

Fodder Beet grazing guide

Fodder beet has recently become a significant winter feed for farmers throughout New Zealand. And just like the care and attention under taken during the growing of your fodder beet crop care and attention to detail is also critical when feeding your crop.

Key points when considering grazing your Fodder beet

Immediately below we will look at the key points when considering grazing your crop and then go into more detail within this publication. For the sake of this article it is aimed at dairy cow grazing.

1. Fodder beet is only suitable as part of your winter grazing program and grazing it requires more attention to feeding off practices than kale, swedes and turnips do.
2. Knowing your crops dry matter yield (DM) is critical particularly during the very important transition period. Also know the weight of the animals you are feeding.
3. The recommended transition period is over a 10-14 day period and great care is required during this period.
4. By grazing the root and bulb together you will better achieve the correct balance of crude protein.

Note: Fodder beet is only suitable as part of your winter grazing program

Typical nutrient concentrations of fodder beet

	DM%	Crude Protein %	NDF%	WSC g/kg DM	ME / kg DM
Fodder beet average	14-20	9-14	11-16	500-700	12-12.5
Fodder beet leaves	10-13	19-23	30	100-120	11.0
Roots low DM types	10-13	9-11	13-15	650	11.8-12.8
Roots high DM types	15-20	10	11	700	12.2-13

Note: As there are significant difference between roots and tops careful allocation of them is required. A typical feeding ration when grazing fodder beet is 50-60% fodder beet, 30-40 % grass silage with the balance of the diet being hay or straw.

Knowing your crops dry matter yield (DM) is critical...

Fodder beet is difficult to measure for many reasons. The crops yield will be affected by its uniformity, the seed line quality, vigour, access during growing to water and nutrients and soil type your crop is grown in, to name a few.

This said, accurate measurement of your crop is critical particularly if transitioning stock onto it. Even more important if your stock hasn't grazed on fodder beet before.



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Measuring your fodder beet dry matter yield

We recommend that you should get your crop weighed by an independent professional source. However below is a useful formula to use, should you decide to do it yourself.

Notes: This example we will only measure the bulb weight, however the formula is common to estimating the leaf weight as well. We suggest that for best results when weighing your crop you need to weigh the bulb and leaves separately, and do multiple (8-12) measurements throughout the crop.

1. Know your row spacing by measuring the distance between the centers of ten rows. Once this distance is known divide it by 10. E.G the distance between the centers of 10 rows was 4.5 metres then your row spacing is 0.45 of a metre.
2. To get a sq metre divide this figure into 1 i.e. $1/0.45 = 2.22$, therefore if you measure 2.22 metres of row it equals 1 sq metre.
3. Measure out 4.44 (2 x 2.22) metre row and weight the bulb and leaves separately making sure you remove any dirt. It is very important to measure 2 x 2.22 for better accuracy. (In this example after removing the bulbs from our 4.44 metre row, taking the leaf off and removing the dirt the bulb weight was 36 kgs.)
4. Take the 36 kgs per sq metre x's it by 10,000 (that's how many sq metres there are in 1 hectare) and you get 360,000 kgs fresh weight per hectare. You then multiply it by either the known or estimated dry matter % the bulbs may have. In this example its 14%. So 360,000 kgs x's 14% equals 50,400 then divide this by 2 (remembering you originally measured 2 x 2.22 metres or as we know 2 sq metre) therefore the paddock has 25.2 tonne dry matter per hectare.
5. Repeat steps 2 and 4 in several places (8-12) throughout the paddock to get a reliable average. When moving into a new paddock repeat all 4 steps.

Transitioning your stock on to fodder beet

Transitioning your stock on to fodder beet is the most critical part of the grazing program. It is unrealistic to expect your stock to go from their normal diet to a fodder beet based diet without doing this phase very well, this statement is particularly true if stock have never grazed fodder beet before.

Dairy cows and cattle

The transition period should last for between 10 and 14 days, the aim during this time is to decrease the amount of pasture/silage your cows receive and increase the amount of fodder beet they receive.

The starting point is 2 kilograms of fodder beet of dry matter, per cow, per day. Increase this allocation by 1 kg DM every two days until final allocation is achieved. The final allocation will



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depend on your stock typically for MA cows its 9-10 kgs DM/day and R2 heifers it's 6-8 kgs DM/day.

During this period ensure stock don't start grazing with an empty rumen. The animal's rumen is going through big changes during this 10-14 day period it's important to ensure you supply sufficient silage, or pasture and fresh water to meet your stocks energy requirements during this time.

Sheep

It is suitable to graze all classes of sheep on fodder beet. Lambs, hogget's pregnant and lactating ewes can be safely grazed onto fodder beet. There is also no need for a 14 day transition period as is the case with cattle. Sheep can be transitioned onto fodder beet much the same as any other winter feed crop.

That is to say they should be allowed access to the crop for a few hours daily for 3 days then they can be locked on to the crop. There is also a reduced need for supplement with about 100 grams/per head/ per day required. However this supplement needs to be of higher quality than cereal straw as the sheep require a lift in protein. Grass silage is ideal.

The suggest maintenance energy requirements for late pregnant ewes are approximately 20-25 MJ ME/Day or 1 ½ - 2 kgs DM FB with supplement, hogget's and lambs 10 – 15 MJ ME/Day or 1 kg DM FB with supplement.

Other tips for feeding fodder beet

Another important point to consider is to allow plenty of room on the fodder beet break so every animal has access to it. To do this it is recommended that they have a "long break face" this may require the removal of a fence line, all the time ensuring the correct allocation for the day. If your stock have not grazed fodder beet before it may pay to smash or chop up some of it up so they can acquire a taste for it.

As some animals adjust better and quicker to fodder beet than others check that they eat all the correct daily allocation and do not graze to a time period.

By grazing the root and bulb together you will better achieve...

As you can see from the table above (Typical nutrient concentrations of fodder beet) there are significant differences between the make-up of the leaf and bulb with fodder beet. The bulbs when compared to leaves have much higher water soluble carbohydrates, lower NDF and much less crude protein. As the leaves typically will make up between 20% to 25% of your crops total dry matter yield, grazing both tops and bulbs together will overcome any crude protein deficiencies.

As we know dry cows require between 12% – 14% crude protein per day, so it's important to know what proportion of your crop is bulb and leaf. The above yield assessment formula will give you the proportion of leaf to bulb your crop contains.



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There needs to be some monitoring of crops during the season as leaf can change during the growing season particularly in high yielding crops as in these cases the bulbs tend to be a bigger part of the crop and the leaf proportion drops below 20%. For this reason we don't recommend a straw and fodder beet diet alone as cereal straws have very low crude protein levels.

Also should you be lifting the crop and therefore removing the leaf you will need to find an alternative source of crude protein.

While grazing there are some stock health issues that need attention the two most common are acidosis and oxalate poisoning. Acidosis symptoms include diarrhoea, laminitis (sore feet) and cows lying down not chewing their cuds and the symptoms of oxalate poisoning are very similar to those of milk fever.

We strongly recommend that you should consult with your vet prior to grazing fodder beet to make yourself aware of these and any other stock health issue grazing on fodder beet may bring up.

Conclusion

We hope you have found the above information helpful. I was once told that if your stock die while grazing on fodder beet, the reason for this was completely under your control. Seeking the best advice if you are unsure on any aspect of grazing your fodder beet is important.

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