



Ad-lib feeding guide for calves

This guide outlines what to expect from an ad-lib feeding system and provides information to support successful set-up on farm.

What is ad-lib milk feeding?

Ad-lib (ad libitum) feeding allows calves free access to milk or milk replacer. This system mimics natural feeding behaviour and supports strong early growth and long-term productivity.

Potential benefits

Research and farmer experience show that well-managed ad-lib feeding can deliver several benefits.

These include:

- High average daily gain pre-weaning
- Better long-term productivity, including higher conception rates and increased longevity
- Reaching target weaning weights earlier
- Reduced labour requirements
- A calmer, more settled calf rearing environment

Farmer quote: *Multiple feeds throughout the day keep calves calm and settled – you'll notice the difference in your calf shed each morning.*

Set up for success

Mob size and space recommendations

- Mobs of 10-20 calves allow for careful monitoring of health and growth.
- Larger groups can lead to challenges in monitoring, health management and competition.
- Provide 1.5-2.5 m² pen space per calf.
- Keep groups consistent to reduce stress and competition.

Teats per group

- Use a ratio of one teat per 3-5 calves to reduce competition e.g. 4-6 teats per drum for mobs of 20 calves.
- Use good quality, long-life teats and check regularly for wear and tear. Leaking teats can waste milk!



Drum setup

- Choose drum size based on daily milk volume and how often drums will be topped up (once or twice daily).
- Mount drums securely and ensure easy access for filling and cleaning.
- Position teats at a height that encourages natural suckling (calves looking up with the chin extended forward), approximately 590mm.



Initially offer 8 litres of milk per calf and increase as needed to ensure calves have constant access to milk.



Farmer tip: When setting up the drums, make sure the plastic tubing isn't coiled – it needs to sit at the bottom of the drum. If the tubing is coiled, straighten it by heating it in hot water, or thread it inside offcuts of washdown hose to keep it in place at the bottom.

System management

Get your calves off to the best start

- Colostrum first: Feed newborn calves quality colostrum at 10–12% of bodyweight within 6–12 hours of birth.
- Train calves well: Ensure calves are strong, healthy, and confident drinkers before moving them into an ad-lib pen.
- Keep routines consistent: Having the same staff check and feed calves daily helps with detection of health issues.
- Monitor calves individually: Spend time observing calves so you can identify changes early.
- If you're new to ad-lib feeding: Consider starting with one pen of around 20 calves to gain confidence with the system.

Daily tasks

- Fill drums daily: Avoid topping up old milk with fresh milk. Some farmers choose to use cold milk to slow bacterial growth and for practical reasons. Be aware that calves are likely to drink more milk to compensate for cold milk temperatures.
- Monitor consumption: Keep drums topped up so calves have continual access to milk. Vocal calves may indicate insufficient milk. Unlike systems that offer access to milk once or twice a day, calves won't appear 'plump', as they will be feeding in smaller amounts throughout the day.
- Watch behaviour carefully: Look for early signs of illness in calves – the opportunities to observe calves are different compared to other feeding systems. Calves should have wet noses, appear alert and are able to stand and move easily when approached. Ensure staff are well-trained in signs of healthy and unhealthy calves.
- Top up solid feed: Provide small amounts of solid feed from week one, to support early rumen development.
- Check and clean out water: Calves must always have access to clean water to support solid feed intake and for rumen development.



Hygiene and milk quality

- Keep equipment clean: Equipment must be cleaned regularly to reduce the risk of bacteria growing. Warmer climates will require more frequent cleaning of drums.
- Use a preservative in warm weather: Consider using a preservative to prevent the rapid growth of bacteria.
- Never dilute vat milk: Keep milk undiluted to support proper curding in the stomach and reduce the risk of scours.

