CHAPTER 10
Options for young stock management

Young stock need careful management during droughts for the benefit of young cattle and for cow health and productivity. Options for managing young stock are outlined in this chapter.

Key messages

- **Early weaning can provide significant feed cost savings.**
- **Creep feeding enables supplementation of calves while still suckling their mothers.**

Early weaning of beef calves

Early weaning is a strategy to consider to deal with a feed and water shortage. If you plan to feed grain to early-weaned calves, you should review the information in Chapter 7.

Key reasons for early weaning

Maintain herd fertility

Early weaning helps maintain cow fat score and fertility of the breeding herd during and after a drought. For example, weaning spring-calving herds before cows fall below fat score of 3 will mean they only need maintaining to calving for acceptable post-calving return (interval) to oestrus and conception rate. Cows down in condition are more likely to cycle and conceive sooner after calving if the calves are weaned prior to joining. See Chapter 4 for additional information on cow condition and the impact on cycling.

Save your pasture

It is more efficient to convert feed directly into calf weight than milk for a cow and calf unit. Providing the appropriate quality and quantity of feed to dry cows and weaned calves, rather than cows with calves at foot, can significantly reduce feeding costs.

For example, a 500 kg liveweight cow, with a 7-month-old (240 kg liveweight) calf at foot would require 150 MJ ME/day. If the feed they were consuming had an energy value of 9 MJ ME/kgDM, as a 'unit' they would require (150 MJ ME ÷ 9 MJ ME/kgDM) 16.7 kg dry matter of that feed.

If the calf was early weaned, the cow's energy requirement returns to maintenance. For the 500 kg cow, that means she would only require 55 MJ ME/day or (55 MJ ME ÷ 9 MJ ME/kgDM) 6.1 kgDM of the feed.

The calf needs to continue to grow, so if its energy requirement is budgeted for 0.5 kg liveweight growth/day, the 240 kg calf would require 49.3 MJ ME/day or (49.3 MJ ME ÷ 9 MJ ME/kgDM) 5.5 kgDM of the feed.

So, instead of the 16.7 kgDM, they would require as a cow/calf unit, the total for feeding them separately becomes 11.6 kgDM (6.1 kgDM for the cow and 5.5 kgDM for the weaned calf), a saving of 5.5 kgDM/day.

For a mob of 100 cows and calves, this becomes a feed savings of 550 kgDM/day.

Cows that have had their calves weaned early can be shifted to more marginal country so only growing stock is run in the best paddocks.

Cows will need less feeding later on because they will have lower weight loss once calves are weaned.

See Chapter 6 and Appendix II for additional information on the energy and protein requirements of cattle.

Better utilise supplementary feed

Early weaning will enable better allocation of supplements to different classes of animals. By weaning the calf early, the cow returns to maintenance requirement energy levels. This separation can provide a 30% saving in energy across the farm, as seen above.

High energy and protein feeds can be fed to young growing stock and lower quality feeds (i.e. poorer quality hay) to the dry cows. This will reduce the overall cost of supplements during the drought.

Save water

Early weaning can reduce water requirements of cows by up to 60%. Lactating cows require up to 100 litres/day. Although a calf's water intake approximately doubles when it is weaned and no longer getting liquid via its mother's milk, there is a significant net saving in water from early weaning.

Sell cull females earlier

Early weaning will enable earlier sale of non-productive, cull or aged animals.

Deciding when to wean

Cow condition is a major consideration when deciding when to wean. Wean early in order to maintain cow herd productivity.

The appearance of calves should be considered. Calves with dry, coarse coats (woody calves) are almost certainly not receiving adequate milk from their mothers. Early weaning is the best policy in this situation. Calves with glossy coats are receiving an adequate diet and early weaning can be delayed.

In most cases, it is preferable to wean calves at 12 weeks or around 120 kg because they will then require less protein and be easier to feed. However, calves can be weaned onto high-quality dry rations at five weeks of age or around 50 kg.

If cow survival is of concern, calves can be weaned earlier than this, but a milk replacer will be required if calves aren't going to be sold as bobby calves.

In a drought, all calves older than 5-6 months should certainly be weaned and fed separately.

Pre-weaning

Expose calves to the post-weaning supplement while they are still on the cow. For example, if calves are going to be given silage post-weaning, feed silage to the cow-calf mobs a few times.

Rumen microbial populations can require up to 14 days to completely adapt to a new diet. Consider introducing calves to post-weaning supplements slowly via creep-feeding two weeks before weaning.

