

BLOOMQUIST MARK W.,* DAVID C. METTLER, and CODY J. GROEN. Southern Minnesota Beet Sugar Cooperative, 83550 County Road 21, Renville, MN 56284. **Methods to reduce *Cercospora beticola* inoculum in field.**

Cercospora leaf spot can be a devastating disease for sugar beet production in southern Minnesota. Since 2016, cercospora leaf spot levels have been high across the Southern Minnesota Beet Sugar Cooperative growing area. Six to seven fungicide applications are being applied to manage disease levels in fields which is placing a significant amount of selection pressure on these fungicides. As fungicide resistance trends upward, additional tools are necessary to manage this disease. In 2019 and 2020, SMBSC conducted a trial to look at potential methods to decrease the levels of *Cercospora beticola* inoculum that survive from one season to another in the soil and plant debris. Trials were established on areas that were planted to sugar beet the previous year and had high levels of cercospora present. There were five treatments in the trial each season. The treatments were tillage, heat/burning, copper fungicide application, hydrogen peroxide/ peroxyacetic acid application, and an untreated check. The treatments were applied in the spring prior to planting. The chemical treatments were applied to the soil and crop residue present on the soil. Sugar beets were no-till planted across the trial area following the treatment application. The sugar beets were allowed to develop through the growing season, and when CLS began developing across the trial, foliar ratings were taken using the KWS 1-9 scale. The foliar ratings were conducted 2-3 times per week for a three week period. In the 2019 season, both the heat/burn treatment and the tillage treatment had lower average CLS ratings than the untreated check. These differences were statistically significant at the 0.05 significance level in comparison to the untreated check. In 2020, the heat/burn treatment was statistically lower in average CLS ratings versus the untreated check. The tillage treatment was numerically lower, but not significantly lower at the 0.05 significance level in 2020. The two spring applied chemical treatments did not lower the level of CLS present in either year of the trial. This trial will be repeated for a third year during the 2021 growing season.