Reducing feed wastage costs

Key messages
Wastage adds cost to home grown and purchased feeds
Feed losses are most significant during feed-out
Much more feed is wasted when it is fed out on bare ground in the paddock or along a roadway then when fed out using a feed-out facility
Make realistic allowances for feed wastage when developing your feed budget

Wasting feed adds to herd feed costs. Feed prices are one of the largest variable costs to a dairy business, additional feed wastage can increase this cost significantly. Losses at feed-out are the most significant and can be reduced.

Feed wastage costs

The cost of feed wastage is assessed in two ways:

- How many kilograms of dry matter bought is offered to cows but is not eaten.
- Losses in feed quality that may occur at each step, e.g. reduced energy and protein value, contamination with moulds/fungal toxins, moisture damage and leaching.

The most obvious example of this is deterioration in silage quality during storage due to poor sealing.

Feed losses occur during:

- delivery and storage
- mixing of diets
- feed-out to cows.

Of these, losses during feed-out are the most significant. If large quantities of hay, silage or mixed rations are fed out, significant losses can be incurred. Consider changes to the feed-out system that will reduce your feed wastage.

Allow for feed wastage in your feed budget

When doing feed budgets make realistic allowances for feed wastage during feed delivery and storage, feed mixing and feed-out. The Dairy Australia feed budget spreadsheet takes into account feed wastage when calculating the amount of feed required. It can be found at **dairyaustralia.com.au**.

Feed wastage rates vary with feed-out methods

Feed wastage rates vary between different feed-out methods. Low capital cost methods usually waste much more feed than high capital cost methods, and visa versa.

Feeding supplements (hay, silage and mixed rations) on bare ground, in a ring feeder or on pasture can lead to over 30 per cent feed wastage.

Permanent and semi-permanent feed-out systems can reduce waste to as little as 3 per cent.

Within all feed-out systems, some farmers achieve very low wastage, suggesting that operator management has a great influence on feed wastage.

Feed wastage could be adding to the costs of feed by up to 35 per cent, or even more under wet conditions. Figure 1 shows how feed price is increased as higher wastage rates.

For example, if 30 per cent wastage occurs when hay is feed out in a farmer's paddock, and the hay was bought for $400/t, then its actual cost is $520/t, an extra $120/t. So feed wastage very quickly becomes a costly practice, especially when feed prices are high.

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Table 1 Feed wastage using different feed-out methods

Feed-out method	Min %	Typical %	Max %
In the dairy at milking	0	1	2
In grazing paddock, on pasture	5	15	25
In sacrifice paddock, fed on bare ground, in ring feeders, or under a fence line	5	25	35
On permanent feed pad incorporating a compacted surface and purpose-built feed troughing	2	5	10
On permanent, fully developed feed pad with concrete surfaces	0	3	5

NB These figures assume dry conditions. They may not reflect the full range of wastage that might occur under wet conditions.

Figure 1 Feed cost per tonne consumed by cows

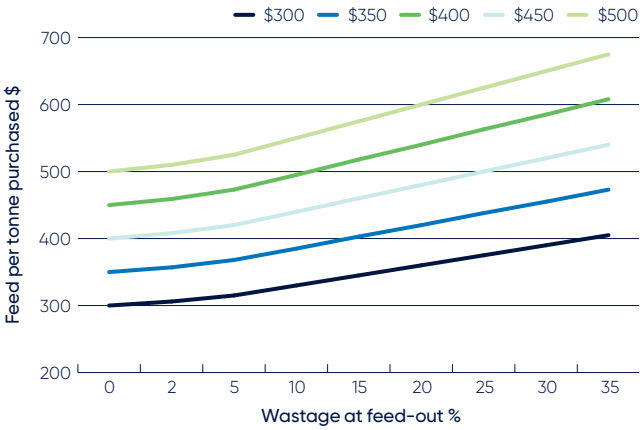

Figure 2 Feed wastage of different feed-out systems

Up to 30%

Temporary, relocatable feed-out area. Forages or mixed rations are fed out on the bare ground in the paddock, in hay rings or old tyre tractors or under an electric fence line, etc.

Semi-permanent feed-out area. Compacted surface and low-cost troughing, such as conveyor belting and second-hand feed or water troughs.

Permanent, basic, feed-out facility. Compacted surface and concrete feed troughs or cement strip under electric wires.

Permanent, fully developed, feed-out facility. Cement surfaces and feed alley. May be covered by a roof.

Under 5%

Ways to minimise waste during feed-out

Feed ingredients/rations

- Pay close attention to chop length when cutting hay/silage – if it is too long (longer than the width of the mouth), the cows will sort through it and waste more.
- Offer cows fresh, palatable, high-quality feed at all times. Discard any spoiled/mouldy feed ingredients.
- If feeding a partial mixed ration (PMR) using a mixer wagon, ensure the mix is not under or over processed. Follow the manufacturer's instructions. Use ration conditioners such as water, molasses or oil to reduce fines, sorting of feed and rejection or wastage of feed.
- Service the mixer wagon regularly.

Feeding infrastructure design

Use hay feeders that encourage cows to keep their heads in the feeder opening, reach for feed, and not easily back away and drop hay on the ground, e.g. a slatted bar design on a ring feeder that forces cows to rotate their heads when entering or leaving the feeder.

If using troughs

- Ensure you provide adequate space for the number of cows (recommendation is a minimum of 75cm/cow, however if your cows are larger then adjust accordingly).
- Aim for a trough height that allows cows to eat with their head in their natural grazing position – about 10–15cm above the ground. This position also helps cows produce more saliva to help buffer their rumen.
- Ensure trough surfaces are smooth to avoid build-up of waste feed, moulds, odours and are easy to clean.
- Consider concrete aprons around troughs to prevent mud and slush reducing feed palatability.
- Consider incorporating into any new design, convenient ways to clean out troughs.

Feeding management

- Offer cows the right amount of feed at the right time of the day – don't overfill troughs.
- Sequence feeds carefully during each 24–hour period.
- Clean feed-out surfaces regularly.
- If feeding out on pasture, avoid long pastures.
- Consider cows' social order (aggressive versus less dominant cows).
- Adapt to the prevailing weather conditions (feed wastage may be much higher under wet conditions versus dry conditions).
- Calibrate your concentrate feeding system to ensure you are feeding the exact amount intended.

Within any given feed-out system, feed wastage rates can vary substantially. Some farmers achieve very low wastage with careful management and attention to feed quality and palatability.

Acknowledgement
Dairy Australia acknowledges the funding contribution of the Commonwealth Government for eligible research and development activities.

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5590.1 | Jan 2024