



Managing a Small Beef herd in dry times herds with less than 100 head

Regardless of if you have five cattle or 50 cattle the responsibilities and management decisions to ensure they remain healthy during dry times when feed and water levels decline is just the same as large beef properties with several hundred head.

The main difference, however, is that the majority of small properties and herds often don't have access to alternative water resources, appropriate feeding equipment or machinery. Often the person responsible for the cattle has competing time priorities which take them off-farm every day; this increases the challenges and associated costs per cow to manage a small herd through a tough season. The upside is that alternative off-farm income sources commonly support smaller herds. While this is a great benefit, the costs of feeding cattle in a dry season can be very high, and you need to consider the ongoing cost.

Below are some considerations for managing a small beef herd in a dry season:

Why do I have cattle & what is my budget?

There are often many motivations for running cattle, and these may influence the choices you make. Getting a financial return or profit may be less critical for those who see the animals as pets as it is for somebody running cattle as a business.

A landholder running cattle as a business may decide to sell some or all and wait for better seasonal conditions to return whereas a pet owner may be prepared to spend big money to purchase feed.

Regardless of your motivation for running cattle, when it comes to hand-feeding in a dry season take the time to ensure you have a clear budget, you're prepared to spend on feed and that you understand how much a feeding program could cost you. We have seen a few small herd owners almost spend as much on feed in the last six months as the herd is currently worth.

The table below shows the impact of feed cost. E.g. if you had a budget of \$22,000 for feed and you're feeding a cow for \$4 per head per day (see the section on calculating feed costs) that's \$28 per week or \$120 per month. Multiply this by the number of cows in the herd to get your feed costs over time. E.g. herd has 30 head, multiply by \$28 per head per week = \$840 per week, or \$3,600 per month. Multiply this by six months equals \$21,600.

Impact of Feed cost per cow, per day, per week and per month		
Cost per day (\$)	Cost per week (\$)	*Cost per month (\$)
\$1	\$7	\$30
\$2	\$14	\$60
\$3	\$21	\$90
\$4	\$28	\$120
\$5	\$35	\$150
\$6	\$42	\$180
\$7	\$49	\$210
\$8	\$56	\$240
\$9	\$63	\$270
\$10	\$70	\$300

*Assumes 30 days per month

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If you feel your budget won't stretch far enough to cover feeding costs for all animals, then selling some will help. Meaning you can potentially hold onto your better performing or favourite animals and keep them in good condition. However, there can still be a point when the season hasn't improved, and you have reached your budget. The remaining cows you have been feeding may need to be sold or continue to be fed. Can you afford it? Long term feeding can become very costly.

Water supply

Cattle need to drink every day; make sure you know where the cattle get their water from. Is it a dam, creek or water trough system? A lot of dams and creeks across the north coast are at very low water levels, this increases the risk of cattle becoming stuck in mud as the water recedes and in some cases the dam or creek will run dry.



- Check water sources a few times per week, this may need to increase to daily in hot weather or if the access point for animals is boggy.
- Absentee landholders should plan to have someone they trust check water if they are unable to check it themselves.
- Check dams and creeks for signs of bogging where cattle have been accessing water. If bogging is beginning to exceed 30cm deep, calves are very likely to get bogged, even adult cows, especially those in low body condition, can become stuck. Removing a bogged adult cow can often require a tractor or heavy earthmoving machinery. It is not a pleasant experience for the owner or animal.
- If water is provided in troughs ensure you know how the trough system is supplied; either from a "town" water source or via a pump and tank reticulation system from creeks or bores. If pumping, ensure you check water levels where the pump is drawing water.
- Make sure you also know the capacity of the troughs in the paddock/s

Options to prevent stock from bogging:

- Use earthmoving machinery to de-silt access around the dams (usually only a temporary fix)
- Fence off the unsafe water point and pump water to a tank or trough system. This will require extra equipment, maintenance and cost.

Purchasing and carting water from an off-farm source is both time consuming and costly. If you are faced with carting water seriously consider reducing numbers or selling the entire herd. Often the labour and time commitment to do this (time away from work) adds a hidden cost on top of the water purchase cost.

Water consumption

The table below shows how much water to allow for various size cattle. Water requirements will increase with increasing temperature. The values presented assume the atmospheric temperature is 30°C. Water intake will decrease with high levels of contamination (salt or organic matter) and may pose health issues to livestock.

