

Beet for Grazing – Sheep

Your way to reduce feed costs and improve earnings

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A beet crop on your farm may save your working time and deliver a highly competitive feedstuff for your animals



Beet is a well-known crop in temperate regions, especially in the northern hemisphere

Today beet is mainly grown for sugar production, but beet is also well utilised as a forage crop for livestock in many places around the globe. In the past, beet made up a substantial part of the daily feeding ratio for dairy and young cattle. For example, in northern Europe the beet crop made up for 15 – 20 percent of the entire agricultural arable land – and for good reasons too!

In recent times, fodder beet has seen a resurgence in New Zealand where it is now well understood how to feed high levels of fodder beet (80–90 percent of the dry matter intake) while directly grazing the beet in-situ.

This introduction aims to give you an understanding of how to successfully graze fodder beet to achieve high level animal performance. We deal with production values in the field as well as feeding and nutritional aspects. It is important to emphasise that even though this introduction provides some hints on why and how, you should never start grazing your animals without proper advice!

We will take you through a selection of topics and we trust that you will discover why beet is an underestimated feed crop – with a potential to enhance your production, reduce your feed costs and lift your earnings!

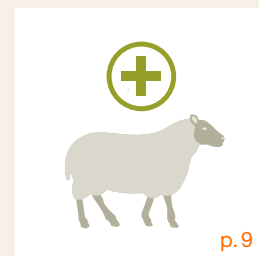
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So, for good reasons beets were for centuries one of the most valuable crops on many farms. But what might be the reasons to grow beet under a modern grazing technique?

Let's first conclude that the species beet (*Beta Vulgaris*) is a vigorous and very robust crop which has a yield potential of more than 30 tonnes dry matter per hectare. This offers greater potential to reduce feed costs per unit of dry matter grown. The long vegetation period offers positive greening effects as well.

On the farm the crop adds diversification in the crop rotation. And where we see more and more severe climatic events the beet crop offers security and consistency in feed supply.

The beet types you grow for in-situ grazing have a lower dry matter content, grow high out of the ground and facilitate grazing. The well-known high dry matter types give extremely high dry matter yields but are not suitable for grazing. However they can be harvested and fed to animals as part of a standard feeding program.

With the fodder beet types for grazing you achieve an easily digestible fodder that can be grazed safely once introduced through a proper transition, whatever your animal type may be; sheep, cattle or deer.

1. Why Fodder Beet?



Fodder beet has a number of qualities that make it attractive as a forage feed

Yield – Yields of 20–30 tonnes of dry matter per hectare, including the leaves, are typical and can be achieved with sound management. In comparison, forage brassicas typically yield 12–15t dry matter per hectare.

The high yields allow for high stocking rates and the ability to reduce the total area required for the forage crop.

Quality – It is measured in megajoules of Metabolisable Energy (MJME), fodder beet has an ME value of 12, which is high for a forage crop (e.g. barley grain has an ME 13). This quality remains consistent across the season. Depending on the local environment, beet can be grazed with good quality while the production in pasture fields has declined.

Fodder beet is relatively low in crude protein and fibre. The target is for 20 percent or more of the DM yield coming from the leaf which helps ensure there is enough protein in the diet for most animal classes.

Quality and content of Fodder Beet

	Dry Matter	MJ ME	Crude Protein	Neutral Detergent Fibre	Calcium	Phosphorus
	(%)	(kg DM)	(%)	(%)	(%)	(%)
Leaf	9–23	11.5–12	11.4–25.9 (17.0)	12.4–46.9 (29.9)	0.39–3.9 (1.6)	0.06–0.4 (0.26)
Bulb	8–20	12–12.5	5.1–10.7 (7.8)	7.8–14.9 (10.6)	0.01–0.05 (0.02)	0.08–0.38 (0.18)

Source: Adapted from Gibbs J, et al. 2015. Feeding fodder beet in lactation and to replacement heifers. SIDE (South Island Dairy Event)

Value – Aligned with achieving high yields, the cost per kg DM is low when achieving typical yields of 20t DM/ha or more. The cheapest crops are commonly those with the highest yields and grazing in-situ means that the animals harvest the crop. In New Zealand, grazed pasture is the lowest cost feed and fodder beet is the next cheapest grazed crop.

Flexibility – Fodder beet can safely be fed to a range of animals; sheep, young and old beef cattle, dairy cows as well as replacement heifers. Furthermore, they can be offered to them from the autumn, through winter and into the following spring. Should you need to, the crop can be harvested and fed out to animals elsewhere.

Animal performance – Compared to cattle performance, the individual growth rates able to be achieved with sheep is comparatively low, however fodder beet allows for very high stocking rates, 200 ewes/hectare and 300 or more lambs/hectare, which enables high carrying capacity and high levels of total meat production per hectare, along with improved land use efficiency.

All in all – with the understanding of these key characteristics and the established knowledge and experience of grazing fodder beet you too can reduce forage feed costs and improve earnings on your own farm.



” Fodder beet is a vital tool to reduce costs while increasing profit per ha.

