



Raising High Quality Sugar Beets at Southern Minnesota Beet Sugar Cooperative Quicksheet

Soil Sampling

- SMBSC Soil Analysis Program – SMBSC will pay for analysis of soil samples when submitted through the SMBSC program. Contact your soil sampler or Agriculturist for details on the program.
- Create meaningful soil sampling zones to accurately identify fertility differences within your field.
- Soil sampling by management zone or grid is recommended and allows for variable rate fertilizer application.
- It is recommended to soil sample nitrate nitrogen at 36 – 48” depths. Sugar beets utilize residual nitrogen found at the 36” depth and below. Excess nitrogen may reduce sugar content.

Fertility

- 150-170 pounds of total nitrogen per acre following field corn (depending on organic matter and manure history). 130 pounds of total nitrogen per acre following all other crops. The total includes applied fertilizer and residual nitrogen from a 4-foot soil sample.
- 3 gallons of a liquid starter fertilizer applied in furrow helps to develop earlier leaf canopy, which leads to increased yield. Starter is highly recommended when planting into cold soils temperatures.
- For phosphorus soil tests of 8ppm or higher, a starter should supply enough phosphorus for the growing season. For lower soil tests, broadcasting MAP or DAP in addition to the starter will likely be beneficial.
- Potash should be applied for any soil tests below 150ppm.

Control Moisture

- Controlling moisture either through pattern tile or irrigation depending on the field has been shown to have a positive impact on the sugar beet crop.

Variety Selection

- SMBSC Agriculturists are excellent resources for variety selection and placement in your fields.
- The variety approval data and the Seed Selection Guide can be found at <https://www.smbc.com/agronomy/AgronomyDefault>

Planting and Stand Establishment

- **Patience at planting.** You only get one opportunity to plant a field correctly. Planting before the field is ready can result in poor sugar beet stands and compaction that will reduce yields and profitability.
- A uniform stand is important for defoliating and harvest operations and delivering clean beets.
 - SMBSC recommends a planting population of 57,000 to 63,000 seeds per acre (5” to 4.5” seed spacing)
 - Recommended planting depth of 1.25”.
 - Target final plant populations of 200 sugar beets per 100’ of row in 22” rows.
- Sugar beet stands less than 100 beets per 100’ of row may warrant replanting to maximize yield.
- Use of a spring cover crop/nurse crop of small grains protects sugar beet stand, increases revenue per acre, and reduces soil erosion.

Weed Control

- Pre-emerge application of Dual Magnum and/or ethofumesate improves weed control.
- Broadcast rates of pre-emerge ethofumesate greater than 2 pints/A can reduce spring cover crop establishment.
- Use the highest labeled rate of glyphosate for the sugar beet growth stage.
- Layby applications of Dual Magnum, Outlook, or Warrant reduce late emerging waterhemp.
- Pre-emerge and layby applications are important because we have **limited post emergence rescue options!**

Root Disease Management

- All seed planted at SMBSC is treated for Aphanomyces and Rhizoctonia.
- **Aphanomyces:** Use of lime application, tile drainage, and tolerant varieties can minimize the effects of this disease.
- **Rhizoctonia:** Use of in-furrow or post-emerge fungicide applications and tolerant varieties can minimize the effects of this disease.
- **Rhizomania:** Longer crop rotations decrease the potential for economic loss to Rhizomania.
- **Fusarium:** Use varieties with genetic tolerance if you have any field history of Fusarium.

Cercospora Leaf Spot Management

- Use a program approach of cultural practices, tolerant varieties, variety placement, and timely fungicide applications.
- Always tank-mix two effective modes of action with every CLS fungicide application.
- Applying a fungicide prior to row closure is necessary to control the initial CLS infection.
- Take the time to ensure products are fully mixed, the spray boom is an appropriate height, that you are using a pressure compatible with your nozzles, and that you're getting even spray coverage.

Harvest

- SMBSC requires all green material be removed at defoliation and recommends a 2" diameter scalp. These practices can improve storage and decrease impurities delivered in the sugar beet.
- Proper scalping reduces the chances of regrowth in sugar beet piles and can improve storage.
- Proper beet temperature at harvest provides the best opportunity to store the beets long-term over the winter storage season. SMBSC will suspend harvest to ensure sugar beets going into storage are not too warm or have frozen tissue.

Fall Cover Crops

- SMBSC recommends the use of fall seeded cover crops to reduce soil erosion on early harvested fields.

Quicksheets

- Quicksheets for Nutrient Management, Weed Control, CLS, Rhizoctonia, and Cover Crops are available at <https://www.smbsc.com/agronomy/AgronomyDefault>