Weaning

Avoid combining stressful procedures like castration and dehorning with early weaning.

If yard weaning, where possible keep the yards damp to minimise pink-eye. Fly traps and backline insecticides will also reduce flies, a vector for the disease. Eye ointments and patches of heavy material will provide relief for affected calves and prevent fly access.

When penning calves, allow at least 4 m^2/calf, increasing to 6-8 m^2 for calves approaching 150 kg.

Provide high-quality hay, such as lucerne hay, and clean water troughs.

The high-quality ration required by early-weaned calves will increase their risk of developing pulpy kidney so vaccination for clostridial diseases is important.

Post-weaning

Post-weaning nutrition

The younger the weaning age of the calf, the higher its energy and protein requirements.

The energy and protein requirements of calves at various growth rates are presented in Table 10.1. Some possible diets for early-weaned calves are shown in Table 10.2.

Unless the feed has adequate energy density, feed intake and animal performance may be restricted by small rumen capacity. Much of the pasture hay and silage made in Australia is by itself unsuitable for early-weaned calves.

Introduce any concentrate (e.g. grains) slowly. Introduce it initially to calves at 300 g/head/day and increase the amount by 100 g/head/day with access to hay. Supplement the mix with a buffer to prevent acidosis.

Insufficient protein in the ration of early-weaned calves will result in short, dumpy cattle. Likely sources of protein to use are lupin grain, peas, linseed meal, canola meal and soybean meal.

Ideally, roughage should be chopped and mixed with the other components of the calves' diet before feeding. Palatability is important to get calves to eat sufficient fibre. Consider adding a sweetener such as molasses or grape marc to a mixed ration for young calves.

Calcium is the mineral most likely to be needed in a diet for calves. Generally, calcium carbonate (such as ground limestone) should be added to a grain-based diet at the rate of 1½ parts per 100 (1.5%) by weight of the grain in the diet.

Although good-quality roughage (lucerne or clover hay) provides a reasonable supply of Vitamin A, some supplementary Vitamin A is usually necessary for early-weaned calves if they only have access to a dry ration and have not had access to green pasture for some time (e.g. three months).

This can be included in the feed, given orally or by injection. Alternatively, complete rations in the form of pellets are available from commercial suppliers.

Post-weaning management

Rather than letting calves roam barren paddocks, consider weaning into containment areas where they will tend to rest and feed, conserve energy and minimise damage to paddocks.

Six weeks after weaning, draft off tail-enders into a separate management group. Repeat this process four months after weaning.

Post-weaning health program

Administer a booster 5-in-1 or 7-in-1 vaccination.

Young calves are vulnerable to worms and so a worm management program is particularly important.

Table 10.1: Energy and protein requirements of calves of various liveweights.

Liveweight (kg)	Growth rate (kg/day)	Maximum daily % of liveweight	Dry matter intake (kg)	Metabolisable energy (ME) requirement (MJ ME/day)	Crude protein % of dietary dry matter
50	0	3.2	1.6	14	12
	0.5	3.2	1.6	23	18
100	0	3.0	3.0	18	10
	0.5	3.0	3.0	29	16
150	0	2.9	4.3	22	8
	0.5	2.9	4.3	37	12
	1.0	2.8	4.3	48	13
200	0	2.8	5.5	26	8
	0.5	2.8	5.5	44	11
	1.0	2.8	5.5	57	13

Creep feeding of beef calves

Creep feeding is a useful management practice that enables supplementation of calves while still suckling on their mothers. Creep feeding allows unweaned calves to be fed a supplement that is not accessible to the cows.

The creep enclosure or creep gateway

Creep feeding simply involves a barrier that blocks adult cattle, but allows calves to pass through and gain access to better nutrition than is available on the other side of the barrier.

The better nutrition can be in the form of grain or pellets and some hay available in troughs or self-feeders. Alternatively, the creep may allow calves access to better quality grazing, such as a lucerne stand or irrigated pasture.

Whether the creep feeding allows calves into an enclosure or through into an adjacent paddock, the critical factor is the width of the creep openings that allow the calves, but not the cows, to pass through. See Figures 10.1 and 10.2 for creep enclosure examples.

The openings should be 400-450 mm wide. Ideally, these vertical spacings should be adjustable and there should be a number of them.

A gate frame about one metre high, with several adjustable openings, is the most practical arrangement as it can be used either as the entrance to a creep enclosure or in a gateway that allows calves access to more nutritious grazing.

