

# Care of orphaned calves

When calves are orphaned within a few days of birth, they require urgent and specific care. This Agnote outlines the requirements and common problems encountered in raising orphaned or 'poddy' calves from birth.

Orphans often show signs of dehydration, depression, reduced appetite and stress, and are susceptible to predation by wild dogs and large birds of prey. Treatment provided during the first 3 days of life is the most critical to the survival of a newborn calf. If an orphan has not received colostrum from the mother, it is necessary to provide a substitute as quickly as possible.

To begin, check the calf for injuries (particularly, dog bite marks), hydration status and signs of infection. Pay particular attention to examining the area around the umbilical cord for swelling, oozing or redness. Prior to providing colostrum, orphans should be rehydrated using electrolyte solution if necessary, and body temperature checked. Warm hypothermic (very cold) calves using blankets. Cool overheated calves to normal temperature (38.5 to 39.2°C) using cold running water. Consult your local veterinarian or livestock biosecurity officer if you need help to assess the hydration of a calf.

Calves that are severely depressed owing to low blood sugar lose their suckling reflex and may not swallow efficiently. It is important not to force liquids down the throat if the calf is not actively suckling, as there is a risk of fluid inhalation into the lungs.

Colostrum is the first milk produced by all mammals for their young. Colostrum contains immunoglobulins (also known as antibodies) that newborn animals absorb rapidly from the intestine into the bloodstream, where they form the first line of immunity to infection, while the animal's own immune system develops. This is known as passive immunity. Calves that do not receive colostrum within 36 hours of birth will have reduced immunity for several months and will be highly susceptible to disease. Colostrum is produced by the cow and is absorbed by the calf for 36 hours after birth. Regular milk is produced after three to four days. At this time, the cells that absorb immunoglobulins die off and fall from the gut wall, so feeding colostrum to a calf that is older than three days, will not provide any benefit.

## Where to get colostrum

In regions with dairy farms, colostrum is collected from milkers and kept frozen for emergency use. In the Territory, colostrum can be purchased from veterinary clinics and animal feed suppliers as a dried milk product. Make up colostrum with cooled, boiled water, and feed using a bottle and teat, or a calf stomach drenching apparatus.

## How to teach a calf to drink

A small amount of honey, smeared on an index finger and introduced into the calf's mouth, will encourage it to suck. If the calf has a strong suck response, it is safe to introduce a bottle and teat. To train a calf to drink, back it into a corner, stand astride the neck and place a finger dipped with milk into its mouth. When it starts to suck, replace your finger with the teat, and tilt the bottle so that milk can flow out freely. Resist the urge to squeeze the bottle. Allow the fluids to flow as the calf sucks at its own pace. If the calf does not respond, seek veterinary advice.

Bottle-feeding, or using teats attached to a 'calfeteria' for multiple calves, is preferable to training calves to drink from a bucket in the early weeks. Cows have 4 stomachs but, at birth, only the fourth stomach is functional (the abomasum). Sucking from a teat positioned above the head mimics the natural process of feeding from the cow. This triggers a reflex in the forestomachs so that they close into a groove that

directs the milk straight into the abomasum for efficient digestion. Drinking from a bucket on the ground may fail to trigger this reflex. Milk pools in the rumen instead where it ferments, resulting in bacterial overgrowth and scouring.

Calves should be exclusively fed colostrum, warmed to 36°C, offered twice daily (up to 2L per feed), until they are 3 days old. After this, they can be fed solely on whole milk or milk replacers until the rumen develops to a stage where it can digest solids. Calves should have access to hay and calf pellets from around one week of age. However, they should continue to have milk until they are 10 to 12 weeks of age, by which time the rumen is fully functioning.

## Common illnesses – causes and preventative measures

Newborn animals have no active immune system and rely entirely on the passive immunity passed on through colostrum. The antibodies acquired from colostrum provide protection for around the first 6 weeks of life. Colostrum-deprived calves commonly die from one of the following causes.

### Scours

Calves with scours produce liquid faeces with a foul smell. They are generally depressed, reluctant to eat or drink and dehydrate rapidly. Nutritional scours may result from over-feeding milk, feeding milk that is too dilute or too concentrated, incorrect milk temperature or erratic feeding regimes. Viruses (*Rotavirus* and *Coronavirus*), bacteria (*Salmonella sp* and *E.coli*) and protozoa (*Coccidia* and *Cryptosporidia*) may cause infectious scours.

### Pneumonia

Pneumonia involves infection and inflammation of the lungs. Calves with pneumonia may breathe rapidly, wheeze, cough and have nasal discharge. Calves that are force-fed fluids commonly develop pneumonia after inhaling milk or electrolyte solution into the lungs. Never squeeze bottles, or pour liquids into the mouths of calves that cannot suckle.

