BOETEL, MARK A.*, ROBERT J. DREGSETH, and ALLEN J. SCHROEDER, Department of Entomology, North Dakota State University, Fargo, ND 58105. **Impact of tank-mixed insecticide and fungicide combinations on sugarbeet yield and quality.**

The tarnished plant bug (TPB), *Lygus lineolaris* (Palisot de Beauvois), is an occasional economic insect pest of sugarbeet in the Red River Valley growing area. Damaging populations of TPB typically occur late in the growing season and often overlap with cercospora leaf spot (CLS) disease infections in the same fields. Cercospora leaf spot, caused by *Cercospora beticola* Sacc., is the most damaging foliar disease of sugarbeet in Minnesota and eastern North Dakota. Application cost savings and time efficiency provide a strong impetus for producers to combine insecticide treatments for TPB control with fungicides for CLS management. Field experiments were carried out during the 2003 and 2004 growing seasons to determine if late-season broadcast applications of tank-mixed insecticide/fungicide combinations affect sugarbeet yield parameters. In 2003, treatment with Lannate LV (1 pt/A) + SuperTin (5 oz/A), Dibrom 8 (1 pt/A) + Eminent 125SL (13 fl oz/A), and Lorsban 4E (1 pt/A) + Eminent (13 fl oz/A) resulted in significant losses in both root yield and recoverable sucrose. Recoverable sucrose yield for these combinations was reduced by 20.2, 21.2, and 23.2%, respectively, when compared to counterpart plots that received the insecticides without a tank-mixed fungicide. The experiment was repeated in 2004 and expanded to include Mustang insecticide and Headline fungicide. Findings from the second year will be presented and the overall implications of this two-year study will be discussed. Additional research is planned to determine the following: 1) if using lower labeled rates of the insecticides can reduce phytotoxicity of the tank-mix combinations; and 2) whether split applications of the fungicides and insecticides will be necessary to avoid yield losses.