

Milk feeding—low volume/restricted milk

On-Farm Research

Key Points

1. Milk energy is expensive whereas pasture energy is cheap. However pasture is an inadequate diet for young calves.
2. Pellets or meal (20% Protein) need to be available from day one to promote early rumen development and to transition calves from milk to pasture if early weaning is desired.
3. Feeding restricted volumes of milk to housed calves (i.e. not fed grass) encourages them to eat larger volumes of pellets or meal.
4. Using this system calves can be weaned off milk if they are healthy and have put on at least 20 kg live weight since arriving in the shed and are eating at least 1 kg of pellets per day. This is generally between 5 and 7 weeks.
5. Need to use a compartment milk feeder (see below) to ensure all calves are getting sufficient.
6. Pellet feeding continues after weaning and until the calves are at least 12 weeks old.

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Calf Rearing Fact Sheet 3.4

General

Milk is the most expensive component of a calf's diet whether it is removed from the vat or purchased as milk powder. Reducing the amount of milk fed and getting the calf onto pasture faster will reduce rearing costs. However, grass does not meet the nutritional requirements of a young calf because the calf's rumen is small and not well developed. Grass is bulky and can be up to 85% water, so it is hard for the calf to consume enough.

Feeding calf pellets or meal encourages early rumen development and provides the nutritional bridge between milk and pasture in a low volume/restricted milk system.



	Days	Small <35kg *	Medium 35kg – 40kg	Large >40kg / calf
Day 1-2	2	2 x 1 litres	2 x 1.25 litres	2 x 1.25 litres
Day 3-5	3	2 x 1l	1.75 l	2.25 l
Day 6-9	4	2 x 1.25 l	2 l	2.5 l
Day 10-12	3	1.75 l	2.25 l	2.5 l
Day 13-16	4	2 l	2.5 l	2.5 l
Day 17-24	8	2.25 l	2.5 l	2.5 l
Day 25-35	11	2.5 l	2.5 l	2.5 l
Day 36-42	7	2.5 l	2.5 l	Weaned
Day 43-49	7	2.5 l	Weaned	
		Weaned		
Milk replacer / calf		22.75 kg	20.0 kg	17.35 kg

*These are typically Jersey calves.

Milk feeding

- Sort and group the calves on weight and age and feed accordingly.
- Calf milk replacer concentrated at **200g milk replacer/litre** from Day 1 (see table) or feed whole milk 2 litres morning and again late afternoon for 10 days and then switch to 3 litres of milk fed once a day for a further 5 weeks. Where restricted milk diets are fed it is **essential** that compartment feeders are used and calf feeding is supervised so that all calves get their entire ration.
- Twice a day feeding can be carried out for longer by spreading the amount over two feeds but it increases labour requirements.
- From day 1 it is essential to have fresh 20% protein calf pellets (or meal) available *ad lib* (i.e. always have some left in the feeder).
- Have fresh straw or low quality hay available.
- Always have clean drinking water available. A good test of this is whether you would drink it!

Weaning off milk

- Calves are best kept in the shed until after weaning. If they are on pasture they will eat pasture rather than the pellets and this will slow down both the rumen development and their growth rate.
- Calves can be weaned off milk if they are healthy, have gained at least 20 kg live weight since arriving at the shed and are eating at least 1kg of pellets or meal per day.
- Calves should be kept inside for a couple of days after weaning off milk so that any calves not eating enough pellets are detected. These calves can then be placed back on milk.

Post weaning

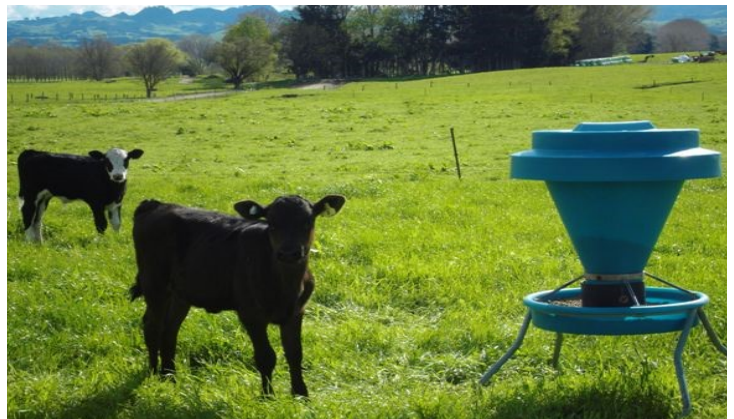
- Pellets can be changed from 20% protein to 16% (protein) if the calves have access to and are consuming reasonable amounts of high quality pasture (green, leafy, clover, growing well).
- If there is good quality pasture available the amount of pellets being fed/ head can be slowly reduced as follows:-

Up to the end of week 8 feed 1.5 kg/head day

Up to the end of week 10 feed 1.0 kg/head/day

Up to the end of week 12 feed 0.5 kg/head/day

After week 12 stop feeding pellets if calves are meeting growth targets.



- If there is not enough quality grass then pellets need to be fed for longer.
- Over summer an alternative feed source may be needed if pasture quality or quantity is limited.

Advantages

- Calves in small groups so easy to closely monitor health.
- Calves can be weaned early.
- Feed less milk in total.
- If done properly reduced likelihood of nutritional scours.

Disadvantages

- Calves need to be kept inside until weaning.
- Keeping calves inside for longer means higher risk of a disease outbreak if hygiene is poor.
- Requires the feeding of high quality calf pellets or meal to encourage early rumen development.
- Calves can look “potty” as rumen develops early.