KHAN, MOHAMED F. R.[1*], LARRY CAMPBELL[2], NORMAN CATTANACH[3] and AARON CARLSON[3], [1]North Dakota State University and University of Minnesota, Department of Plant Pathology, 227 Walster Hall, P.O. Box 5758, Fargo, ND 58108, [2]USDA, Agricultural Research Service, Northern Crop Science Laboratory, 1307 – 18th Street North, Fargo, North Dakota 58105 and [3]North Dakota State University, Soil Science Department, 249 Walster Hall, P.O. Box 5638, Fargo, ND 58105. **Impact of fungicides on sugarbeet yield, quality, and storage respiration rate in the absence of disease.**

Researchers in the United Kingdom reported that triazole and/or strobilurin fungicides increased sugarbeet, *Beta vulgaris,*, yield by 5%, even when disease pressure was moderate to low. The objective of this research was to determine the effect of fungicides on sugarbeet yield, quality, and postharvest respiration rate, in the absence of disease in the Red River Valley. Sugarbeet was planted at Prosper, North Dakota in 2005 through 2008. The variety selected was tolerant to *Aphanomyces cochlioides* and seeds were treated with Tachigaren to provide additional protection from Aphanomyces. Five fungicides commonly used for Cercospora leaf spot control - Eminent, Headline, Gem, Super Tin and Topsin - were each applied three times at about 14 days intervals beginning in late July. There was also an untreated control. These six treatments were arranged in a randomized complete block design with four replicates. Sucrose concentration and loss to molasses were determined at American Crystal's laboratory at East Grand Forks, MN. Differences in root yield, sucrose concentration, or recoverable sucrose between the untreated control and any of the fungicide treatments were not significant. In 2007, root samples were collected, washed, and placed in perforated polyethylene bags and stored at 4ºC and high relative humidity. Postharvest storage respiration rates were determined 30 and 90 days after harvest. There was no significant difference in respiration rates between the untreated control and any of the fungicide treatments. Storage respiration rate will be measured again in 2008. In these trials, there was no apparent benefit in applying fungicides to healthy sugarbeet.