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**Impact of fungicide application timing on *Cercospora beticola* latent infection, symptom development, and fungicide resistance profiles during the growing season.**

This project assessed performance of spray programs with early first applications and generated preliminary data on the relationship between different fungicide programs, latent *Cercospora beticola* infections, and the fungicide resistance profile of the *C. beticola* population. In North Dakota and Minnesota, Cercospora leaf spot (CLS) caused by the fungus *C. beticola*, continues to limit sugarbeet yields and economic returns for growers and cooperatives. Growers rely on fungicide applications made at or around sugarbeet row closure and continued throughout the season. Two small-plot replicated field trials were conducted in the 2024 season near Foxhome, MN. Ten treatments, including a nontreated control, were tested on both a CR+ and non-CR+ sugarbeet variety. Treatments differed in timing of the initial fungicide application (12-Jun, 28-Jun, Jul-12, or 29-Jul), and the interval between subsequent applications (based on calendar days, CLS disease infection values, or a combination). Fungicide products and active ingredient rotation were the same between treatments once applications began. Initiating the fungicide program beginning on 12-Jun offered no statistically significant benefit compared to a 28-Jun start, but did provide numeric improvements in CLS ratings and recoverable sucrose per ton. Prior to the start of fungicide applications, leaf samples were collected from each plot, and again prior to each subsequent application in the program. Analysis of *C. beticola* DNA extracted from leaf tissue showed changes in the relative abundance of strobilurin (G143A), benzimidazole (E198A), and triazole (E170, L144F) fungicide resistance alleles over time as the growing season progressed.