

Creep feeding lambs

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Introduction

Lambing in drought years is certainly a challenge. Ewes often reach lambing in low fat score (below 2) conditions, and while they are often fed large quantities of supplements, they still fail to produce sufficient milk to achieve good lamb growth. Under these circumstances lambs will be very lightweight at weaning and their survival rates and performance post-weaning will be compromised. In drought conditions, the ewes also compete much better on the feed trail, thus leaving only small quantities of supplement for the lambs to eat.

What we want is for lambs to selectively eat more of the feed supplements, and a technique called 'creep feeding' achieves just that.

Setting target weaning weights

Winter and spring lambs in the southern states of Australia are commonly weaned at the end of the growing season just as pasture quality and quantity is declining. Under these circumstances it is desirable that weaners reach sufficient weight to ensure their survival on low quality pasture. LLOYD Davies (1983) reports losses exceeding 50% in Merino weaners below 20 kg, while Mulholland (1986) recorded a mortality rate of 22% in a flock of Polwarth weaners (12–19 kg) over their first summer.

Table 1 shows the relationship between liveweight at weaning and survival rates for medium-wool Merino weaners grazing dead pasture over summer.

Weaners ideally weigh 25 kg to ensure high survival rates. Lambs raised during drought (15 kg at weaning) risk much higher losses. A weaning weight of 20 kg is probably a reasonable target for a drought year, especially

if there is an opportunity for some further modest weight gain post-weaning. If weaning weights are 15–20 kg, then feeding must ensure good weight gains until the lamb has reached 25 kg.

Table 1. Survival of medium-wool Merino weaners grazing dry summer pastures

Weaning weight (kg)	Survival rate (%)
15	78
20	90
25	97

After Hodge 1991.

What is 'creep feeding'?

Creep feeding is a simple way to allow lambs access to extra feed supplements or a different supplement, while excluding the ewes. This means that the lambs will still be suckling milk and grazing but will also have extra supplements to make up any shortfall in their intake. The lambs gain access to the feed through a 'creep' which is simply an opening in a fence or gate that is large enough to allow the lambs access but too small for the ewes to enter.

Creep feeding is appropriate when:

- pasture quality or quantity are limiting milk production and hence lamb performance;
- ewes have lambed in low fat score and their milking potential has been reduced;
- the ewes are already receiving supplements but the lamb performance is still inadequate;
- the lambs are destined for slaughter and must meet target weights for market;
- the mob consists of scanned twin-bearing ewes, and most of the lambs are being reared as twins.

Creep feeding will not be cost-effective when animals are grazing adequate quantities of high quality green pasture.



Creep feeding helps with early weaning

A major side benefit to creep feeding is in training lambs to hand feeding. Rations for early-weaned lambs are identical to creep rations, and lambs already trained to creep feeds are much easier to wean at early ages without the usual setbacks. Ceasing to feed ewes in the week before weaning will encourage them to 'dry off' and increase the lambs' dependence on the creep. The major benefit to early weaning is the maintenance of ewe fat score as a head start for the next joining.

When to start creep feeding

Lambs begin to graze and eat solid food as early as 2 weeks of age, but they do not begin to consume significant quantities until about 4 weeks. If ewes are hand-fed during lambing, lambs will be familiar with the supplements and will adapt to creep feeding reasonably readily from around 4 weeks into the lambing period. If lambs do not adapt readily you may need to open the creep pen to the ewes as well for a few days so that they can train their lambs to enter the creep area.

The hardware for a creep feeding arrangement

Creep feeding is a relatively simple concept and requires only simple equipment. The creep enclosure should not be too large. An area 8 m × 8 m will be plenty large enough for a lambing mob with 400 lambs at foot, but not so large as to encourage lambs to set up residence. Creep rations can be fed in either troughs or self-feeders. Fed in troughs, young lambs should each be allowed 5 cm of space (i.e. 2.5 cm of trough per lamb if there is double-sided access). With self-feeders, the space can be slightly less since free access will keep the time each lamb spends in the creep enclosure more uniform across the mob.

The creep gate is the heart of a creep feeding system. The gate needs to have openings 20–30 cm wide and about 50 cm tall. An opening of 20 cm should be large enough to allow access for lambs up to 22 kg liveweight. It is important for the opening size to be large enough to pose no threat to the larger lambs getting stuck, but must still prevent access for the mature ewes.

Locating the creep pen

The creep area needs to be in a location that is accessed daily by the ewe flock. Close to water or other feedout areas is ideal as these areas will be visited regularly. It is important that the creep area is kept clean and dry—it is useful if the creep pen is reasonably portable to allow for ease of movement to a fresh area. The creep pen should be located close to a source of good quality water. Water located in the pen can create wet areas in the pen and also increases the risk of drowning. Sunny sheltered spots will attract ewes and lambs and are ideal localities for creep pens. Later in the season as hot weather approaches it may be useful to move the pen to a cooler location. If the use of the creep by lambs is not as expected, then try a different locality.

What to feed

Creep rations should provide high energy and protein if their efficiency is to be maximised. A reasonable target would be at least 12 MJ/kg DM and 18% crude protein (CP). The growth of young lambs is mostly lean muscle (protein) rather than fat, so protein supply is critical. Older lambs begin to deposit more fat, and their requirement for protein diminishes. Where the ewes and lambs are already being fed a concentrate supplement (e.g. grain), then the most convenient option will be to use the existing grain source with the addition of an extra protein source. A few examples are listed in Table 2.

