

FEATURES

- The newborn calf
- Feeding and housing the calf
- Calf diarrhoea
- Calf pneumonia

DISEASES OF CALVES

Successful calf raising is the result of good housing, good hygiene, and constant attention to the detail involved in calf feeding. The application of these principles will save the farmer time, money and the loss of good genetic material.

The newborn calf

As soon as a calf is born one must ensure that its nose is not blocked with membranes and mucous which can prevent it breathing. If there is fluid in the lungs the calf should be picked up and gently swung with its head facing towards the ground, which will dislodge the fluid. The calf must be dried, placed on dry bedding in a place where it is protected from drafts. Colostrum must be given as soon as possible because it contains antibodies which will protect against diseases for 3-6 weeks until it has had time to develop its own antibodies. The colostrum must be given within the first 24 hours of life, divided up as 3 to 4 feeds. Do not allow the calf to stay with the cow and hope that feeding will take place. Modern dairy cows' udders are not ideal for feeding calves and the caretaker cannot evaluate whether the calf has had enough colostrum or not (5% of total bodyweight per feeding). Leaving the calf with the cow

will also allow a bond to develop which will later stress both when the calf is removed.

Colostrum can be collected and stored in a freezer for calf feeding. It must never be thawed in hot water as this will damage the antibodies and may burn the calf. The colostrum must be at the same temperature as milk feeds (see later). Don't give any other feed before the colostrum feed because this will inhibit the antibody uptake.

Photo 1: Diarrhoea whether of nutritional or infectious origin is the most important cause of calf deaths. (Schering Plough Animal Health)



Feeding the calf

The most common problem of dairy calves is diarrhoea of nutritional origin, either due to poor quality feed or poor feeding techniques. Calves must rather be fed more often than overfed in a single feeding. The ideal is to have the total daily intake divided into two feeds (8-10% of body weight every day). The temperature of the milk/milk replacer must be a constant 37-39°C. The best quality milk replacers are made from whole milk and can be given to calves as early as 4 days after birth, when colostrum feeding is completed. Be aware that milk replacers contain less fat than whole milk so calves will grow slower than those on whole milk. Milk replacers must be made up strictly according to the directions of the manufacturers, as making milk up under- or over-strength will cause problems.

Housing

Experts agree that calf raising units should contain separate calf pens or huts. This is more hygienic than grouping calves together and allows better monitoring of individual calves. Young calves are sensitive to cold and draughts and bedding must always

be dry. Poor ventilation will also cause problems, and is one of the predisposing factors for calf pneumonia.

Publications on calf housing can be obtained at agricultural colleges or the Agricultural Engineering Department of the ARC. See the webpage www.arc.agric.za/institutes/ili/main.

Photo 2: Calves should be housed separately on clean dry bedding and protected from draughts (Schering Plough Animal Health)



Hygiene

Good hygiene is absolutely essential in calf raising units. This includes the regular cleaning of pens and huts to remove manure, the disinfection and drying of the pens. Clean dry bedding must be provided to keep them clean and warm. The meticulous washing of buckets and water pails is essential and if bottle feeding is done the bottles and teats must be cleaned and then sterilise with an appropriate solution e.g. Milton because

washing alone will not remove bacteria from the nooks and crannies.

Calf diarrhoea (scours)

Apart from the role of milk replacers and feeding techniques, infectious agents can also cause diarrhoea in calves. It is important to be able to distinguish the different syndromes so that the correct control measures can be applied.

Colibacillosis

Colibacillosis is the most important infectious cause of diarrhoea and death in newborn calves (1-7 days). The cause is a group of gut bacteria *E. coli* which will begin to colonise the calf almost immediately after birth. Certain *E. coli* strains can cause septicaemia (blood poisoning) resulting in acute death, while others cause diarrhoea. The enteric or diarrhoea strains cause fever, depression and diarrhoea, followed by rapid dehydration and refusal to drink. When the dehydration is advanced the calf will be too weak to stand and will die soon if it is not given fluid intravenously. Primary *E. coli* infections occur only in the first week of life so the control is to vaccinate the

cows with an *E.coli* vaccine which contains cattle strains. The calf will then receive specific antibodies through the colostrum. Cows must initially be vaccinated twice and thereafter with an annual booster 4 weeks before calving to ensure optimal levels of antibodies are shed in the colostrum.