### Umbilical (navel) infection

Naval infections may result from birth in unhygienic conditions, but colostrum-deprived orphans are more susceptible to infection from a range of sources. The area around the umbilical cord may be swollen, painful to touch and may ooze pus. Infection through the umbilical cord can lead to life-threatening conditions including septicaemia (also known as blood poisoning), joint infection and meningitis (infection in the lining of the brain and spinal cord). Prevent umbilical infections by applying disinfectant to the cord area several times each day, until the cord is dry and hard, and the umbilical stump is closed. Orphans with established navel infections will need veterinary care.

## How to avoid disease

Hygiene is the most important factor in keeping hand-reared orphans healthy. Clean feeding equipment thoroughly using hot water and detergent, then rinse and dry between uses, so that bacteria cannot grow. Sick calves should be isolated from healthy ones, especially if they are scouring. Take scouring calves off milk, and feed electrolytes mixed with cooled, boiled water, every three to four hours for at least 12 hours. Private veterinarians provide consultations, advice and medications including electrolyte solutions.

Healthy calves need to have contact with other healthy animals. This is how they pick up the normal, 'good' organisms (bacteria and protozoa) to populate the rumen, so they can begin to digest grass and hay. These organisms normally pass to calves from their mothers, through grazing common ground and licking one another.

Keep bedding clean and remove the bulk of faeces from the calf pen. Supply clean water at all times, as calves will begin to drink from one to two weeks of age.

## Feeding requirements

Milk replacers should contain at least 20% protein and 10% fat (most commercial preparations contain far more), and must be made up and fed according to the manufacturer's instructions. Calf milk powders are widely available at rural feed merchandise stores across the NT. A rough guide to feed requirements is 10% of the calf body weight per day, so a 25kg calf would require 2.5L per day, split across feeds. The most accurate way to establish body weight is to weigh the calf using scales. However, this may not be possible for people on small rural blocks who do not own animal scales. An alternative is to use a measuring system to estimate the weight of the calf:

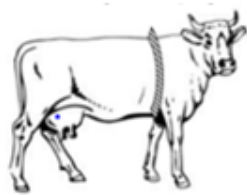
Figure 1: How to estimate the weight of a calf or cow

Girth (cm)	Weight (kg)
65	35
70	40
75	45
80	50
85	59
90	69
95	79
100	89
105	104
110	119
115	135
120	150
125	170
130	190
135	210
140	230
145	251

**What you need:** a measuring tape or rope



**How to measure:** Place the measuring tape or rope around the cow or calf, just behind the shoulders, and pull it snug but not too tight (see picture below).



Read the measurement on the tape in centimetres (cm) and compare to the table on the left. If using a rope, tie a knot in the rope and measure against a ruler.

Very young or weak calves can be fed 4 to 5 times per day for the first 2 to 3 days. Start with 250ml per feed for a newborn calf, and gradually increase the volume each time, but do not suddenly change the volume or the frequency of feeding. Milk is best digested if it is warmed to body temperature (35 to 38°C), but can be fed cold (from the fridge) if it is not possible or practical to feed warmed milk. After a week, feeding frequency can be gradually reduced to once or twice daily.

Provide milk to calves for a minimum of 4 weeks and offer solid foods from one week of age. Calves can be weaned at 4 weeks, but providing milk up to 12 weeks of age, in addition to grazing, hay and calf starter pellets, is recommended for better growth rates.

Calf starter pellets are also widely available at rural feed stores. Many calf rations have the antibiotic monensin added, for the control of *Coccidia*, a common cause of scouring in young cattle. It is important to note that high doses of monensin are toxic to calves, and to be aware that monensin is highly toxic to horses. Take particular care to store calf and weaner pellets separately to horse feeds to avoid accidental poisoning.

Image: Farmers Helping Farmers, Dr John VanLeeuwen 2012

More information on calf feeding and rearing can be found at [Future Beef](#)

## Other husbandry for calves

Recommendations for routine husbandry procedures are described in [Agnote J83: Dehorning and Castration of Calves under Six Months of Age](#)

Under the NT Livestock Regulations Section 32(1), all owners of properties with livestock are required to have a [Property Identification Code](#), even if they keep a single animal (including a single hand-reared calf).

## Livestock Biosecurity Branch contact details

### Darwin Region

Veterinary Officer

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Regional Livestock Biosecurity Officer

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### Katherine Region

Veterinary Officer

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Regional Livestock Biosecurity Officer

P: 08 8973 9767, M: 0467 740 233

Livestock Biosecurity Officer

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### Tennant Creek Region

Principal Livestock Biosecurity Officer

P: 08 8962 4458, M: 0401 113 445

Regional Livestock Biosecurity Officer

P: 08 8962 4492, M: 0457 517 347

### Alice Springs Region

Veterinary Officer

P: 08 8951 8181, M: 0401 118 181

Regional Livestock Biosecurity Officer

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