Table 10.2: Example diets for early-weaned calves.

Diet A	%	Diet B	%
Barley*	55	Wheat*	65
Lupins	25	Linseed meal	15
Hay	20	Lucerne hay	20

** Plus calcium and a 'buffer'.*

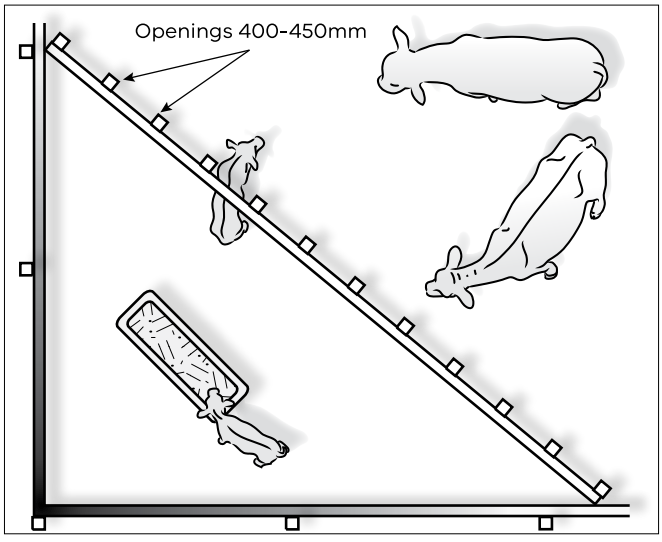

Figure 10.1: Semi-permanent creep in a paddock corner for supplementary feeding of calves (aerial view).

Feeders

A wide range of self-feeders are available for the feeding of grain, pellets or hay. Alternatively, the feed in the creep can be fed out in troughs. Feeding on the ground will result in considerable wastage.

The best self-feeders are covered and protect the feed from rain. Self-feeders that have an adjustment on the opening between the hopper and the feeding tray also have advantages.

This adjustment enables some control over daily rates of consumption, which can be particularly important in the introductory feeding period. However, be aware these block up regularly and will need daily scraping to keep the feed flowing.

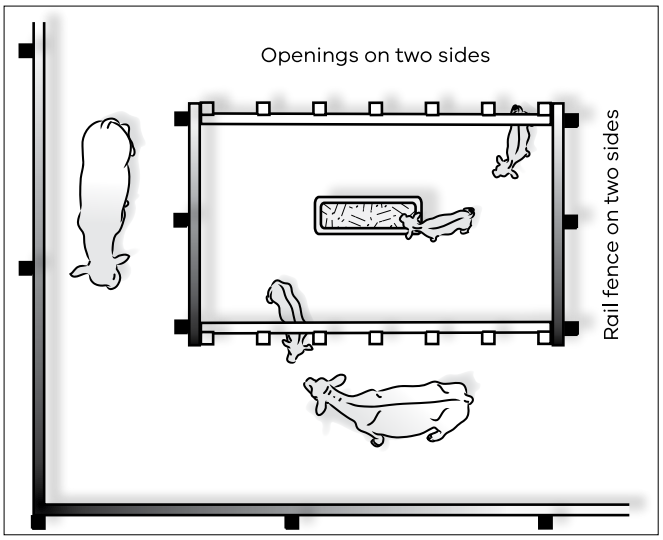

Figure 10.2: A permanent calf creep is useful where a concentrate ration is fed to calves. The trough should be covered to prevent rain damaging the feed.

The type and level of feed

Deciding which feed to use should be based on price, availability and convenience. The choices include oats, barley, wheat, triticale, maize, lupins, peas, pellets or a combination of some of these.

Pellets are a convenient and flexible concentrate to feed and are available with a range of protein levels to suit the particular animals being fed and the pasture available at the time. Calves have high protein requirements.

Oats are the safest cereal grain to feed. All other grains should be coarsely rolled before feeding to improve their digestibility.

To get the calves used to entering the creep, feed hay only for the first few days – up to a week if need be. Make sure all calves are using the creep.

Start feeding concentrates (grain or pellets) at a level of 250 g/calf/day. When most of the calves are feeding in the creep, increase the level of concentrate by 250 g every second or third day. The upper level of feeding will depend on paddock conditions and the weight of the calves but it should be around 2 kg/calf/day.

Alternatively, cows and calves can be fed small quantities of grain or pellets in the paddock. In this way, the mothers will train their calves to eat the grain. After a couple of weeks the creep system can be put in place and the cows excluded.