Farmer tip: *Have extra drums on hand and plan to give your drums a good scrub every few days. With a bit of practice, swapping them out becomes quick and easy.*

Health management

- Manage dietary changes gradually: When switching milk replacers or from whole milk to milk replacer, transition over 5 days using ratios of 75:25, 50:50, 25:75 to prevent nutritional scours.
- Avoid multiple stressors: Don't change feeds or wean calves at the same time as disbudding, moving pens, or other stressful events.
- Observe calves carefully: The opportunities to observe calves are different compared to twice daily and once per day feeding systems. Train your team so they can quickly identify signs of healthy and unhealthy calves.

Weaning strategy

- The weaning period will take longer on ad-lib feeding compared to other systems. Weight gain is likely to be faster on ad-lib feeding but rumen development is often slower. A good weaning strategy is important to ensure adequate rumen development occurs before a calf is fully weaned and post-weaning weight gain is not compromised. Decisions on when to begin gradually weaning calves off milk should be guided by weight targets (based on breed) and the general health of calves.
- Gradual weaning can be implemented in several ways. Some farmers reduce milk fed by 20-25%, every week, while other's transition to feeding once a day and then reduce the volume. Whatever approach is taken, monitoring solid feed intake is essential to assess how well the rumen is developing.
- Ensure calves are eating at least 1kg of meal per day before fully weaning them off milk. Continue feeding meal for at least two weeks after removing milk to support a smooth transition to pasture. Lighter calves or those recovering from illness will need a longer supplementation period.
- Refer to the appendix section for examples of how farmers approach ad-lib weaning.

Farmer tip: *Starting the weaning transition early enough and weaning over a couple of weeks is important to get the full benefits of an ad-lib feeding system.*



Cost and labour considerations

- Budget for higher milk use: Ad-lib systems typically use more milk than other feeding systems. This may be offset if calves reach weight targets and are ready to wean earlier than usual.
- Focus on lifetime returns: Benefits include improved early growth, first lactation production, and overall longevity.
- Support calves post-weaning: Strong nutrition after weaning is essential to maintain growth rates and realise the long-term productivity gains.



Save labour with good design: Efficient drum placement and system set-up can significantly reduce daily workload.

Getting the best results

Ad-lib feeding systems can have significant benefits on farm, including reduced labour, faster growing calves and increased life-time productivity. Other systems that provide calves with a high allowance of milk pre-weaning can deliver the same benefits to calves but may be more labour intensive or require more capital up front.

Success in an ad-lib system relies on excellent colostrum management, regular equipment cleaning, careful monitoring of calf health, and commitment to good nutrition throughout the calf's development. Offering plenty of good quality solid feed alongside ad-lib milk and throughout the weaning period is essential for rumen development, helping set calves up for smooth weaning and strong, consistent growth right through to maturity.

Find out more This ad-lib feeding guide is part of a suite of calf rearing resources. For in-depth information on the fundamentals of calf rearing, see the Calf rearing reference guide.





Appendix 1 – Weaning approaches for ad-lib feeding systems

There are many ways to implement successful weaning, but it is important to remove milk gradually, so calves have time to adjust to each reduction in milk volume. Think of weaning as a transition, not a one-off event.

Continuing to feed meal for two weeks post weaning also supports a smooth transition. After two weeks, if pasture supply and quality are adequate to meet desired growth rates, meal may also be removed.

Wean by transitioning to once-a-day (OAD) feeding

Week	0–4	5	6	7	8	9
Feeding system	Ad-lib	Transition to OAD at week 5 – provide one teat per calf				Fully weaned
Milk volume	Unrestricted	8 L	6 L	5 L	4 L	Remove milk if target solid feed consumption is met
Solid feed	Continue offering meal throughout – increase amount as milk reduces					

Wean by reducing volume of milk each week

Week	0–5	5	6	7	8	10	11
Feeding system	Ad-lib	Monitor calves closely after each reduction in milk volume to ensure competition is not causing individual calves to miss out on adequate feeding.				Fully weaned	
Milk volume	Unrestricted	10 L	8 L	6 L	5 L	4 L	Remove milk if target solid feed consumption is met
Solid feed	Continue offering meal throughout – increase amount as milk reduces						