Live weight (kg)	Water required (L/day)
Growing steers, heifers and bulls	
200	36–41
300	54–60
Finishing / Dry stock	
350	57–70
450	78–91
Lactating cows	
400	60–81
550	110+
Mature bulls	
800	100+

Adapted from *Nutrient Requirements of Domesticated Ruminants (CSIRO 2007)*.

20 Cows and calves can consume at least 2000 litres of water per day. That means a 1000L trough will only have enough water for about ten cows and calves per day if it isn't able to refill as they drink. This number of animals would consume 54,000L or 2 "standard" water tanks in about 26 days.

Feeding

When pasture levels are low, a decision has to be made to either sell the cows or to begin feeding them. If you decide to feed ensure you have considered the practicalities of what is required to feed cattle especially if you are going to fully feed them, in the case no pasture is left.

Ask yourself;

- What time do I have available? Full feeding can take a few hours a day, seven days a week unless you invest in bulk feeding equipment such as feeders. Even then checking animals are accessing the feed at appropriate rates still takes time.
- Where will you store large quantities of feed supplies such as hay or grain?
- Do you have the machinery to help handle large feed items such as round bales or bulk bags?

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- Do you have feeders to prevent wastage of the feed when feeding out?
- Do you know how to feed the product you have purchased? Some feed sources such as grain if introduced or changed too quickly can kill cattle. If you haven't had experience with a particular feed seek advice.

Using hay feeders helps prevent cattle from wasting feed. Wastage of hay bales fed without feeders can be as high as 20% or 64kg in the case of an average round bale.

How much Feed Do I need?

The below table is from the NSW DPI fact sheet Hand feeding Cattle in drought. It highlights the need to understand how much feed various classes of cattle need and that quality (nutrients such as energy and protein) of the feed is as essential as the quantity of feed provided. If you're not sure about how much to feed, seek advice.

If you're unsure about the quality of a feed, especially hay and silage, seek advice as there are considerable differences in the quality of 'hay bales'. Examples of hays that are 'usually' good quality include Lucerne, Oaten, Barley, Wheaten, Ryegrass hay, some tropical grasses if cut, when they were young, can be ok. Poor quality hay includes couch, corn stubble, cane tops, mature tropical grass.

Hay can be tested for nutritional quality, ask if the supplier has a quality test. Feeding poor quality hay can mean you're spending money, and the cows will still lose weight, making it pointless. The diet will need additional feed supplements which will add cost.

Stock class	Liveweight (kg)	Grain* 12MJ ME	Hay 8.5MJ ME	Pit silage 35%DM 8.5MJ ME	Bale silage 45%DM 10MJ ME	Grain:hay 50:50	Grain:hay 80:20
young stock gaining 0.2kg/d	200	3	5	13	8	4	3.5
	250	3.5	6	15	9.5	4.7	4
	300	4	7	17	11	5.5	4.5
	350	4.5	7.5	19	12	6	5
	400	5	>9MJ ME required		13	6.5	5.5
dry stock at maintenance	450	4.5	7.5	18	12	6	5
	500	5	8	19.5	13	6.5	5.5
	550	5.5	8.5	21	14	7	6
8 month pregnant cow (no gain)	500	7	8	19	18	9	8
	550	7.5	8	20	19	9.5	8.5
	600	8	Not Achievable		20	10	9
	650	8.5	>9MJ ME required		21	10.7	9.5
Lactating cow (no gain) with calf	500	Not Suitable			25	12	10.5
	550	20% roughage required		Not achievable >10MJ ME required to maintain cow weight	26	12	11
	600				27	13	11.5
	650				28	14	12

* Calculations are for crushed grain. Feeding whole grain can increase the amounts required. Increase all amounts by 20% in cold weather, using hay where possible.

Consider that a 500kg pregnant cow needs a minimum 8kg of hay per day, provided the energy level of the hay is 8.5 Megajoules of Metabolisable Energy. So a herd of 30 cows needs 240kg of hay per day minimum. If the quality is low more hay or additional feeds will be required.

How much do bales weigh?

- Small square bales of hay 20-24kg
- 4 x 4 round bale of hay 320-350kg
- 4 x 4 round bale of silage 500-650kg
- 8 x 4 x 3 ("large square") bale of hay 620-650kg

Don't be misled in thinking a silage bale has more feed in it. Silage bales are made with more moisture in the material when baled, meaning that a portion of the actual bale weight (approx. 55%) is water and not feed. Water contained in silage is not a replacement for drinking water.

