

# 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.
- Soil sample nitrate nitrogen 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

- 110-150 pounds of nitrogen per acre total (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.

## Planting and Stand Establishment

- SMBSC recommends a seed spacing at planting of 4.75" to 5" (57,000 – 60,000 seeds per acre).
- Recommended 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 200-225 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 extractable sugar per acre.

## Weed Control

- Pre-emerge application of Dual Magnum and/or ethofumesate reduces weed pressure.
- Broadcast rates of pre-emerge ethofumesate at 2 pints per acre and greater can reduce spring seeded cover crop establishment.
- Use the highest labeled rate of glyphosate for the sugar beet stage.
- Layby applications of Dual Magnum, Outlook, or Warrant reduce late emerging waterhemp.

## 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.smbisc.com/agronomy/AgronomyDefault>

## Root Disease Management

- **Aphanomyces:** Use lime application, tile 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.
- **Rhizomania:** Use varieties with more than one Rhizomania resistance gene to combat this disease. Longer crop rotations decrease the potential for economic loss to Rhizomania.

## 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 EBDC fungicide prior to row closure (Application Zero) has provided increased CLS control and revenue per acre in both small plot and APD data.

## 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 scalping increases sugar content and increases sugar beet purity.
- 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.smbisc.com/agronomy/AgronomyDefault>

