



Feeding Fodder Beet

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Fodder beet is becoming a major wintering crop for dairy cows, particularly in southern regions of the country. This seems to have been driven by the potentially high yields achievable (20-30 t DM/ha) and its high energy content (bulbs 12 -13 MJ/kg DM; leaves 10-11 MJ/kg DM).

However, some farmers have had issues when grazing fodder beet resulting in cows going down and/or dying. Leaves may contain oxalic acid, which can be toxic to ruminants at high levels (Duncan et. al 1997). Oxalic acid can bind with calcium to form insoluble calcium oxalate, which may lead to symptoms of mild milk fever. Oxalate levels tend to decline with age of crop, so grazing after 120-150 growing days may be less risky. Transitioning cows onto fodder beet lowers the risk as rumen microbes are able to detoxify oxalates.

Nitrate poisoning is another hazard particularly after cold dry spells, as plants may not have converted nitrogen into protein. Leaves can be tested for nitrates, and transitioning on the crop will help lower the risk, as cows may become less susceptible to poisoning.

Grazing frosted crops may increase the risk of bloat, possibly due to faster degradation rates of damaged cell walls. Most farmers wait for frosts to lift, and provide access to more fibrous feeds to reduce the risks.

Fodder beet roots contain high levels of fermentable carbohydrates (65% sugar in DM), low fibre, protein and minerals. The high sugar levels have resulted in cows dying of acidosis. Again, transition onto crops, provision of fibrous feeds and restricted grazing periods help reduce the risks. Protein intakes may also be inadequate, so supplementation may be required.

Major and trace minerals are higher in fodder beet leaves (tops) than roots (bulbs) (Table), so composition of the diet depends on the proportion of bulbs to leaves, plus any other feeds offered. Mineral intakes are likely to be deficient for dry cows, when bulbs comprise the majority of the diet (Table). Consideration should be given to supplementing with minerals.

Table Typical composition of fodder beet tops & bulbs (/kg/DM) & requirements in feed for dry cows (/kg DMI)

Mineral (/kg DM)	Tops	Bulbs	Dry Cow Requirements
Calcium %	1.0	0.15	0.36
Phosphorus %	0.2	0.12	0.24
Magnesium %	0.7	0.15	0.20
Sodium %	1.8	0.2	0.15
Cobalt mg	0.2	0.05	0.2
Copper mg	20	10	13
Iodine mg	0.1	0.05	0.5
Selenium mg	0.1	0.01	0.3
Zinc mg	40	100	25

Recent reports have highlighted that farms using high levels of fodder beet over winter, are more susceptible to severe and unusual cases of “milk fever” in early lactation, similar to cows in high production systems overseas (Gerloff and Swenson 1996). This has been attributed to incorrect calcium:phosphorous ratio or phosphorous deficiency, requiring including dicalcium phosphate in diets.

Although, there appear to be many potential pitfalls when feeding fodder beet, these can be overcome through appropriate management and feeding practices.

As featured in [NZ Dairy Farmer](#)

Have you considered?

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