



## Feeding Management

### Technical Note N07

#### Feed for rumen microbial production

Rumen microbes need a consistent supply of balanced energy, protein, water and minerals.

To promote healthy rumen function, cows need available water; effective fibre to stimulate cud-chewing and sufficient rumen mat (fibre); plus a consistent supply of balanced nutrients.

Manage maximum daily dry matter (DM) intake with a balanced diet for protein, starch sugar and neutral detergent fibre (NDF).

#### Maximise pasture and forage intake

Homegrown forage is the cheapest source of feed for milk production. Aim for maximum daily intake of good quality forage, supplemented and balanced with other feed sources.

Allocate sufficient pasture or forage. Assess DM 'on offer', and use strip grazing and suitable grazing rotations to manage intake and quality.

Apart from forage availability, NDF is most likely to limit forage intake. A cow's daily intake of NDF from forage is limited to 1% of live weight.

The quality of grazed-forage changes from week to week, so check and balance the total diet regularly.

Minimise daily variation in forage fed. Rumen microbes can take up to 4–6 weeks to adapt, so change gradually. If changing from ryegrass pasture to oats, feed one forage at night and the other in the day to build up the microbe population.

#### Conserved forages

Well-made conserved forages contribute energy, protein and fibre. Corn silage tends to be high in energy/low in protein, so protein needs to be supplemented in the diet from other feed sources.

Conserve excess pasture at times of high growth to manage pasture quality as part of the grazing rotation.

The method of growing, harvesting, wrapping/storing, and feeding out influences conserved forage quality and its DM and nutrient intake by the cow. (Refer to Top fodder manual).

Test the quality of conserved forages before feeding (Refer to Technical Note N22: Feed testing and sampling.)

Forage chop-length is important for both silage quality and to provide effective fibre (2–5 cm).



## Grain feeding level and frequency

Avoid acidosis by minimising slug feeding  
Spread high daily grain intake over several feeds for a more steady nutrient supply to the rumen and potentially higher DM intake.

Quickly move cows onto fresh or conserved forage after feeding grain in the dairy.

Limit grain fed in the dairy to 3 kg/cow/milking.  
Use alternative feeding systems to feed grain intakes that are above 6kg/cow/day.

## Grain processing

Processing grain increases starch availability to the rumen (steam-flaked > hammer-milled > rolled > whole grain).

Wheat, triticale or barley fed during milking should be coarse cracked rather than fine ground. As part of a mixed ration, finer grinding is more beneficial.

Sorghum and corn require a higher degree of processing (hammer-milling, rolling or steam flaking) to make starch more available to the rumen microbes.

Pelleting with heat and pressure increases grain digestibility.

## Other feeds and byproducts

Can have fluctuating nutrient content and very high moisture content, leading to expensive cartage per kg DM, handling difficulties, and short 'shelf life'.

Conduct a feed analysis on any byproducts that are regularly used in the diet.

The availability of byproducts can be variable which can lead to drastic changes in the diet.

Digestive and metabolic problems can be avoided by feeding byproducts using the recommended maximum feeding levels: molasses – max. 3 kg (wet weight) /cow/day when fed in the dairy; brewer's grains – max. 15 kg/cow/day (wet weight); whole cottonseed – max. 3 kg/cow/day (wet weight).

## TMR (total mixed ration) tips

- Aim for 50% DM.
- Mix well to avoid sorting.
- Don't mix for too long, or fibre length may be reduced.



## Feeding routines

- Keep a consistent supply of energy (starch and sugar), protein and fibre to the rumen.
- Keep the routine the same from day to day.
- Minimise any drastic changes to the diet.

## Further information

Contact the DAFF Customer Service Centre by Phone 13 25 23, or  
Email [callweb@daff.qld.gov.au](mailto:callweb@daff.qld.gov.au)

More technical notes can be found at:  
[www.dairyinfo.biz](http://www.dairyinfo.biz)

Protein Plu\$ checkbook (Published 2006 by DPI&F Qld)

Feed Plu\$ CD v4.0 (Published 2008 by DPI&F Qld)

Condition magician booklet (Published 2003 by DPI Vic)

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