



Rochester Veterinary Practice, 72 Lowry Street Rochester 3561, Phone (03) 54842255 [admin@rochyvet.com.au](mailto:admin@rochyvet.com.au)

## Rearing the “Teat/Bottle” Fed Calf

Rearing a “teat/bottle” fed calf can be a challenging but rewarding experience. To make it a success and rewarding experience the main aims are:

- Keep the calf in a comfortable environment
- Provide adequate nutrition
- Keep the calf healthy



Reasons a calf may need to be reared off the cow include:

- The calf has been rejected by its mother
- The calf’s mother has died
- The calf’s mother is a dairy cow (most calves are reared off the cows in dairy production systems).

### ***The orphaned calf***

Orphaned calves have a greater risk of death due to dehydration, hypothermia, scouring and inadequate colostrum intake. Therefore, early intervention and care is required to increase the likelihood of calf survival.

### **Colostrum**

Colostrum is the first milk that a cow produces once she has calved. Colostrum is important to provide passive transfer of immunity (antibodies) to help prevent disease. It is essential to feed a calf high-quality colostrum (Brix 22% or greater) within the first 24 hours of life. A rough rule of thumb is to feed 3L of high-quality colostrum in the first 12 hours of life and then repeat this in the next 12 hours of life.

Colostrum may be sourced from the calf’s mother, another cow or from a stored supply (refrigerated or frozen source) of colostrum.

Colostrum should be warmed up to approximately 36°C. This can be done by placing the colostrum container in a bucket/sink of warm water (never microwave colostrum as this denatures the antibodies in the colostrum).

If the calf will not voluntarily drink the colostrum from a teat, the calf may need to be “tubed” with an oesophageal tuber.

### **The environment to rear a calf in**

Calves should be reared in a sheltered environment, such as a pen in a shed, to protect them from the elements. Pen size should be at least 2m<sup>2</sup> per calf. The shed should not have any cold draughts at calf level and should be well ventilated to prevent build up of odours and ammonia, as these factors can contribute to sickness and respiratory disease.

On cold days it may be worth putting calf coats on young or sick calves to prevent hypothermia.

Commonly used bedding materials include straw, wood chips, rice hulls and almond hulls. The bedding should be deep enough to remain dry after being soiled and deep enough to allow the calf to nestle down in it to keep warm. A good depth is 30cm. Regular topping up of bedding is often required.

If possible, it is a good idea to allow the calves access to the water and feed troughs through the side of the pen (i.e., having enough space for the calves to put their head through the side of the pen to access the troughs but not enough to escape). By having this set up, it reduces the risk of the calves urinating or defaecating in their water and feed.

If the calves are healthy and are still provided with shelter, they may have access to a paddock from about 3 weeks of age.

### How to teach a calf to drink

Teat feeding is preferred to bucket feeding as it allows the expression of a natural suckling behaviour as well as the action of suckling stimulates the oesophageal groove to direct milk into abomasum. Suckling also stimulates saliva production which aids in the digestion of milk. Some calves that drink from a bucket are more likely to develop bloat issues.

To train a calf to drink, start by dipping your gloved fingers in the warm milk, allow the calf to suckle your finger and gently direct the calf to teat to suckle.

This may take some time of the calf to learn. Anecdotally, there have been some calves that have taken 3 weeks to adjust to feeding from the teat.

The key is to be patient, calm and try not to upset the calf. If needed, take a break and come back to the calf in an hour or so to try again. All healthy calves will eventually start drinking.

### What milk to feed.... Whole cow's milk or Calf Milk Replacer (CMR)

Both whole milk and calf milk replacers are acceptable to rear calves on. Whole cow's milk may not be readily available. Therefore, it is more common practice to rear calves on a calf milk replacer. There are several commercially available calf milk replacers available at agricultural stores. These products are similar in their protein% (22-25%) and fat% (20-22%).

