



Feed Shortage 2018

Reducing feed wastage costs

Wasting feed at feed out adds to herd feed costs. While paying high prices for feed this season, this additional feed cost is also higher. Feed out systems are not the only point of feed wastage, however, it is the most significant and the one that farmers can manage.

Feed wastage costs

The cost of feed wastage is assessed in two ways:

1. How many kilograms of dry matter bought is offered to cows but is not eaten.
2. 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. Dairy Australia Feed Tools and the Dairy Australia feed budget spreadsheet take into account feed wastage when calculating the amount of feed required. These can be found at dairyaustralia.com.au/feedshortage.

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.

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

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.

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

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

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

Table 1 Feed wastage using different feed-out methods

| Feed-out method | Minimum | Typical | Maximum |
|--|---------|---------|---------|
| 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.

Table 2 Feed wastage costs at different wastage rates and feed prices

| | \$/t DM | Wastage | \$/t DM |
|-------|---------|---------|---------|
| Grain | 420 | 3% | 12.60 |
| | | 8% | 33.60 |
| Hay | 350 | 5% | 17.50 |
| | | 12% | 42.00 |
| | | 20% | 70.00 |
| | | 30% | 105.00 |

Table 3 Example farm feeding hay in paddock

| | \$/t DM | Wastage | \$/t DM |
|-----|---------|---------|---------|
| Hay | 350 | 30% | 105.00 |

Feed wastage could be adding to the costs of feed by up to 30%. Table 2 shows the costs of wastage for different feeds at different wastage rates. Table 3 shows the cost of feed wastage when 30% of wastage occurs at \$350/tonne.

For every tonne of DM hay this farmer feeds out in their paddock, 30% is wasted. This will cost him \$105 per t DM, as this 30% will have to be replaced through more bought in feed. This is can very quickly become a costly practice, especially when feed prices are high. In this example, hay bought for \$350/t actually costs \$455/t when 30% is wasted.

Figure 1 Feed wastage of different feed out systems



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.

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.

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