

## IDENTIFYING RISK MANAGEMENT ZONES FOR CERCOSPORA LEAFSPOT CONTROL IN MICHIGAN

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### **Introduction:**

After the original development of the BeetCast predictive model for managing Cercospora leafspot in areas with high disease pressure observations were made indicating that not all growing regions may respond the same to the predictive model. In areas with lower disease pressure observations were made indicating the disease may appear at a later Disease Severity Value (DSV) suggesting an alternate or less aggressive control strategy may prove to have an economic return.

### **Objective:**

The objectives of this study were to: Match a Disease Severity Value (DSV) to the first presence of Cercospora Leafspot to Identify Risk Management Zones and control strategies for Cercospora Leafspot.

### **Materials/ Methods:**

The BeetCast predictive model was used to accumulate daily DSV's. This model gathers data from weather stations placed in sugarbeet fields. Each weather station measures temperature and humidity within the leaf canopy on a daily basis. The Michigan Sugar Ag. Staff scouted each plot on a regular basis for the first presence of cercospora leafspot (1<sup>st</sup> spot). Seven locations were selected throughout Michigan; based on disease pressure in Fairgrove (high pressure), Kawkawlin (Medium to High pressure), Croswell (Low pressure), Sandusky (Low to Medium pressure), Twining (Low pressure), Hope (Medium pressure) and Port Hope (Medium to High pressure). Fungicide applications were applied to nine treatment groups:

- 1- 55 – 55 – 55 DSV's
- 2- 55 – 55 DSV's
- 3- 70 – 70 DSV's
- 4- 80 – 55 DSV's
- 5- 1<sup>st</sup> Spot – 55 DSV's
- 6- Scouting: 1<sup>st</sup> Spot - Labeled Interval
- 7- Delayed Scouting: two applications equal to the 2<sup>nd</sup> and 3<sup>rd</sup> application timings of the Scouting treatment group
- 8- One "Mid Season" Application
- 9- Untreated Check (UTC)

Each plot was visually rated throughout the growing season, root weight, sugar content, and purity measures were collected at harvest to determine the level of control for each treatment. The final rating of each plots UTC was used to gauge the level of disease pressure for that growing region.

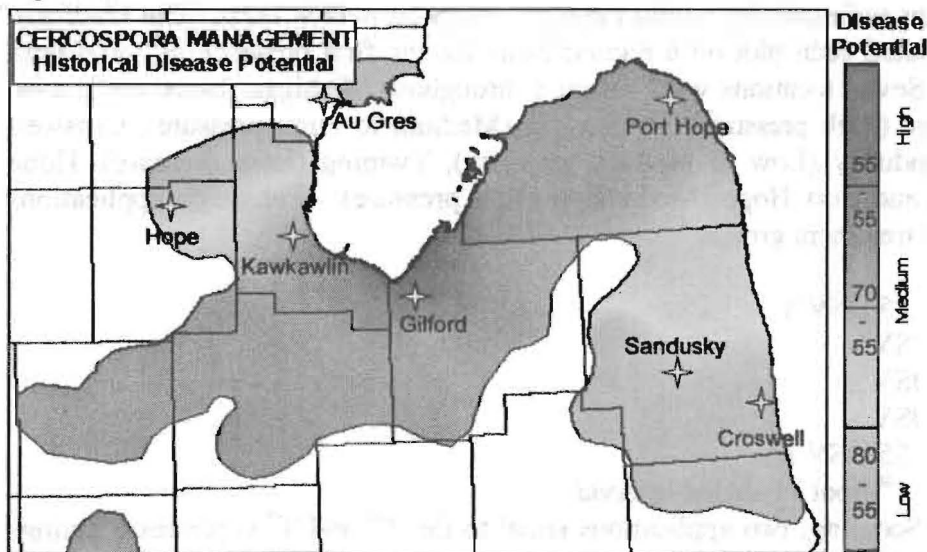
**Results:**

Observations confirmed that in the medium to low pressure areas 1<sup>st</sup> spot did come at a higher DSV; however the UTC ratings did not always follow the pattern observed in previous growing seasons (figure 1). Root weight, sugar content and purity measures for the Delayed Scouting, One application, and UTC at all locations were significantly lower than all other treatments across all locations. Past experience and research conducted in 2006 helped to identify Risk Management Zones and control strategies for the control of cercospora leafspot however additional work is necessary to further separate the remaining treatments.

Figure 1.

Location – Disease Pressure	# of DSV's at First Spot	Final UTC Rating
Fairgrove – High	79	4.7
Kawkawlin – Med. to High	75	3.1
Croswell – Low	83	4.7
Sandusky – Low to Med.	86	4.3
Twining – Low	110	6.1
Hope – Med.	72	3.1
Port Hope – Med to High	80	4.3

Figure 2.



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