

TIMING OF FUNGICIDE APPLICATION 2002  
Larry J. Smith, Head, Northwest Research and Outreach Center  
University of Minnesota, Crookston, MN

A trial was initiated at the Northwest Research and Outreach Center in 2002 to evaluate different timings of fungicide application to control *Cercospora* leafspot. The application timings were based on the onset of *Cercospora*, onset plus scouting, when 10% of the plants exhibited *Cercospora* lesions, a single application at onset and a single late application. These timings were chosen to take into consideration standard recommended practices, effectiveness of new fungicide chemistry, weather factors after onset on disease development and one time (early and late) application.

**Procedure:** Beta 6447 sugarbeet seed was planted April 30, 2002, in 22-inch rows. Fungicides were applied with a ground applicator using a pressure of 100 psi and volume of 20 gpa to the center four rows of a six-row plot. The center two rows were harvested for yield on September 26 and quality determined at the ACSC Quality Laboratory in East Grand Forks, MN. All other cultural and pesticide programs were applied according to recommendations. Fungicides applied varied with the number of applications to ensure resistance management. Timings varied with treatment.

**Results and Discussion:** Results of the various fungicide timings are shown in [Table 1](#). The standard recommended practice (onset plus 14 day application interval), onset plus scouting and the 10% of plants infected then standard practice (14-day application interval) resulted in the highest recoverable sucrose and gross return per acre. Eminent fungicide was applied as the initial treatment in all three situations. This fungicide has shown excellent *Cercospora* control and provides excellent protection for 14-18 days, as well as a “kickback” effect for up to 72 hours. The August 2 application would have given protection until August 16 - 20. Even when 10% of the plants were infected, control was effective in stopping further spread of the disease. The single application on August 2 or September 3 gave a significant increase in recoverable sucrose and gross return over the control, but were inferior to the other treatments.

Results of this trial indicate that one fungicide application could have been saved if the *Cercospora* application model had been followed or that if a higher percent of the plants been allowed to get the disease before the first application. At the initial onset of disease in a field, many times only a few plants are infected and the future spread will be weather dependent.

For the past three years, the major *Cercospora* buildup has occurred in late August and September. This is a period of time producers are ignoring relative to control, as most apply their last fungicide application around mid-August and assume weather conditions in September will contain the disease. Data from this trial clearly shows the benefit of late August, early September protection against *Cercospora* leafspot.

**Caution Note: Preharvest intervals for the various fungicides are different and must be adhered to.**

Table 1. Effect of fungicide application timing on yield, quality, *Cercospora* control and profitability.

Treatment	Fungicide App date	Fungicide <sup>1</sup>	Recoverable Sucrose (lb/A)		Yield (T/A)	Sucrose (%)	LM (%)	KWS CR 1-9	Gross Return <sup>2</sup> (\$/A)
Onset +Scouting	8/2, 9/3	Eminent/TPTH	6891	300.5	22.9	16.33	1.30	2.13	798
Onset+14 day	8/2,8/16, 9/3	Eminent/TPTH/Eminent	6824	305.0	22.4	16.53	1.28	1.75	801
10 % plants infected	8/15, 8/29	Eminent/TPTH	6819	302.5	22.6	16.42	1.30	2.50	796
Late	9/3	Eminent	6275	293.5	21.4	16.15	1.48	4.00	710
Early	8/2	Eminent	6204	295.5	21.0	16.08	1.30	4.13	707
Check	—	—	5581	285.5	19.6	15.75	1.48	5.88	614
Stat. Sign. <sup>3</sup>			uu	NS	uu	NS	u	uu	uu
LSD <sub>05</sub>			609	—	1.6	—	0.16	0.68	48

<sup>1</sup> Eminent 13 oz/A TPTH 5 oz/A

<sup>2</sup> Basis ACSC November 15, 2002 payment.

<sup>3</sup> u, uu Statistically Significant at 0.05 and 0.01 levels