

ANGUS MONITOR FARM Fodder Beet – A Useful Alternative Forage?

THE CHALLENGE

The growing of swedes and turnips throughout Scotland has become more and more challenging with the recent changes in legislation for the use of pesticides. This has resulted in higher costs and in some cases failed crops, bringing additional risk and inefficiency.

Fodder beet has been adopted by some farmers in Scotland as an alternative forage crop to help address these issues. Three of the management team at the Angus Monitor Farm decided they would like to try out growing fodder beet as a forage for sheep and cattle

WHAT WE DID ON FARM

Three of the farmers within the management team grew fodder beet for the first time on the farms for the 2018/19 winter. Several varieties were grown on the different farms. The approximate yield and analysis of the varieties from the sales brochures are detailed below:

	Relative DM Yield %	Relative Fresh Yield %	DM Content	Skin Colour	% of Root in Ground
100% = Tonnes/Ha	18.3	88.2			
Geronimo	11.28	85	15.0	Yellow	45
Lactimo	87	101	15.0	Yellow	45
Monro (DLF)	81	141	11.8	Red	40
Bangor (DLF)	107	123	18.0	Yellow	52
Blaze (Limagrain)	95	105	18.8	Red	57.1
Brick (Limagrain)	117	103	23.6	White	75.0

Table 1 Varieties Grown Source: Limagrain, DLF, Elsoms

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The beet was sown in May 2018 on fields varying from approximately 80m to 165m above sea level. The row width (0.4m and 0.65m) and seed spacing (125mm to 250mm) varied depending on the drill and machinery (either adapted swede drill or purpose made beet drill) available to sow the crop on each farm. Agronomy also varied between the crops depending on the agronomist and the farm conditions.

The growing season could be described as dry, warm and sunny and the crop emerged well even with very little rain in the first few weeks. Once emerged the growth of the crops was steady with growth continuing well through a very mild/dry autumn and winter. Crops were measured around the first week of November (see table 2) but continued to bulk through the early winter.

RESULTS

	Variety	Geronimo/ Lactimo	Munro	Bangor	Blaze	Brick
Fresh Yield (t/ha)	Leaves	67	54	60	36	36
	Bulbs	116	118	98	100	88
	Total	183	172	158	136	124
Dry Matter	Leaves	8.1%	10.2%	9.7%	11.7%	13.1%
	Bulbs	15%	16.5%	6.93%	10.2%	11.2%
Dry Matter Yield (t/ha)	Leaves	5.43	5.51	5.82	4.21	4.72
	Bulbs	17.40	19.47	6.79	10.20	9.86
	Total	22.83	24.98	12.61	14.41	14.58
ME (g/kg DM)	Leaves	10.4	11.1	11.8	11.1	11.2
	Bulbs	12.8	13.2	13.5	13.3	13.6
CP % (DM)	Leaves	15.4	15.8	21.5	22.9	16.3
	Bulbs	2.9	6.9	16.5	5.2	2.3
Growing Costs (£/ha)	Seed	£194.00	£182.70	£182.70	£190.00	£190.00
	Fertiliser	£267.65	£356.00	£356.00	£298.80	£298.80
	Sprays	£62.35	£185.40	£185.40	£250.00	£250.00
	Cultivations	£190.00	£210.00	£210.00	£240.00	£240.00
	Total	£714.00	£934.10	£934.10	£978.80	£978.80
Cost/t/DM (bulbs)		£41.03	£47.98	£137.57	£95.96	£99.27

Table 2 Fodder Beet yields and costs

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Yields varied from farm to farm and between varieties, with the Geronimo and Lactimo giving the highest fresh yields. Munro was the crop which gave the highest dry matter yield at 24.98 t/ha. Growing costs varied significantly, particularly in the agrochemical costs, with one grower only spraying the crop once for weeds. Cost of production per tonne of dry matter varied from widely £41.03t/DM to £137.57/t/DM.

Most of the crops were fed to sheep with some fed to cattle. Care had to be taken when transitioning the sheep onto and off the fodder beet to minimise the risk of acidosis. One farm had an issue with this and lost a ewe. Another farm fed fodder beet through the day and swedes at night and had no issues. Straw or silage were fed in all cases to offer fibre and help mitigate any digestive upsets in the stock.



Figure 1: Difference in bulb size at different seed

All the farms involved were impressed with the yields of fodder beet that were achieved, but in a dry and sunny season it is difficult to know if this was an exceptional year. Seed spacing appears to be an important factor as can be seen in figure 1 above. The top row and bottom row were double sown (125mm spacing) giving a higher plant density. The middle row was sown at the normal row spacing (250mm). Although there was more beet in the closer spacing the yield difference was not that different. There therefore could be a significant reduction in seed cost with little reduction in yield as the beet had room to grow.

All farms were impressed with the yields and how well it fed and lasted when feeding to livestock, with ewes taking a while to get used to eating it but once transitioned on, performed well. Having the option to lift some beet and feed to sheep when housed or when moved onto grass is seen as a real benefit to help transition off the crop.

WHAT HAS CHANGED ON FARM

All of the farmers that grew in the 2018 season are growing again in 2019 with some different varieties being used. All farms have looked at their variable costs to try and minimise the expense of growing the crop but maintaining the yields. 2019 season so far has been wetter,

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colder and with less sun and it will be interesting to see how the 2019 crop yields compare to 2018. Management of transition is seen as key to maximising the crop and phasing, mainly the amount of time ewes get to graze the crop will be changed to minimise the risk of acidosis. An update on this topic will follow later in the year. As a result of the interest in fodder beet in Scotland, a Monitor Farm innovation project is exploring varieties and **agronomy across seven farms.**

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