Raising High Quality Sugar Beets at Southern Minnesota Beet Sugar Cooperative

Soil Sampling

- SMBSC Soil Analysis Program – SMBSC will pay for analysis of soil samples when submitted through the SMBSC program.
- Soil Analysis Quicksheet:
  http://www.smbsc.com/Agronomy/AgBeet/2019%20SMBSC%20Fertility%20Analysis%20Program.pdf
- Soil sampling by management zone allows for variable rate fertilizer application.
- Nitrate nitrogen samples to 4' depth. Sugar beets utilize residual nitrogen found at the 4' depth and below. Excess nitrogen reduces sugar content and revenue per acre.

Fertility

- 110 pounds of total nitrogen per acre with a four foot soil sample.
- 3 gallons of a liquid starter fertilizer applied in furrow helps to develop earlier leaf canopy, which leads to increased yield.
- Soil Fertility Quicksheet: http://www.smbsc.com/Agronomy/QuickRefSheets.aspx

Seed Variety Selection

- SMBSC Official Variety Trial Results: http://www.smbsc.com/Agronomy/VarietyInfo.aspx
- SMBSC Variety Descriptions: http://www.smbsc.com/Agronomy/VarietyInfo.aspx
- SMBSC Agriculturists are excellent resources for variety placement in your fields.

Planting and Stand Establishment

- SMBSC recommends a seed spacing of 4.75 – 5" (57,000-60,000 seeds per acre).
- Planting depth of 1.25".
- 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.
- Use of a spring cover crop/nurse crop of small grains increases sugar beet stands, increases revenue per acre, and reduces soil erosion.

Sugar Beet Population

- Final plant populations of 175 – 225 sugar beets per 100' of row in 22" rows.

Weed Control

- Pre-emerge application of Dual Magnum and/or ethofumesate reduces weed pressure.
- Use the highest labeled rate of glyphosate for the sugar beet stage.
- Layby applications of Dual Magnum, Outlook, or Warrant reduce late emerging waterhemp.
- SMBSC Quicksheet: http://www.smbsc.com/Agronomy/QuickRefSheets.aspx

Root Disease Management

- **Aphanomyces:** Use lime application, drainage, Tachigaren seed treatment and resistant varieties to minimize the effects of this disease.
- **Rhizoctonia:** Use rhizoctonia seed treatment, in furrow or post-emerge fungicide application, and resistant varieties to minimize the effects of this disease. SMBSC Quicksheet: http://www.smbsc.com/Agronomy/QuickRefSheets.aspx
- **Rhizomania:** Use varieties with more than one resistance gene to combat this disease.

Cercospora Leafspot Management

- Need 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.
- SMBSC CLS Quicksheet: http://www.smbsc.com/Agronomy/QuickRefSheets.aspx

Harvest

- SMBSC requires all green material be removed at defoliation as well as a 2" diameter scalp. These practices improve storage and decrease impurities delivered in the sugar beet.
- 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.
- Cover Crop Quicksheet: http://www.smbsc.com/Agronomy/QuickRefSheets.aspx