

Nitrogen Management in Sugar Beets

Nitrogen management not only varies across the different growing regions for sugar beets but also across the geography of our cooperative. In addition, the nitrogen requirements of a beet crop will vary depending on the environmental conditions of the year. This is not a one-size-fits-all recommendation but a guideline of things to consider as you try to maximize production in every field. There have been no biological or foliar nutrient products that have been shown to consistently improve sugar beet yield so this update will stick to the basics.

Data Summary

Data from research done over the last 15 years shows an average response to additional nitrogen up to ~130lbs of total nitrogen/A (residual to a depth of 4 ft. + applied) with the majority of the research following field corn. Other previous crops with less residue that are harvested earlier tend to have less of a response to additional nitrogen (studies done following soybean and sweet corn). Increasing total nitrogen over 130lbs has not shown a negative impact to overall sugar production per acre (ESA). There are several research reports on the SMBSC website, including the Nutrient Management Quicksheet, under the Fertility tab with more information.

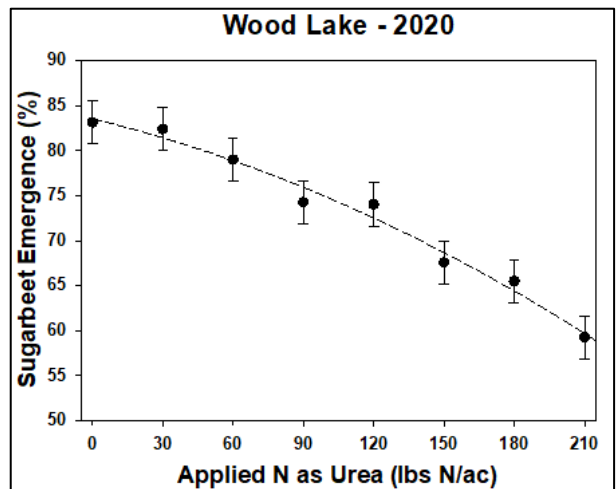
[SMBSC Agronomy Page](#)

[UMN Sugar Beet Fertilizer Guidelines](#)

Stand Reduction

If the soil conditions are dry after planting, there is an increased risk of stand reduction due to ammonia volatilization from spring applied urea. Stand reduction was significant at rates over 120lbs of N/A applied as urea in a trial conducted in 2020. Stand loss is minimal at lower rates and we generally do not see stand loss if we receive rainfall to move the urea away from the seed zone.

[Urea and sugar beet stand loss: Should growers change how they manage nitrogen?](#)



Don't Let Your Money Volatilize

Applying nitrogen fertilizers on the soil surface without incorporation from tillage or an upcoming rain event (within 2 days) will result in significant nitrogen losses. These losses occur more quickly with high air temperature and on fields with soil pH above 7.5, and with high levels of crop residue which contain high amounts of the urease enzyme (very typical conditions in our growing area). Consider reading the links below from Minnesota Crop News for more information.

[Which Nitrogen Source is Right for You?](#)

[Getting an Early Start on Fertilizer Applications?](#)

[What to Know About Nitrogen Inhibitors](#)



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