KHAN, MOHAMED F. R.[1]* and RANDY NELSON[2], [1]North Dakota State University and University of Minnesota, Department of Plant Pathology, 227 Walster Hall, P.O. Box 5758, Fargo, ND 58108-6050, [2]University of Minnesota, Clay County, 715 – 11th Street North, Moorhead, MN 56561. **Comparing fungicide use with defoliation as management strategies for economic control of Cercospora leaf spot in sugarbeet.**

Cercospora leaf spot, caused by *Cercospora beticola*, is the most destructive foliar disease of sugarbeet in Minnesota and North Dakota in warm and humid conditions. Fungicide usage and defoliation as management strategies were evaluated in 2006 and 2007 at Foxhome, MN. Fungicides were applied when required in a rotation program starting at initial symptoms. Plants were defoliated in July in 2006, and July and August in 2007, to avoid the disease. There were also untreated check plots. In both years, the use of fungicides provided acceptable disease control and resulted in the highest recoverable sucrose because of higher root yields with significantly higher sucrose concentrations. Defoliated plants had the least amount of Cercospora leaf spot. However, defoliation adversely impacted the photosynthetic capacity of plants resulting in reduced yield. In 2006, defoliation resulted in similar root yield and recoverable sucrose as the untreated check. However, in 2007, defoliation resulted in lower root yield, sucrose concentration and recoverable sucrose than the untreated check. Lower yield of defoliated plots in 2007 was probably a result of slow re-growth of leaves because there was 45% less rainfall in July through September in 2007 compared to 2006. Defoliation was effective in controlling Cercospora leaf spot but resulted in significantly lower sucrose yields compared to fungicide usage which makes it an uneconomical management tool for growers.