure-breed Holstein has produced a well-adapted and high-producing herd. Desirable breed characteristics from the "Creole" and the Holstein have been selected for the hybrid to survive on the harsh marshy grazing conditions of the coast.

The "Creole" contributes - disease resistance, heat tolerance and adaptability to harsh grazing environments.

The Holstein contributes - high milk yield, docile temperament.

### Cows:

Selection criteria for cows is based on evaluation of their production and reproduction performance. Also, cows which do not respect the electric fence while grazing have to be removed from the herd.

### Bulls:

Breeding is mostly by natural service and occasionally artificial insemination. The herd consists of one bull and is replaced every three to four years. The decision to replace the bull depends on the following criteria:

- a) Fertility of the bull;
- b) Rate of sexual maturity of replacement heifers related to the bull;
- c) Presence of related replacement heifers or cows on the farm;
- d) The breed of bull required to maintain the herd phenotype within the range of  $3/8$  to  $5/8$  Holstein/"Creole" crosses.

Bull calves born on the farm are not grown for breeding but are sold.

TABLE 1:

7.

ST. STANISLAUS COLLEGE FARM  
SUMMARISED DATA 1983-1992

PARAMETERS	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Total Milk Production (l)*	2,430	16,901	24,331	24,516	31,718	38,588	40,060	42,851	43,966	50,409
Av. Lactation/length/Year	426	232	256	249	236	233	294	290	361	308
Av. Milk/Cow/Lactation (l)	1,215	2,066	2,044	2,199	2,218	2,173	2,626	2,765	3,155	2,948
Av. Milk/Cow/Day (l)	4.5	8.5	7.3	7.8	8.6	9.0	8.8	9.0	9.0	9.7
Av.No.Cows Milked/Day	-	6	9	9	10	11	12	13	13	14
Milk Production/Ha (l)	714	3,930	5,688	5,701	6,219	7,566	7,855	8,402	9,237	10,502
Stocking Rate (A.u /Ha)	1.1	2.7	3.8	4.0	4.8	5.2	5.2	5.8	5.7	5.9
Calving Interval (Days)	-	455	367	360	340	352	368	356	441	374
Open Days	-	158	101	78	72	57	102	103	155	95
Av. No. of Services/Conception	-	1.2	1.1	1.0	1.2	1.0	1.8	1.2	1.9	1.7
Total Animal Units (A.u)**	-	11.5	16.3	17.3	24.3	26.5	26.6	29.0	27.2	28.5

Source: SUPPORTING THE DEVELOPMENT OF LIVESTOCK PRODUCTION SYSTEMS IN GUYANA - IICA PROJECT

\* 1 Liter (l) = 1.7 pts milk  
\*\* 1 animal Unit (A.u) = 800 lb animal