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 can reduce sugar content.

Fertility

- 110-150 pounds of total nitrogen per acre (depending on organic matter, previous crop, and manure history). 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 show 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 Performance and Database can be found at https://www.smbsc.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 lifting operations and delivering clean beets.
    - SMBSC recommends a seed spacing at planting of 5” (57,000 seeds per acre)
    - 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 increases 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 resistant varieties can minimize the effects of this disease.
- **Rhizoctonia:** Use of in-furrow or post-emerge fungicide applications and resistant 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 resistance if you have any field history of Fusarium.

Cercospora Leaf Spot Management

- Use a program approach of cultural practices, resistant varieties, variety placement, and timely fungicide applications.
- Always tank-mix two effective modes of action with every CLS fungicide application.
- Applying an early fungicide prior to row closure has provided increased CLS control in both small plot and grower fields.

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 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

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Agricultural Department
Southern Minnesota Beet Sugar Cooperative