

LAMB, JOHN A.^{1*}, MARK W. BREDEHOEFT² and STEVEN R. ROEHL², ¹University of Minnesota, 439 Borlaug Hall, 1991 Upper Buford Circle, St. Paul, MN 55108 and ²Southern Minnesota Beet Sugar Cooperative, P.O. Box 500, 83550 County Road 21, Renville, MN 56384. **Are rhizomania resistant sugarbeet varieties nitrogen hogs?**

ABSTRACT

Nitrogen management is important for optimum yield and quality of sugarbeet. Rhizomania is a soil borne disease that affects the quality and yield of sugarbeet. The disease has been reported to affect the nitrogen nutrition in the sugarbeet. New sugarbeet varieties have been developed that have different resistance to rhizomania. The question is if the new varieties require a change in the amount of nitrogen needed for optimum yield and quality. A study was conducted from 2003 to 2005 to determine if rhizomania resistant varieties require different N guidelines than the non-resistant varieties. A factorial of varieties and N rates were used as treatments on both small plot and field scale strips in nine locations. The varieties were non-resistant, resistant with low quality, and resistant with high quality. Soil nitrate-N was measured at the beginning of the study while root yield and quality and residual soil nitrate-N was measure at the end of the growing season. The study concluded that no adjustment in the N guideline was needed for rhizomania resistant varieties.