Nutritional economics

Technical Note N18

Nutritional economics are important when managing a dairy farm as feed-related costs can make up over 60% of costs on-farm. Costing on a dry matter (DM) and nutrient basis allows you to assess which feeds are of most value to your herd. Effects of drought and international markets may limit the availability of certain feed supplies and, consequently, increase the cost of buying that feed. It then becomes important to forward contract so that prices do not rise to uneconomical levels.

Costing on a DM basis

By calculating the cost of feed on a DM basis, you can determine whether the feed is an economical nutrient source compared to other feeds.

Price of feed as fed ($/tonne) ÷ DM % of feed

Example:

Citrus pulp @ $50/tonne containing 20% DM
50 ÷ 20% = $250/tonne DM

Grain @ $285/tonne containing 91% DM
285 ÷ 91% = $313/tonne DM

Once you work out the total DM cost of a feed, you can then determine what feeds are of most value to your herd and your budget. Low DM feeds such as citrus pulp sound cheap on an as-fed basis but do not cost much less than grain on a DM basis.

Costing on a nutrient basis

Work out how much the feed costs in $/kg DM as shown above. Then calculate the nutrients that are in that feed (look in feed tables for averages); access the feed cost calculator at

http://www.dpi.nsw.gov.au/agriculture/livestock/nutrition/values/feed-cost-calculator

Costing on a metabolisable energy

For costing on a metabolisable energy or ME (MJ/kg DM) basis, use:

(Cost of feed $/tonne DM ÷ 1000) ÷ Amount of ME in MJ/kg DM

Example:
Brewers grain contains 12.7 MJ/kg DM of ME
@ $265/tonne DM
(265 ÷ 1000) ÷ 12.7 MJ/kg DM

= $0.02/MJ of ME

Costing on a protein, starch, sugars

For costing on a protein, starch, sugars and neutral detergent fibre or NDF (% DM) basis use:

(Cost of feed $/tonne ÷ 1000) ÷ (Amount of nutrient % DM ÷ 100)

Example:
Soybean meal contains 52% DM of crude protein
@ $650/tonne DM
(650 ÷ 1000) ÷ (52 ÷ 100)
$0.65/kg ÷ 0.52 kg CP/kg DM

= $1.25/kg DM of protein

Brewers grain in a commodity bay ; this byproduct of beer brewing can contain up to 80% water.

Forward contracting

A forward contract is a legal agreement between a feed supplier and a feed buyer that can reduce the feed price risk. Remember that 60% of operating costs on dairy farms can derive from feed costs.

It is where the farmer (feed buyer) agrees on a specific quantity of feed at a 'locked-in' price for a predetermined time in the future.

There is usually a storage fee on top of the 'locked-in' price but this is generally quite small in relation to the variation in feed costs.

Advantages

- Can lock in a price that is constant over a 12–18 month period.
- Avoids price fluctuations occurring within the market.
- Market prices may increase dramatically.
- The contracted feed can be defined by the farmer's specific requirements in terms of feed quantity and quality according to the feed budget.
- Little to no costs to sign a contract.

Disadvantages

- Fluctuations in the market may recede dramatically below the 'locked-in' contract price.
- Required to deliver the grain as stated in the contract.
- Risk involved if product does not meet the required expectations.
- Must accept the delivery from contracted supplier, cannot offset the contract.
- If supplier does not meet expectations then buyer's only recourse is through legal action.

Case study

Grain was contracted at $270/tonne in August 2002 for 12 months. It can be seen in Figure 1 that by initiating a forward contract a farmer can save a lot of money even when these market prices fall below the contracted price in April, May and July.

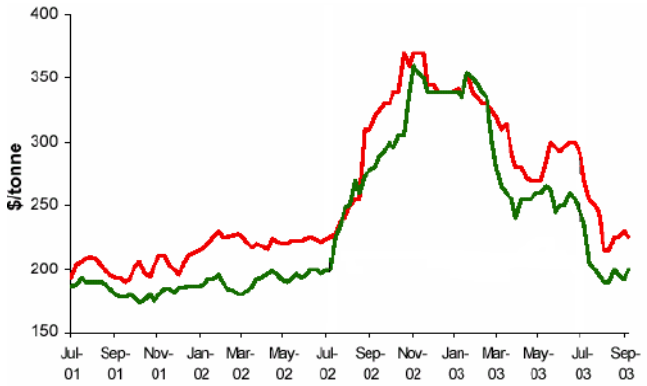

Figure 1. The market price of grains can be quite volatile over time; forward contracting at the right time will save costs and minimise the risk.

Margin over feed costs

It becomes important to monitor your feed cost as the margin over feed costs (MOFC) is a major driver of farm profits.

MOFC is the amount of total farm income left over after paying for all of the feed costs.

Aim to keep feed-related costs below 60% of total farm receipts.

It is influenced by input costs (fertiliser, seed, concentrates), environmental variables (weather), milk and other farm income, cow feed conversion efficiency and overall management.

There are two ways that can increase MOFC:

1. Grow and utilise as much high quality forage as possible.
2. Use concentrates where necessary to balance the diet and increase production per cow.

Understanding how nutritional economics can improve dairy farm profitability is an important aim in enhancing profitability. Forward contracting may prove to be beneficial particularly when a 'locked-in' price is well below market driven prices.

Further information

Contact the DAFF Customer Service Centre by Phone 13 25 23, or callweb@daff.qld.gov.au

More technical notes: www.dairyinfo.biz

The project is funded and supported by the Department of Agriculture, Fisheries and Forestry and Dairy Australia.

Dairy IN ACTION | Nutrition PLUS | Subtropical Dairy | Dairy Australia Your Levy at Work | Queensland Government