

STEDDOM, K<sup>1\*</sup>, D. JONES<sup>1</sup>, C.M. RUSH<sup>1</sup>, and L.G. CAMPBELL<sup>2, 1</sup> Texas Agricultural Experiment Station, Amarillo, TX 79012; <sup>2</sup>USDA-ARS, Northern Crop Science Laboratory, Fargo, ND, 58105. **Foliage color of beets is a poor predictor of rhizomania.**

Rhizomania, caused by *Beet necrotic yellow vein virus* (BNYVV), in the sugarbeet growing regions of Minnesota and North Dakota is generally first noticed in the field when patches of beets with yellow foliage are found. We selected three hundred and ninety sugarbeets from resistant and susceptible varieties in rhizomania strip trials. For each beet the roots were tested for BNYVV by ELISA and the foliar spectra were measured with a radiometer. Logistic regression was performed to determine how well foliar spectra could predict the ELISA results. A model using NDVI, a common vegetative index that measures greenness of foliage, correctly classified 67.5 percent of the beets. This indicates a large percentage of beets had dark green leaves but still tested positive for BNYVV. Past results suggested other vegetative indices may be effective for detecting BNYVV. A stepwise logistic regression model was developed with a number of vegetative indices. This model, using VARI, RGR, and RDVI, correctly classified only 70.2 percent of the beets. These results suggest that yield prediction models using remote sensing methods may have difficulty in fields that have rhizomania.