Feed – don't waste it

How would you feel if you had picked up and paid for a truckload of feed and by the time you had driven it home a quarter of it had blown away? This may seem a silly question, but it is effectively what happens on dairy farms all the time through feed wastage during storage, mixing and feed out.

Losses in dry matter and quality

If you've done a great job through Steps 1 and 2 of the feed buying process (planning and buying your feed), don't let yourself down at Step 3. The feed buying process isn't complete until the feed has actually been eaten by your cows, so if it is wasted before they get to eat it, it's just money blown away.

The cost of feed wastage is assessed in two ways:

1. In terms of how many kilograms of dry matter bought is offered to cows but is not eaten.
2. In terms of 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

Key tips

- 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 than when fed out using a feed-out facility.
- Make realistic allowances for feed wastage when developing your feed budget.

Of these, losses during feed-out are the most significant. If significant quantities of hay, silage or mixed rations are fed out, investment in feeding infrastructure to reduce waste may be money well spent.

Allow for feed wastage in your feed budget

When doing feed budgets (see Fact Sheet 2), make realistic allowances for feed wastage during feed delivery and storage, feed mixing and feed-out.

Poorly sealed silage pit with a thick layer of poorly fermented silage under plastic.

Pile of mouldy grape marc.

Feed wastage during feed-out.

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Feed-out methods: the trade-offs

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.

Farmers who decide to invest in higher capital cost feed-out facilities are often driven by a desire to better control feed wastage. Many are surprised how short the payback period is on such an investment after they do a realistic estimate of the value of the feed being wasted in their current system. It may be worth crunching the numbers yourself or with help from an adviser.

% Feed likely to be wasted at feed-out

Up to 30%

<$50/cow

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.

$50-100/cow

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

$100-250/cow

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

<5%

$250+/cow

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

Capital cost*

* This cost/cow is an estimate for the feed-out area only, not the associated equipment, including carts, wagons and tractors, as these may already exist or may be borrowed, leased or purchased, depending on individual preferences.

Example payback calculation

Garry has worked out that the capital cost to build a basic, but functional, permanent feed-out facility with purpose-built concrete troughing for his 300-cow herd would be $45,000 ($150/cow).

Garry currently feeds 10kg DM of a partial mixed ration/cow/day @ $300/tonne DM in the paddock. He estimates that with the proposed feed-out facility with purpose-built concrete troughing he would reduce his feed wastage by 10%, from about 18% to 8%.

This equates to 1kg DM saving/cow/day, a saving of $90/day or $2,700/month.

Payback period: $45,000 ÷ $2,700 = 17 months.

Let's take another farmer with 250 cows, feeding 1tonne of bought-in hay per cow per year plus grazed pasture and concentrates in the bail. If they could reduce hay wastage by 10% this would be worth about $5,000 per year (250 X 0.1tn / cow / year @ $200/tonne dry matter). Still worth chasing!

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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, 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 (reco: 75cm/cow).
  - 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.

Garry says: "It came as a bit of a shock when I looked closely at how much feed my cows weren't actually eating, and realised what this wasted feed was really costing me. But I reckon I can reduce this wastage fairly cheaply and easily, and get my money back fairly quickly."

Feeding management

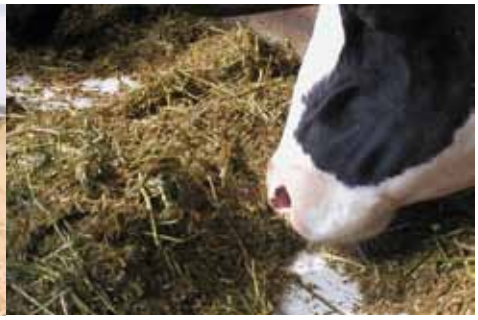
- Offer cows the right amount of feed at the right time of the day – don't overfill troughs.
- Sequence feeds carefully during each 24-hour period.
- Clean feed-out surfaces regularly.
- If feeding out on pasture, avoid long pastures.
- Consider cows social order (aggressive versus less-dominant cows).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

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.

Visit the Dairy Australia website (www.dairyaustralia.com.au) to obtain:

- a summary report on the Grains 2 Milk Feed Wastage Study (50 farms) ; and
- guidelines for measuring feed wastage on your own farm.

High feed wastage can occur when using troughs that are not well designed.



This cow is sorting fine from coarse particles from this poorly mixed ration.

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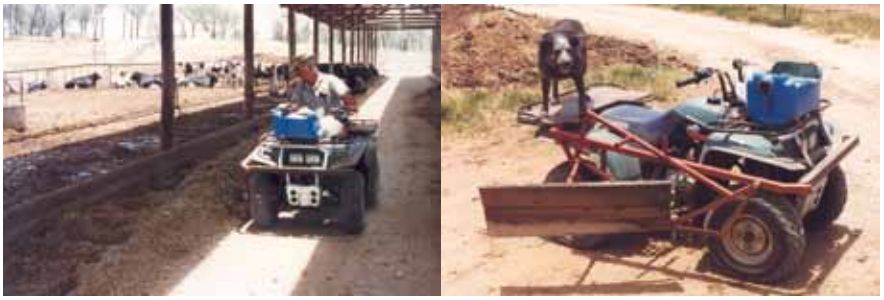
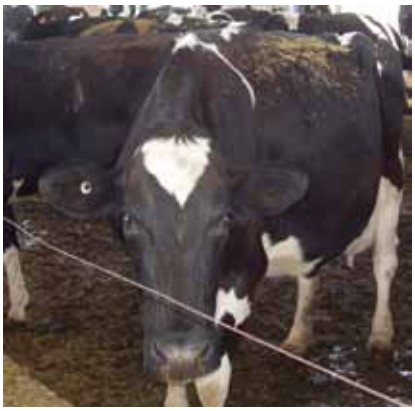
Feed wastage and some tips to minimise it

Up to 30% or more feed can be wasted when fed out on bare ground in the paddock or along a roadway!

Conveyor belting is used here to best effect, with cables applying tension to keep the trough's shape.



Here is a neat little device one farmer has set up to keep feed in his feed-out facility where it belongs – in front of the cows. Moving feed also stimulates cows to eat more!



Even in a purpose-built feed-out facility, it is difficult to totally eliminate feed wastage, as cows tend to toss feed over their backs while eating. Head locks are one way to minimise this.

For more information go to www.dairyaustralia.com.au

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