SMBSC Soil Fertility Analysis Program for the 2023 Crop

Proper nitrogen fertilization is critical to maximizing extractable sugar. SMBSC believes that acquiring high-quality soil samples provides the foundation for increased sugar beet quality and revenue**;** however, the number of fields in the SMBSC Agronomic Practice Database providing soil sample information has decreased over the years. This is a trend SMBSC would like to reverse. Therefore, SMBSC will continue to incentivize soil sampling by accepting nitrogen-only samples for analysis, the same as SMBSC has done since 2019. This update is to provide a review of the requirements of the SMBSC Soil Analysis Program for the upcoming 2023 crop season. A similar newsletter will be distributed to soil samplers and industry partners to make them aware of the program. ***Your participation in the SMBSC soil fertility analysis program and Ag Practice Database are vital tools for identifying operation by operation fertilization management options and strategies that are capable of improving sugarbeet yield and quality as well as shareholder revenue.***

Soil Fertility Analysis Program Requirements for the 2023 Crop

Soil samples can be submitted to either Agvise or MVTL for analysis. Discuss with your soil sampler where your samples will be sent for analysis. **The Soil Fertility Analysis Program criteria are as follows:**

- Soil samples should be taken by management zones or by a grid system. Fields sampled with only one composite sample for the entire field will not be compensated.
- Soil samples should be analyzed for the following criteria: **nitrate nitrogen, phosphorus, potassium, organic matter, and soil pH**. These are the nutirent analyses that SMBSC pays the full analysis fees.
- For nitrate nitrogen, a minimum of 36” sample depth is required (48” preferred). SMBSC strongly recommends a deep nitrate sample to know the levels of deep nitrogen present in your field. The presence of significant levels of deep soil nitrate can decrease the quality of your sugar beet crop.
- Nutrient analysis requested by the shareholder or sampler other than the ones listed above are outside of the SMBSC Soil Fertility Analysis Program. These costs will be charged to the shareholder, (Examples include sulfur, zinc, or boron analysis). The extra analysis costs will be deducted from the shareholder’s November 2023 beet payment.
- Fields must be planted to sugar beets in the 2023 season.
- **Soil samples that do not meet all the above criteria can still be submitted to either lab under the SMBSC program; however, because not all the criteria are met the cost of the sample analysis will be deducted from the shareholder's November 2023 beet payment.**
- SMBSC recommends delaying nitrate nitrogen sampling until soil temperatures are below 50 degrees F.

Additional information regarding the Soil Fertility Analysis Program

SMBSC modified the previous soil analysis program in the 2019 season to encourage participation with deep nitrate sampling. These additions remain effective for 2023:

SMBSC will directly compensate shareholders $2 per acre for all fields that are sampled and submitted through the SMBSC Soil Analysis Program. To be eligible for this compensation, all requirements for the Soil Analysis Program must be met for each field submitted to the program. If any requirement of the program is not met, the shareholder will not be eligible for the $2 compensation for that field. This compensation will be paid directly to the SMBSC shareholder through a line item on one of the 2023 sugar beet checks.

SMBSC will accept nitrogen only samples for the Soil Fertility Analysis Program and the analysis fees on these samples will be paid. These nitrogen only samples must be taken to a minimum of a 36 inch depth. If nitrogen only samples are submitted through the Soil Fertility Analysis Program, these fields would not be eligible for the $2 per acre compensation because not all the program criteria would be met.

Nitrogen Recommendations

Nitrogen management is an extremely important part of sugar beet production. The presence of excess nitrogen fertilizer decreases root sugar content and overall beet purity, which when combined results in decreased sugar production in your factory. High-quality nitrate nitrogen samples taken at the proper time and recommended depth are an important part of a nitrogen management program. **SMBSC data over 10 years and 19 trial locations suggest managing Nitrogen to *130* total lbs. per acre *(+/- 20 lbs. depending on individual field circumstances).*** **This total includes (residual + applied) based upon the use of a four-foot soil sample.** Adjustments upward or downward from the recommended range may be required to compensate for fields possessing high organic matter and/or a history of manure applications.

SMBSC Management Zone Maps and Mapping Program

SMBSC recommends that soil samples be taken on a management zone or grid basis. Soil sampling and fertilizer application by the management zone is an important part of increasing sugarbeet quality and revenue. In 2012 SMBSC introduced a zone mapping program for use in shareholder's sugar beet fields. SMBSC's goal for this program is to increase cooperative average sugar content and maximize sugar production per acre by applying nitrogen fertilizer to zones that identify a need for additional nitrogen, and to refrain from over-application of nitrogen to zones possessing high organic matter and higher residual nitrogen. This system uses bare soil imagery to delineate management zones within fields for soil sampling. These zones are useful for soil sampling fields or may be added as a layer to management zone maps you may already be using on your farm.

Discuss the SMBSC zone mapping system with your soil sampler for use on your 2023 sugar beet fields. Contact Jody Steffel at 320-329-4144 for questions regarding the SMBSC zone mapping system.

Summary

The SMBSC Soil Fertility Analysis Program and Zone Mapping Program were implemented to help shareholders raise higher quality sugar beet crops and also to obtain quality soil fertility information for the SMBSC Agronomic Practice Database. Although it is impossible to design a program that fits all operations or field specifics, we are interested in any suggestions that could make the program better. Please forward any suggestions or questions that you may have regarding the SMBSC Soil Fertility Analysis Program to jody.steffel@smbsc.com.

SMBSC would like to thank all past participants in the SMBSC Fertility Analysis Program and encourage everyone to take advantage of the program for their 2023 sugar beet crop.

Thank you,

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