

# Beet Crop Husbandry



Beet is an extremely high yielding fodder crop that is easy to grow but attention to detail is vital. The recipe for success with beet is 'Sow early in a dry field free from scutch, ensure adequate lime and fertiliser are applied, control weeds, protect from pests and diseases, harvest when mature and balance diets properly at feeding time

**Rotation:** Beet should only be grown after two years have elapsed since a beet, brassica or oil seed rape crop was grown.

**Sowing period:** Sugar Beet can be sown from mid March. Fodder Beet can be sown from early April. Beet is a sensitive crop and will not thrive in harsh conditions. For maximum yields, sow as early as possible under favourable weather and soil conditions, delays after mid April will reduce yields by about 4% per week. Latest sowing time is late May

**Seeding rates:** Seeds are precision drilled. Aim to establish 30,000 plants per acre. Average field emergence for sugar beet is about 70% (range 55% to 80%) and is a little less for fodder beet. With 56cm (22") row width and 18cm (7") spacing 40,700 seeds are planted per acre, assuming 74% establishment this gives 30,000 plants per acre. Sow at a depth of 3.2cm.

## Varieties:

A good range of varieties are available as listed on previous page.

**Lime:** Target pH of 7. Ideally, lime should be applied one year ahead of growing a beet crop.

**Fertiliser:** Fertiliser recommendations are as shown in the following table:

Boron should be applied to all beet crops. Choose a compound fertilizer with boron and apply before sowing and mix into soil. Nitrogen topdressing can be applied at 4-8 leaf stage. Low boron soils may need a further foliar boron application in June/July. Manganese and Magnesium will need treatment if soil levels are low, foliar applications are best at 4-10 leaf stage.

Soil Index for NPK	Index 1	Index 2	Index 3	Index 4
Nitrogen	195kg/ha (156units/ac)	155kg/ha (124units/ac)	120kg/ha (96units/ac)	80kg/ha (64units/ac)
Phosphorus	70kg/ha (56units/ac)	55kg/ha (44units/ac)	40kg/ha (32units/ac)	20kg/ha (16units/ac)
Potash + Sodium	320kg/ha (256units/ac)	240kg/ha (192units/ac)	160kg/ha (128units/ac)	80kg/ha (64units/ac)

**Weed Control:** Poor weed control is the most common cause of crop failure. Beet is a poor competitor with weeds. The aim is to keep the crop weed free until at least eight weeks after emergence. There are a range of herbicides available and two applications will be required in most crops. Very early sown crops may require a third application. Each application usually includes at least two herbicides and possibly an adjuvant. Herbicide choice, rate of application and timing are critical and it is recommended to get advice from an experienced agronomist.

Broadleaf weed herbicides include: Betanal MaxxPro, Safari Lite, Wizard, Debut, Goltix, Target SC, Venzar.

Grass weed herbicides include: Falcon, Fusilade Max, Stratos Ultra.

**Pest problems:** Due to the slow development of beet seedlings and the fact the crop is sown to a stand, beet is very prone to pest problems particularly slugs, leatherjackets and rabbits.

**Slugs:** They feed on the leaves and stems and big losses can occur. Apply slug pellets preventatively in a band at sowing or broadcast at first sign of attack.

**Leatherjackets:** Roots and stems are attacked at or just below soil level causing death of young plants. Seed treatment is the only control mechanism.

**Flea Beetle:** Adult beetles eat holes in the leaves of seedlings, especially in dry weather. Control with appropriate contact insecticide.

**Aphids:** Black Aphids cause leaf curling and sap loss. The Peach Potato Aphid spreads Virus Yellows which can reduce yields in some seasons. Control with appropriate contact insecticide.

**Mangold Fly:** The larvae feed between the upper and lower leaf surface of seedlings. Control with seed treatment/Foliar application of appropriate contact insecticide.

**Rabbits:** Shooting, trapping and Rabbit Bait are moderately effective. Where numbers are high a wire fence, either mesh or electrified will give best results but must be erected properly.

**Disease:** Ramularia Leafspot and Rust are the main problems and usually occur in the autumn. They can result in severe defoliation which will increase harvesting losses with belt lifting harvesters. Crops to be harvested after Nov 1st should be treated with a fungicide in late July or early August. For crops to be harvested in October, treatment is justified when disease symptoms are seen before August 1st.

**Harvesting & Storage Information:** Beet should be mature at harvest and well crowned at the leaf scar. Allow 1 square metre of hard surface per tonne of beet. Do not cover the beet for 2-3 weeks after storage. Protect from low temperatures (<-3°C) and frost by covering the clamp with 20cm of straw or a suitable cover. Ventilation is required to reduce heat build up and rotting. The best dimensions for a naturally ventilated clamp are 4m wide at base, wedge shaped with a maximum height of 2.5m and as long as is required. The varieties with the higher dry matter contents will store better, with less losses.

**Feeding Information:** Beet is a high energy, low protein and low fibre feed. Treat it as a forage concentrate as it digests very quickly in the rumen. Roughly 4kg Sugar Beet = 1kg Barley and 5.5kg Fodder Beet = 1kg Barley. It is important to introduce beet gradually, allow a two week introduction period. The total diet must be balanced for protein, fibre and minerals particularly Calcium, Phosphorus and Copper. Roots must be clean and washing is preferable. Beet should be chopped as this greatly increases intakes, this is most important for younger cattle and for sheep. Beet is a highly palatable and highly digestible feed and in a properly balanced diet it should result in excellent animal performance and more efficient milk and meat production. Low Dry Matter Fodder Beet can be grazed in situ where soil and weather conditions permit.

### FODDER BEET :

Dry Matter yield:	13 – 20 t/ha
Fresh yield:	70 – 110 t/ha
Dry Matter:	12 – 19 %.
Crude Protein:	6 – 8 %
ME (MJ/kg DM):	13.5

### SUGAR BEET :

Dry Matter yield:	13 – 20 t/ha
Fresh yield:	55 – 88 t/ha
Dry Matter:	21 – 22.5 %
Crude Protein:	5 – 7 %
ME (MJ/kg DM):	14