Using the example herd of 30 head needing 240kg of hay per day minimum, and average bale weights, you would need to feed:

- Minimum ten small square bales per day
- Minimum of one 4 x 4 round bale per day
- Minimum of one 4 x 4 silage bale per day
- Minimum of half a large square bale per day.

Quickly you can see that machines such as tractors will assist in feeding given the large quantities of material needed for even a small number of cows. If you don't have machinery, then smaller bales become more practical but expensive. Bale prices presented here are a guide only. Currently, there is a considerable range in pricing.

- 10 small square bales per day at \$20/bale = \$200/day or \$1400/week
- 1 round bale per day at \$175/bale = \$1225/week

Feeding grain

If you haven't fed grain before, seek advice. Introducing grain too quickly or providing too much grain can cause grain poisoning and even kill cattle. The below table is a guide for introducing grain.

If cattle run out of grain for one day or more, you will need to re-introduce the grain slowly and work to building up to the desired feeding level.

Options for purchasing grain on small farms:

- Small 20kg bags (usually the most expensive)
- 500kg or 1000kg bulk bags (requires machinery to handle easily or bucket grain out)
- Bulk loads delivered from local feed mills. (Usually requires a minimum 2-tonne load and somewhere to store the grain often directly into the feeder.)

To work out how much grain you are feeding weigh the bucket full. If it is a self-feeder when filling it mark the inside of the feeder when a known amount, e.g. 500kg, is in the feeder. Restrict the intake to a low setting see how many days it takes the cows to eat the quantity of grain and divide it by the number of cattle. e.g. 500kg eaten in 7 days by 30 head = 500/7/30 = 2.3kg grain per head per day.

Guide for Introducing Grain

Day	Amount of hay	Cereal grain (kg/head/day) as fed for cattle
1	To requirements	0.5
2-3	To requirements	0.5-1.0
3-4	Decrease hay	1.0-1.5
5 on	Decrease hay	Increase by 0.5 kg/head/day until desired feeding level is reached

*A minimum 20% of the diet needs to be a fibre source. e.g hay, silage or pasture

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Lick Blocks

Lick Blocks can contain various minerals, salt, molasses and protein sources. They are designed to help supplement a deficiency, meaning they are consumed at low rates (100-500g per head per day depending on the block) and they can be an easy option for this purpose. But this means they are to be fed when there is still adequate feed (pasture, hay, silage or grain) available to meet the intake requirements of the cow. Putting a lick block out when there is no pasture or other feed available will be ineffective and wasted money, as the cattle will continue to lose weight.

Calculating feed costs

Calculating feed cost is as simple as taking the cost of the product and dividing it by the amount of feed available in kilograms, and this will give you the cost per kilogram. e.g. Grain costing \$600 for 1000kg = ($\$600 / 1000\text{kg} = \$0.60/\text{kg}$) multiply this by how much the cow is eating.

If a cow is eating 3kg per day of grain, it becomes $\$0.60 \times 3 = \1.80 per cow per day

If a round bale costs \$175 and weighs 320kg ($\$175/320\text{kg} = \$0.54/\text{kg}$) and the same cow is eating 6 kg of hay per day = \$3.28 per cow per day.

Total feed cost in this example is $\$1.80$ grain + $\$3.28$ hay = $\$5.08$ per cow per day

Monitor the condition of the cows

It is vital to keep an eye on the body conditions of your animals. If your cows are beginning to look like the cow in this photo, you will need to intervene and start feeding to prevent further loss of body condition. It may be an indication that it is time to sell some cows to leave more pasture (if available) for the rest of the herd.

The cow pictured is in Fat score 1 (0–2 mm P8, 0–1 mm 12th rib) Animal is emaciated. Ribs and short ribs are sharp. There is no fat around the tail head. Hip bones, tail head and ribs are prominent.



Monitor pasture conditions

Before your pastures look like the photo opposite, its time to decide about reducing cow numbers or feeding. In this photo, there is not enough pasture available to feed any class of beef cow. Even though it is green, there isn't enough grass available to meet their intake requirements.



Further resources to help

[North Coast Beef Cattle Health and Husbandry guide](#) this has information about feeding, water requirements, and body condition monitoring of cattle as well as common health issues.

[Understanding Stock feed Product Labels](#) will help you determine what the labels on various stock feed products mean and help in making feeding decisions

[Pasture Recovery for North Coast Beef Producers](#) will help you to make decisions about pasture recovery and likely feed supply for the herd

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