

Ten Keys to Higher Sugarbeet Quality (Tip #5)

Nitrogen rate and application method is one of the ten key components to improve sugarbeet quality.

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Nitrogen is the single most important nutrient that needs to be managed in a sugarbeet crop. No other nutrient has been more studied. Too little nitrogen can reduce tonnage; too much will reduce quality. Nitrogen rate recommendations can vary depending on planting/harvesting date, previous crop, plant population and tillage systems. Managing nitrogen properly includes application rate, placement and timing. In Michigan, recommendations are based on optimizing tonnage, quality and net return per acre. General recommendations when following a low residue crop such as dry beans or soybeans is 90-120 pounds per acre. When planting after a high residue crop such as wheat stubble or corn, the recommendation would be 130-160 pounds. Recent research conducted at the Saginaw Valley Research and Extension Center by Dr. Kurt Steinke of Michigan State University Extension, indicated that 120 and 160 pounds were the optimum rates following soybeans and wheat.

Nitrogen rates need to be adjusted downward if incorporating a legume cover crop following wheat in the previous fall. A good stand of clover can easily supply 60 pounds or more of additional nitrogen. Nitrogen rates should be reduced by 40-80 pounds per acre depending on how good of stand and growth of the clover. It is also common that many wheat stubble fields will have manure injected in late summer or fall. It is always recommended that soil nitrogen tests be taken in these fields to help determine availability of nitrogen. Research conducted by MSU Sugarbeet Advancement program indicated that 10,000 gallons of fall applied dairy manure was able to supply all of the nitrogen needs when 40 pounds of nitrogen was included in the 2" by 2" starter.

It is extremely important that nitrogen needs are met early on and during the first two thirds of the season. Research conducted by Michigan Sugar Company and Sugarbeet Advancement has shown 2" by 2" starter placement of 40-50 pounds of nitrogen improves early season growth, especially under high residue situations. This should be coupled with pre-plant incorporated nitrogen or an early side-dress application at about the 4-6 leaf stage. Late side-dress applications will keep beet foliage green longer, but will also lower beet quality. A high quality beet crop will have off color foliage prior to harvest.