

Feeding Kale

How much energy does a cow need in a day?

The following is an estimate of the energy requirements of a 500 kg dairy cow (in-calf).

The big energy items here are maintenance and condition gain, particularly if one whole condition score is to be added.

| | Average MJ ME / Day | MJ ME / Day (range) |
|---------------------------|---------------------|-----------------------|
| Maintenance | 57 | (43 – 65) |
| Walking | 6 | (2 MJ / km) |
| Pregnancy | 25 | (7 – 38) |
| Condition Gain | 48 | + 1.0 Condition Score |
| Total | | 136 MJ ME / day |
| | | |
| Kale (and silage) | 11 MJ ME / kg DM | |
| Total Intake | | 12.4kg DM/cow/day |
| Utilisation | | 85% |
| Allowance | | 14.7 kg DM/cow / day |

Best Practice for Feeding Kale as a Winter Feed Crop

- Kale if used correctly is a **very good source for winter feeding stock** contrary to some thoughts on kale (some people in the past have thought that it is an average source winter feed).
- Utilisation targets should be set at 85%. Any higher and farmers tend to under feed their stock because the quality that the stock is eating, is lower in terms of overall ME/kg/DM.
- Animal allocation and diet should be based on a plan – kg kale and kg roughage
- **Feed off along the longest face** – watch allocation especially on high yielding crops.
- It is critical to the success of grazing kale that the **breaks are big enough to allow the stock access to the correct amount of dry matter they require daily**. It is very easy it is to get this wrong. For example, if you are feeding a 300 metre face of kale (15 tonne DM/ha) you only need to have the electric fence less than 800cm shorter than it should be and beef go from a Maintenance + improving condition score to maintenance or less condition score.



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Kale Quality comparing Intermediate vs Giant Kale types

This table below shows the Botanical composition (% of total DM), quality (MJ ME/kg DM and its impact on predicted diet quality from different kale types.

| Plant Part | Intermediate Stem Cultivar | | | Giant Stem Type | | |
|----------------------------|----------------------------|------------------|----------------------------|-----------------|------------------|----------------------------|
| | % of total DM | Quality ME/kg DM | Diet Quality (MJ ME/kg DM) | % of total DM | Quality ME/kg DM | Diet Quality (MJ ME/kg DM) |
| Leaf | 44 | 12.9 | 12.9 | 24 | 12.7 | 12.7 |
| Upper Stem | 11 | 12.4 | 12.8 | 17 | 11.6 | 12.2 |
| Upper Mid | 14 | 11.6 | 12.6 | 19 | 9.7 | 11.4 |
| Lower Mid | 15 | 9.4 | 12.0 | 20 | 9.8 | 11.0 |
| Lower | 16 | 8.6 | 11.5 | 20 | 6.6 | 10.1 |
| Intermediate Stem Cultivar | | | Giant Stem Type | | | |
| Plant Part | % of total DM | CP | Diet Quality CP % | % of total DM | CP | Diet Quality CP % |
| Leaf | 44 | 16.7 | 16.7 | 24 | 17.7 | 17.7 |
| Upper Stem | 11 | 10.0 | 15.4 | 17 | 9.5 | 14.3 |
| Upper Mid | 14 | 7.3 | 15.1 | 19 | 6.2 | 11.7 |
| Lower Mid | 15 | 5.9 | 12.3 | 20 | 5.7 | 10.2 |
| Lower | 16 | 5.6 | 11.3 | 20 | 4.5 | 9.0 |

- As you eat more of the kale plant, metabolisable energy of the diet decreases.
- As you eat more of the kale plant, crude protein in the diet decreases

Glossary:

DM = Dry Matter

ME = Metabolisable Energy

MJ = Megajoules

CP = Crude Protein

Note: This information has been provided by Agricom NZ using sources that are believed to be reliable. Agricom does not give any warranty that all information contained is accurate or that all advice given in this publication will be appropriate for all circumstances. To the extent permitted by law, Agricom shall not be liable to anyone in respect of any damages suffered as a result of their reliance on this publication. © Agricom, 2010.