Below is an example commercial calf milk powder feeding regime:

Commercial Milk Powders	CMR Powder Mixing Rate	Day 2-7 of life	Day 8-21 of life	Day 22 of life to weaning
25%Protein 20%Fat	125g/l	125g/L 2L twice daily	125g/L 2.5L twice daily	125g/l 3L twice daily

### How much milk to feed a calf

All calf milk replacers should be reconstituted and fed as directed by the manufacturers label.

If feeding whole milk, a rough guide is to feed 10% of the calf's body weight of milk per day. For example, a 40kg calf should be fed at least 4L of whole milk per day. It is common practice to feed the calf two milk feeds per day for the first two weeks of life.

After the first couple weeks of life, some people decide to feed the daily volume of milk a calf needs in a single feed.

When feeding new calves or weak calves, start with smaller volumes such as 1L of milk, 4 times a day for the first 24–48 hours and work up to 2L twice a day.

### **Tips when feeding milk**

- Calves like consistency.... be consistent with the volume of milk fed, timing of feeds and temperature of milk being fed.
- The ideal temperature to feed milk to calves is between 35°C and 38°C.
- Do not suddenly change the quantity of milk being fed. Make gradual changes.
- Always provide clean fresh water.
- It is essential to practice good hygiene at all times whilst rearing calves. Thoroughly clean all feeding equipment after each feed to remove fat and protein residues. Hot water with a soap or detergent will aid in removing the milk residues. Make sure the equipment is rinsed to remove any soap or disinfectant prior to feeding the next milk feed.
- Replace any damage teat as damage teats are harder to clean and can leak milk.

### **Other feed sources**

As calves grow, they will either need to be supplied with greater volumes of milk to meet their growth needs or alternatively be offered solid feeds such as calf pellets/ grain mix (high in energy (at least 12MJ ME/kg) and protein (over 16%) and low in roughage (less than 15%)) and good quality hay.

These solid feeds can be offered to the calves in the first week of life. It is a good idea to make these solids feeds available to calves all the time in a trough or bucket in the pen. They will not be consuming much to contribute to their energy needs at an early age, but they are naturally inquisitive animals and will investigate these feeds by muzzling and tasting it. The calves will get use to the texture of the solid feeds and their intake will increase.

Offering solid feeds stimulate rumen activity and it is aimed to have a rumen that functioning well by 10–12 weeks of age.

Access to pasture is encouraged at three weeks of age. At this age a calf should be able to digest small amounts of young green pasture.

### **Weaning off milk**

Calves may be weaned successfully at a young age (as early as 5 weeks). However, providing milk up to 10-12 weeks of age often gives the calf the best start.

Weaning should be based on concentrate (pellets/grain mix) consumption NOT age. Calves should be consuming at least 1-1.5kg of concentrate (pellets/grain mix) per day for at least 3 consecutive days before weaning.

The weaning process can be carried out either abruptly or gradually by reducing the amount of milk fed over a week period. Weaning is a stressful event for calves and a gradual process maybe less stressful.

Young calves need a diet of 18–20% crude protein with high energy levels of about 11–12MJ. Depending on the quality of the pasture the calves are weaned on, supplementary hay and concentrates may be needed until the calf is at least 120kg liveweight to meet their energy demands.

It is essential to monitor the calves after weaning to ensure they are still gaining weight and free of disease issues.

### **Sickness in calves**

One of the most common causes in sickness in calves is diarrhoea (scours). Diarrhoea can lead to dehydration and death. Therefore, prompt hydration therapy and treatment is recommended.

**Veterinary advice should be sought on how to manage calves with diarrhoea.**

There are several causes of diarrhoea in calves, which include infectious and non-infectious causes. The gross appearance of the diarrhoea does not allow you to determine the cause of diarrhoea. Calf side diagnostic test or faecal cultures are usually required to obtain a diagnosis.

Infectious causes of diarrhoea include Rotavirus, Coronavirus, Escherichia coli (E. coli), Cryptosporidium parvum (Crypto), Clostridium perfringens, Giardia and Salmonella.

Non-infectious causes of diarrhoea are usually associated with a change in nutrition (for example a change from whole milk to a calf milk replacer or an increase in volume being fed).