



agriculture & rural development

Department:
agriculture
& rural development
PROVINCE OF KWAZULU-NATAL

SUBSISTENCE DAIRYING IN THE HOT HUMID AREAS OF KWAZULU-NATAL

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Introduction

Why dairying?

- Milk is a highly nutritious product rich in protein. The protein in milk is ideally suited to the correction of the protein deficiency which causes kwashiorkor in children.
- Milking one's own cows provides a cheap source of high quality food for the home.
- Milk surplus to home-needs can be sold to neighbours or passers by.
- The sale of milk can result in a useful income (e.g. 5 litres of milk sold per day @ R2-00 / litre = R10-00 per day or R300 per month).
- Milk will sour naturally for 'storage' purposes. This natural souring also overcomes any lactose intolerance problems.

Milking a few cows by hand will not require any additional labour.

Constraints to dairying

Dairying in tropical and sub-tropical areas has its own unique problems and difficulties. Low milk production and high mortality of recognised dairy breeds is a result of these breeds not being adapted to hot environments, tick borne diseases, nor the low plane of nutrition of the veld. In addition, the incorrect perception among many prospective dairy farmers is that a dairy is of necessity a unit with cooling facilities and milking machines. Furthermore, dairying is perceived to require high producing dairy breeds such as the Jersey and Friesland. As a result of these misconceptions not many prospective dairy farmers feel they have the capital to start even a small dairy.

Hand milking is 'less glamorous' than a dairy with mechanical milk extraction facilities. Nevertheless hand milking offers distinct possibilities for potential dairy farmers. In addition,

the use of adapted cross- bred animals instead of the traditional dairy breeds offers distinct advantages in the hotter humid areas of KwaZulu-Natal.

Trials conducted at the Makhathini Research Station

Aims of the trial

As a result of the low milk production of the Nguni and unadaptability of the recognised dairy breeds to the hotter areas of KwaZulu-Natal, there is a need to identify an alternate animal for milk production. In addition to the requirements of her calf, the cow has to be able to produce at least four litres of milk per day, i.e. the average consumption of a family. To achieve this the Nguni and Jersey were used in a cross breeding programme. These breeds were selected in an attempt to combine the milk production potential of the Jersey with the adaptability and hardiness of the Nguni.

Problems encountered

Initially, milking machines were used to milk the cross-bred cows. This resulted in milk let-down problems, to the extent that cows that had a potential of eight litres of milk per day gave only 100 ml of milk per milking. The reaction of the Nguni's to being milked with milking machines was even worse than that of the cross-bred cows.



Calf at milking to stimulate milk let-down

Procedures adopted

The cross-bred and the Nguni cows were milked once a day by hand. The calf was always with the dam during milking. The milker merely restrained the calf from suckling. This hand milking procedure, with the calf in attendance, resulted in vastly increased milk production i.e. when compared to machine milking. With once-a-day milking the calves are separated from their mothers in the evening and the cows are then milked in the morning. Calves then run with their mother during the day or are kraaled and allowed to suckle again in the evening . This allows the cow to give her full potential of milk in the morning since milk production is greater in the morning than in the evening.

The Nguni cows and calves reacted well to this once-a-day milking and provided up to 4.4 litres of milk per day for lactation periods of 128 days. This production was in addition to milk required to rear her calf. The cross-bred cows indicated a potential to produce more

milk (approximately 6 litres/cow/day) and have longer lactation periods than the Nguni's. This led to initiating a twice a day milking regime with restricted suckling by the calf.

With twice a day milking and restricted suckling, the calf is allowed to suckle for one hour after milking (i.e. two hours a day). This resulted in a marked increase in milk production. However, with restricted suckling it is vitally important to monitor the growth of the calf. Cognizance must be taken of the competition that exists between milking the cow and the calf's needs. It has been found that calves from low milk producing dams had to be fed additional feed to maintain their growth rates.

With restricted suckling, or once a day milking, it is critical that the cow does not calve down while lactating. Calving down while lactating will result in an extremely short following lactation period with very low levels of milk production. It is vitally important that the farmer controls the date of re-conception of lactating cows. Furthermore, it is important to ensure that the lactation period does not exceed 300 days.

Advantages of restricted suckling and once-a-day milking

- The calf adapts rapidly to its environment.
- There are no calf rearing costs such as milk replacers and calf feeds.
- The presence of the calf at milking stimulates milk let down.
- The farmer is in daily contact with his animals and can identify and treat diseases immediately.
- The presence of the calf at milking allows for critical appraisal of the calf's condition and the need to apply corrective measures.
- Suckling by the calf restricts the occurrence of mastitis among the cows.
- It is inexpensive to start dairying with this system as there is no need for infrastructure, buildings or machines.

Illiterate farmers can 'keep records' by observing. For example the growth of the calf provides a good indication of the stage of lactation of the cow and when the cow should go to the bull.

Practical Considerations

- The number of cows kept will depend largely on the availability of veld. It must be remembered that Nguni and Nguni cross animals browse fairly extensively, particularly during periods of drought. Trees and shrubs thus form an important component of the animal's diet. Under the semi-arid conditions in Zululand a ratio of 4 to 5 hectares of veld for each animal unit (450 kg) is regarded as adequate for 12 months.
- Another consideration relating to the number of animals kept is the number of cows the farmer can hand milk. Hand milking is time consuming, especially with twice-a-day milking. It is also important to identify the time required to handle the calves. This is in view of the fact that calves should be grouped according to age and size to

prevent competition between the different age/size groups. It is suggested that a maximum of ten cows in milk could be handled by a farmer.



Calf suckling after milking