Table 2. Examples of suitable creep feeds for young lambs

Feed 1	%	Feed 2	%	ME (MJ/kg DM)	CP %
Barley / triticale / wheat	80	Cottonseed meal	20	12.1	18.2
Barley / triticale / wheat	65	Canola meal	35	12.5	18.3
Barley / triticale / wheat	35	Copra	65	12.5	17.8
Oats	75	Cottonseed meal	25	10.5	18.6
Oats	60	Canola meal	40	11.5	18.3
Oats	30	Copra	70	11.9	17.8
Copra meal	100	–	–	12.5	21
Corn gluten pellets	100	–	–	12	25

If mixing feeds is problematic then the use of copra meal as the base creep ration will best meet the protein and energy requirements. Corn gluten meal or pellets would also be a suitable creep feed. It is also important to allow the lambs access to good quality roughage such as lucerne or clover hay. This will promote development of proper rumen function and is another attraction to get lambs into the creep pen.

If the rations mentioned above are fed as raw feeds, then they will be low in calcium (Ca) relative to phosphorus (P). It is important to add fineground limestone at 1% to 1.5% of the ration to return the Ca:P ratio to the desired 2:1. This practice will offset the risk of urinary calculi especially in male lambs. The addition of 1% common salt is also desirable. If calculi are still a problem the addition of 0.5% ammonium chloride may help.

Another option would be to have a pelleted ration made to your specifications. Be sure to specify that no urea is added, since young lambs are very susceptible to urea toxicity. Pellets should be very small in size—large pellets will discourage intake by the smaller lambs.

As long as the vitamin nutrition of the mothers has been adequate there should be no need for the use of additional vitamins. If the ewes are deficient then the addition of vitamins A, D and E to the lamb ration may be useful. Since young lambs have very little muscular development the use of an injectable vitamin supplement may not be as effective.

Feeding rates and economics

The value and economics of creep feeding lambs depends on the quantity and quality of pasture available in the lambing paddock. Table 3 shows the potential difference in growth between creep-fed and non-creep-fed lambs in one specific but common circumstance. It is assumed the ewes have only 200 kg DM/ha of green, high quality pasture and they are being fed 700 g/h/d of a barley supplement.

Under these circumstances creep feeding could lead to an extra 7.2 kg of weight at weaning, with lambs reaching acceptable weaning weights for good post-weaning survival. Without creep feeding, lambs would average only around 14 kg. In crossbred lambs the conversion ratio of creep feed is close to 2:1 and is clearly a profitable approach.

Post-weaning feeding and management is more critical if weaner deaths are to be avoided. In Merinos the economics are driven by the increased survival rates. Increasing a lamb's weight at weaning from 14 kg to 21 kg could mean at least 10% more lambs surviving post-weaning.

If pasture conditions improve during the lambing period and lambs are already feeding, it may be possible to reduce or cease ewe feeding but maintain the creep feeding to ensure good weaning weights for the lambs. It is more efficient to feed the lamb directly than to feed ewes for milk production.

Table 3. Effect of creep feeding on lamb performance

Day of lambing	No creep feed*		Creep fed†			
	Lamb Wt. (kg)	Growth (g/h/d)	Lamb Wt. (kg)	Growth (g/h/d)	Creep DM intake (g)	Extra daily gain for creep-fed lambs (g/h/d)
28	6		6			
		146		170	45	25
42	7.75		8			
		145		215	120	70
56	9.5		10.5			
		118		243	245	125
77	12.2		16			
		82		262	395	180
98 (84) (weaning)	13.8		21		15 kg (total intake)	7.2 kg (extra gain)

Assumptions:

200 kg DM/ha green pasture @ 72% digestible; 500 kg DM/ha dead pasture @ 38% digestible. 40 kg ewe lambing at fat score 1.5; fed 700 g/h/d of barley at pasture.

* Predicted from GrazFeed®.

† Predicted extra gain by satisfying the remaining lamb appetite with a creep ration.

Managing feeding

Young lambs can be particularly fussy eaters so it is important that the feeding area and particularly the feed troughs are cleaned regularly. Stale feed can be removed and fed out to the ewes as part of their ration, thus avoiding any wastage. If troughs are used, the feed should be renewed on a daily basis and sufficient quantity provided to ensure that ad lib access is available (there should be some feed remaining in the trough at the end of the day). It is simple to mix feeds in a trough by pouring meal on top of grain and mixing roughly by hand.

Use of self-feeders ensures little wastage and less labour in feeding out, but mixing of feeds for use in self-feeders can be laborious without specialised equipment. The feed trough at the bottom of a self-feeder will still require regular cleaning to ensure ongoing acceptance of the feed by lambs. It is good practice to top up the feeders with small amounts every few days so that the feed is kept fresh.

Lambs will play on top of loose fed hay, so hay is best provided ad lib in racks to reduce the amount of waste.

Access to good quality water is also essential to lamb performance. Troughed water will be best and the troughs will also need cleaning at regular intervals.

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