MORAGHAN, JOHN[1*], KEVIN HORSAGER[1], ALBERT SIMMS[2], and LARRY SMITH[2], [1]Soil Science Department, Walster Hall, North Dakota State University, Fargo, ND 58105. [2]Northwest Experiment Station, University of Minnesota, Crookston, Crookston, Minnesota 56716, Sugarbeet Tops and Soil Nitrogen Fertility.

Sugarbeet tops at harvest contain from 60 to 300 pounds N per acre. The contribution of the tops to the N status of fields, however, often varies greatly within fields. Areas with yellow tops frequently contain 2 to 2.5 tons/acre of day matter with N concentrations of 1.3 to 1.7 percent. In contrast, areas with green to dark-green tops in the same fields contain 3 to 4 tons/acre of day matter with N concentrations of 2.5 to 3.3 percent N. A unit of N in high N tops is approximately twice as effective as a unit of N in low N tops for a following wheat crop in the Red River Valley. Areas of low and high N tops within fields can be identified by aerial photography. This information can be digitized and utilized by operators of variable fertilizer rate equipment to optimize N fertilizer requirement within fields of crop following sugarbeets. This technology is likely to reduce N fertilizer application in the Red River Valley.