



Factors affecting feed intake

Technical Note N04

Major drivers of feed intake

Feed availability

- The amount of feed on offer must be sufficient to satisfy appetite and meet production targets.
- Provide equal access to feed for all cows, particularly at troughs or on a feedpad.

Feed quality

- Optimise nutrient content in diet for intake and milk production (e.g. energy, protein and fibre).
- Freshness, mould, spoilage, taste, moisture and temperature all have an affect on the feed quality and the palatability of a particular feed,.
- High neutral detergent fibre (NDF) in individual feeds and the total diet will restrict the cows ability to consume a high intake.

Feeding management

- Provide feeds and total diets that are easy to eat and digest (e.g. consider the chop length, degree and type of grain processing, the amount of green leaf available in pastures).
- Ensure mixed rations are mixed thoroughly.

NDF (fibre) content

NDF in forages and the total diet determines dry matter (DM) intake.

Diets need to be balanced to contain sufficient and effective NDF for healthy rumen function while not providing too much fibre, as this slows down digestion and limits intake.

NDF intake rules of thumb

- Optimum intake is achieved when NDF content = 28% to 34% of total diet DM.
- Maximum NDF intake from forage = 1% of the cow's body weight.
- Example: 1% x 600 kg cow = 6 kg of NDF from forage
- Maximum intake of NDF in the total ration = 1.2% of body weight (1.3% for a high-producing cow).
- Example: 1.2% x 600 kg cow =
- 7.2 kg of NDF from the total diet

Other important drivers of DM intake

- Cow size.
- Rumen health (Refer to Technical Note N02. Managing for healthy rumen function).
- Stage of lactation—early-lactation cows require higher DM intake.
- Water quality and accessibility to optimise DM intake.
- Heat stress (refer to Technical Note N13: Heat stress and nutrition).
- Overall animal health (refer to Technical Note N14: Nutrition and animal health).
- A consistent and constant supply of nutrients to maximise rumen microbial activity and DM intake.

Estimating potential DM intake from NDF

On lush, low-fibre pastures

Example: 600 kg cow on lush temperate pasture (45% NDF) and dairy meal (15% NDF).

Max. intake of forage NDF
= 1% of body weight = 6 kg

Max. DM intake of lush pasture (45% NDF)
= $6 \times 100 \div 45 = 13.3$ kg DM

Max total diet intake of NDF
= 1.2% of body weight
= 7.2kg

Max. NDF from other sources
= $7.2 - 6 = 1.2$ kg

Max. intake of meal (15% NDF)
= $1.2 \times 100 \div 15 = 8$ kg DM

Potential diet DM intake
= $13.3 + 8$
= 21.3 kg DM

Total diet NDF
= $7.2 \div 21.2 \times 100\%$
= 33.8% = Good

On mature tropical pastures

Example: 600 kg cow on dry tropical pasture (70% NDF) and dairy meal (15% NDF)

Max. intake of forage NDF
= 1% of live weight = 6 kg

Max. intake of dry tropical pasture (70% NDF)
= $6 \times 100 \div 70 = 8.6$ kg DM

Max. total diet intake of NDF
= 1.2% of body weight
= 7.2 kg

Max. NDF intake from other sources
= $7.2 - 6 = 1.2$ kg

Max. intake of meal (15% NDF)
= $1.2 \times 100 \div 15 = 8$ kg DM

Potential diet DM intake
= $8.6 + 8$
= 16.6 kg DM

Total diet NDF
= $7.2 \div 16.6 \times 100\%$
= 43.3% = Too high



Further information

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

More technical notes can be found at:
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)

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

While every care has been taken in preparing this publication, the
State of Queensland accepts no responsibility for decisions or
actions taken as a result of any data, information, statement or
advice, expressed or implied, contained in this report.

© The State of Queensland, DAFF 2013