Photo 3: A calf with colibacillosis - note the rough hair coat and the soiled tail. (Schering Plough Animal Health)



Paratyphoid or Salmonellosis

This condition usually occurs in older calves of 4-6 weeks of age. *Salmonella* bacteria can either cause an acute septicaemia and rapid death or diarrhoea which is sometimes bloody. Fluid and antibiotic administration will be necessary to prevent losses. Calves must be vaccinated with the live salmonella vaccine at 14 days of age to prevent the condition.

Viral diarrhoea

Rota and corona viruses are widespread in cattle in South Africa. They usually cause di-

arrhoea in young calves when hygiene is not up to standard because this usually leads to a build up of virus. Nutritional stress will contribute to the problem and control is therefore good feeding practices and hygiene

Coccidiosis

Calves can develop coccidiosis between the age of 3 weeks to 6 months. Chronic watery to bloody diarrhoea may be seen and the calf will gradually lose condition. Specific treatment with an anticoccidial such as Ecosulf LA or Sulphamethazine preparation will be necessary.

Treatment of diarrhoea

As soon as calves show signs of refusing food and scouring they must be rehydrated; an early sign of dehydration is the delayed skin fold return (a fold of skin is grasped between the fingers - if dehydrated the skin fold takes some time to return to its normal position). Later the eyes become sunken and the calf is too weak to rise. Mild dehydration can be treated by giving electrolytes by mouth but more severe cases must be treated by a veterinarian with intravenous fluid administration. Antibiotic treatment will be needed for cases of paratyphoid or coccidiosis.

Prevention of calf diarrhoea

To prevent calf diarrhoea the manager must focus on the rapid administration of colostrum in sufficient quantities, the meticulous implementation of the correct feeding pro-

cedures (temperature and quantity), quality milk replacers or whole milk and stringent hygiene. The prophylactic feeding of lactobacillus-containing products or those containing bacterial sugars which block the attachment of pathogenic bacteria (Calf Booster) can be used as aids in prevention of calf diarrhoea.

Vaccination against the various diseases is also an important method of preventing calf diarrhoea.

Pneumonia in calves

After diarrhoea, this is the second most important condition of hand-raised calves. It occurs around 40-50 days of age, when the colostrum immunity obtained from the cow is beginning to fall and the calf becomes susceptible to organisms that cause respiratory conditions. There is a wide range of organisms that can cause respiratory disease - parainfluenza 3, BVD virus, IBR virus, BRS virus and *Pasteurella haemolytica*. It is especially calves housed in badly designed houses where ventilation and hygiene are poor and humidity is high, that develop problems. Other factors can be too early weaning onto solid diet, mixing with older calves, or overfeeding which leads to frequent urination and permanently damp bedding.

Calves developing pneumonia initially show a watery nasal discharge, which later becomes yellow, a dry cough, open mouth breathing, fever and sometimes diarrhoea. Most cases are acute but calves that survive with treatment are often stunted and cannot be used as replacement heifers.

*Photo 4: A calf with severe pneumonia
(Schering Plough Animal Health)*



Treatment

Sick calves must be immediately placed in dry sunny positions, and must be treated as soon as possible with suitable antibiotics like Ecomycin LA, Ecomycin Dual Purpose, Econotet 125, Ecosulf LA. In advanced cases fluid administration may be needed.

Prevention of pneumonia

Combination vaccines which contain a broad spectrum of respiratory organisms for example Jen-cine 4 (Schering Plough Animal Health) can be given at 35 days and repeated at 60 days old. It must be stressed that vaccination will not be successful if predisposing factors are not eliminated.

Dr Pamela Hunter