



## Beet Production Basics

Sugarbeet is a biennial plant developed in Europe in the 1700's from fodder beets. During the first growing season, the plants store sugars in the root for an energy source during overwintering. The roots are harvested for sugar at the end of the first year. Yields of 25 to 35 tons/acre are possible. Plants which overwinter in a mild climate will produce flowering stems and seed during the following summer and fall. Sugarbeet is a summertime crop in cooler climates and a winter or summer crop in warmer regions. Sugarbeet seed for the United States is grown where the climate is cool enough for vernalization but warm enough for the roots to live through the winter.

### Planting

- Sugar beets are an early season crop that can tolerate light frosts. Planting in early to mid-April is ideal, though they will tolerate later planting until late May.
- Beets can be planted in 30 inch rows, but for maximum yield a row spacing of 20-22 inches is ideal.
- Beets are seeded at 54,000 seeds per acre. Expect about 60-70% emergence to achieve a final stand of 30000 to 40000 plants per acre.
- Planting depth is 0.75 to 1.25 inches.
- Beets have been planted in no-till and strip till seedbeds. Good residue management in the row is essential.
- Uniform seedbed or seedzone preparation is KEY for successful germination and stand establishment in both tilled and no-till situations.

### Soil Fertility

- Nitrogen requirements are in the range of 100 to 120 pounds per acre. Adequate N availability early in the season to promote rapid growth and rapid canopy development. Avoid excess N late in the season to help promote sugar accumulation.
- Beets can benefit from a starter fertilizer under some conditions.
- Adequate P and K levels are important.
- P and K requirements are modest. At optimum soil test levels, requirements are 35 lbs P<sub>2</sub>O<sub>5</sub> and 50 lbs K<sub>2</sub>O per acre.
- Micronutrients – beets do not typically respond to micronutrients unless the soils are very low in boron, manganese or zinc.
- Soil pH should be near 6.5

### Crop Rotation

- Three year rotations are the absolute minimum length of an acceptable rotation.
- Four year or longer rotations are desirable to minimize root disease, Cercospora leaf spot and herbicide carryover.
- Avoid herbicide carryover that may damage sugarbeet or rotational crops
- Atrazine is a key herbicide to avoid. Many beets are produced following corn in other regions, however, and corn herbicide recommendations have been developed, so beets after corn can be a good rotation.



### Weed Control

- Early weed control is essential for optimal yield production. Newly emerged beets can lose yield potential during early competition for nutrients and water with weeds.
- In conventional beets, a range of pre emergent and postemergent herbicides are available. Beets can also be cultivated.
- Roundup Ready beets have been developed but are not registered yet for commercial plantings.
- With Round Ready beets, good stewardships tactics used in other crops would also be essential: rotation of herbicide families during a crop rotation, control of RR volunteer crops, and tank mixing with other herbicides when appropriate.

### Pest Management

- Common insect pests such as wireworm, cutworm and flea beetles can be problems under some conditions.
- Several diseases can occur in beets. The most common observed in Pennsylvania has been Cercospora leaf spot. Fungicides are available to control the disease. There is
- Other foliar diseases, seedling blights and root rots can affect the crop. Commercial seed treatments help to manage seedling diseases. Varieties have been developed with resistance to some of the common root rots such as Rhizoctonia and Rhizomania.
- Beets are less preferred by groundhogs and deer than other crops like corn, soybeans, sunflowers or canola.

### Harvesting

- Harvesting is done in the fall: September through November. Beets are “lifted” or pulled from the soil rather than dug as you might think.
- Beet tops are removed using a mechanical defoliator prior to harvesting. Leaf removal helps reduce leaf growth in storage piles.
- Harvesting occurs immediately following topping.
- Beets could be transported immediately to a processing facility or stored in field edges for later pickup and transport.

For more information, contact:

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