David & Jaimie Price
Presteigne
Wales

Father and son David & Jaimie Price manage a farm near Presteigne in Mid-Wales, where they operate 630 acres and keep 1,200 sheep and 80 suckler cows. The Price's have been developing a low-cost farming system with the use of fodder beet in their rotation. Their aim is to outwinter all of their breeding ewes for a 2–3 month period which allows the remainder of the grassland on the farm to be rested for lambing time. Yielding around 20 tonnes of dry matter per ha, fodder beet enables many sheep to be wintered on a relatively small area, allowing preservation of grass ready for spring lambing.

2. Practical Feeding of Fodder Beet



Transition

Compared to cattle, the transition of sheep is straight forward as they are less prone to suffer from rumen acidosis, mainly because they can regulate their intakes better. Lambs, as for hoggets and ewes, require access to fodder beet for around 2 hours per day for 3–4 days after which they can then be left in the fodder beet crop.

Feeding frequency

An important aspect of feeding fodder beet is the use of electric wires which are shifted every 1–2 days. This is called breakfeeding and is important because it ensures sheep have equal access to both leaf and bulb and enables protein requirements to be met. If sheep are given access to a large grazing block, they will eat all the leaf first, and then the bulb. When the bulb is their only diet for more than a few days, there won't be enough protein available to maintain normal rumen function. Affected sheep initially reduce daily intake, which leads to poor production and a high risk of developing pregnancy toxemia in pregnant ewes.





Lambs

The primary benefit from grazing lambs on fodder beet is the ability to hold many lambs per hectare through winter, a high stocking rate. A reasonable yielding crop will hold 300 or more lambs per hectare. Expected growth rates for lambs on fodder beet is around 100 grams per day with higher growth rates not feasible because fodder beet itself does not supply enough protein for growing lambs. Therefore, the primary strategy is to carry these lambs through the winter at a high stocking rate and while pasture growth rates are low. As spring pasture growth

increases lambs are let onto pasture where liveweight gains will increase and lambs can be finished or kept as replacements. The total weight of meat produced is very high, even if the individual lamb growth rates are modest. In most cases, some additional feed (100 g DM/animal/day) is used to optimise protein, minerals and fibre requirements. Ideally this would be fresh pasture, but it can also be high-quality grass silage or lucerne silage. Lambs can be given a 2-day allocation of fodder beet which will ensure a balanced supply of leaf and bulb.



Hoggets and ewes

As for lambs, with the high DM yields, fodder beet can hold many hoggets and ewes per hectare, typically between 150–200 animals/ha. Typically used as a feed through winter, fodder beet is fed from the autumn through to the following spring, providing a flexible feeding window that is available as seasonal demand requires. As with cattle, sheep require long strip access to graze the crop.

Fodder beet will meet the nutritional requirements of hoggets and ewes, even pregnant ewes if the crop has grown well. A high proportion of healthy green leaf at the time of feeding can contribute to 25 percent or more of total dry matter intake.

The required amount of high-quality supplement is similar to the requirement for lambs. An alternative to feeding conserved supplement into the field is to have a grass field adjacent to the fodder beet field where animals can strip graze the grass every two days (200 grams of grass per animal) to supply protein, minerals and fibre requirements.

Pregnant ewes should be removed from the fodder beet 2–3 weeks prior to lambing and setstocked onto pasture.

For non-pregnant ewes, a well grown fodder beet crop with a healthy green leaf canopy will supply a ewe's full dietary requirements, including protein.

3. Animal Health



Clostridial diseases

The most critical issue in feeding fodder beet to sheep is clostridial disease. This is prevented by administering a comprehensive vaccine prior to animals being let onto the fodder beet crop.

Internal parasites

For lambs especially, it is useful to give them a drench just prior to going onto the crop to help clear any burdens that might limit animal health. It is important that lambs do not go onto pasture after the drenching to avoid an infection with parasites.

Trace elements

Trace mineral supplementation must be carried out following each farm's requirements. Fodder beet is generally low in selenium. Therefore this trace mineral may need to be added to the diet.

Generally, due to relatively high soil intake when grazing fodder beet, some nutrients can influence the uptake and availability of others. Soils containing high levels of molybdenum may, for example, lead to trace element imbalances, as it can hinder the uptake and availability of copper.



” Fodder beet carries 100 sheep/ha for 100 days through winter

Marc Jones,
Welshpool
Mid-Wales

Marc Jones is running a 500-acre tenanted farm on the Powis Estate with a flock of 600 New Zealand Romney breeding ewes alongside a dairy beef enterprise at Trefnant Hall. The flock runs at a high stocking rate of 12 ewes/ha achieved by excellent grassland management through rotational grazing and the wintering of the ewes on fodder beet. The fodder beet provides a complete diet through the winter months and allows a higher stocking rate and safeguarding of grass for the spring. Feeding no concentrates, Marc winters his sheep flock on fodder beet until 3 weeks before lambing.





Your Opportunity

Fodder beet is a high value feed that can be grazed successfully in-situ achieving high levels of animal performance and reducing feed costs. To take advantage of these opportunities and discuss how fodder beet can benefit you, please do not hesitate to contact KWS for further information.

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