

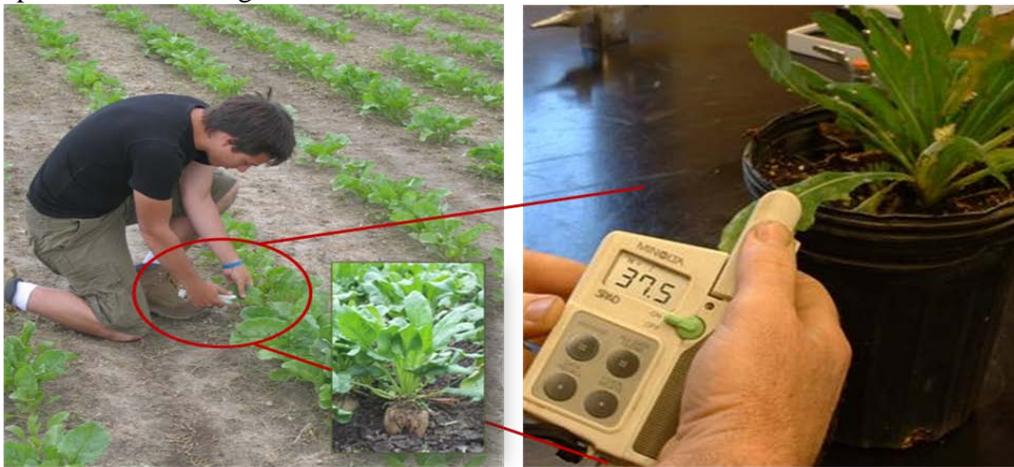
Managing Nitrogen in Sugarbeets.

Sugarbeet Factsheet

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Managing nitrogen fertilizer is critical to optimizing raw white sugar per ton (RWST). Although higher rates of N fertilizer increase sugarbeet yield, high N fertility tends to decrease % sugar and RWST and increase impurities, which lowers net return to the grower and cooperative (Van Eerd et al. 2012).

The SPAD® meter measures chlorophyll content and provides a numerical indication of greenness; the darker green the leaf, the higher the reading. The underlying principle behind this tool is that the higher the SPAD® reading, the higher the chlorophyll and the more N to the crop. The SPAD® meter is easy to use, provides immediate results and does not require you to collect leaves to send to the lab. Simply take 30 readings from 30 plants. To take a reading, clamp the meter on to the most recently fully expanded new leaf, wait a few seconds and the move on to the next plant. The machine takes the average of the 30 plants sampled and that average number is used to make N fertilizer decision or harvest decision.



At sidedress N application: Take SPAD® readings as close to the time of sidedress N fertilizer application as possible. A reading of 31-36 is optimal for RWST production. If reading is lower than 30, then more N fertilizer is needed. Readings higher than 31 indicates enough N in the soil, therefore N fertilizer is not required. The SPAD® meter does not work to predict RWST later in the season but does work at harvest in mid-September through to mid-November.

At harvest: SPAD® readings at harvest may be used to decide which field to harvest early. As a general rule, fields with lower SPAD® reading have higher RWST. It appears that RWST to be optimal at SPAD® readings of 35 or lower. Fields with high SPAD® readings of 40 or higher tend to have lower RWST.

References: Van Eerd, L.L., K.A. Congreves, and J.W. Zandstra. 2012. Sugar beet (*Beta vulgaris* L.) storage quality in large outdoor piles is impacted by pile management but not nitrogen fertilizer nor cultivar. Canadian Journal of Plant Science. 92:1-11.

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Funded by:

