



# MICHIGAN SUGARBEET REACH

Research & Education Advisory Council

## Cercospora Leaf Spot Resistance Management in Sugarbeets - 2014

In 2013, we experienced a low number of isolates for Cercospora leaf spot, due to hot, dry conditions. REACH doesn't recommend a reduction in the number of sprays for 2014 as a result of the low inoculum levels of Cercospora leaf spot last year. Continue with your monitoring program and utilize BEETcast (<http://www.michiganbeets.com>) for your first spray.

The use of more tolerant varieties are especially important when planting next to a field that had Cercospora leaf spot problems the previous year, or if planting in an area surrounded by trees, which results in conditions favorable to Cercospora leaf spot. Note, one must weigh out the options in choosing higher producing varieties with low leaf spot tolerances vs. lower producing varieties with high leaf spot tolerances.

Cercospora leaf spot has been more difficult for some growers to control over the past few years as a result of resistance to two classes of fungicides: strobilurins (Headline and GEM) and benzimidazole (Topsin). Typically, growers use Quadris (a strobilurin) for Rhizoctonia control and then apply Proline, Eminent, Enable, TOPGUARD, or Inspire (triazoles) as their first leaf spot spray.

Headline or Gem are generally the second leaf spot spray, however, it has been confirmed that we are losing Cercospora leaf spot control with this class of fungicide. For 2014, it is not recommended to use Headline, Gem or Topsin for Cercospora Leafspot control due to the resistance issues in Michigan that has been confirmed since 2011 by Michigan State University (**Figure 1 and 2**). However, if you opt to use Headline, Gem, or Topsin, do it at your own risk and make sure to tank mix these fungicides with an EBDC or Copper, and manage those fields carefully for fungicide failures.

To help slow down resistance with other classes of fungicides, we as a cooperative must follow the below points, thus preserving our remaining classes of fungicides.

- It is highly recommended to alternate classes of fungicides when tank mixing (**Table 1**).
- Tank mix triazoles, strobilurins, Super Tin, Topsin every time with an EBDC or Copper.
- Apply the suggested fungicide rates (and not half rates).
- Do not apply triazoles or Super Tin more than twice in a season.
- Do not apply triazoles back-to-back even if you tank mix with another mode of action. Resistance is showing up with some of the triazoles.

### Cercospora Leaf Spot Magnified, 40X



Figure 1: Strobilurin Resistance, 2011-2012

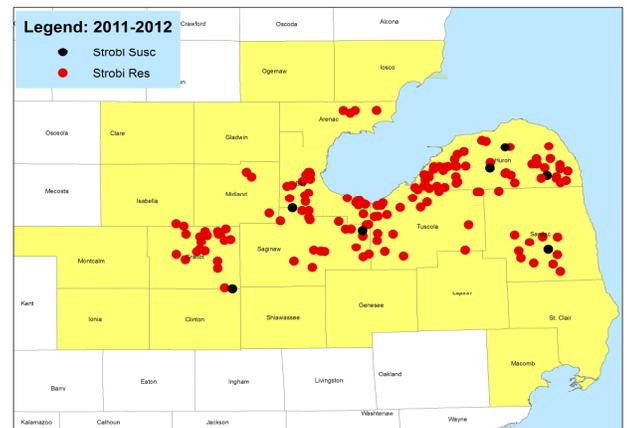
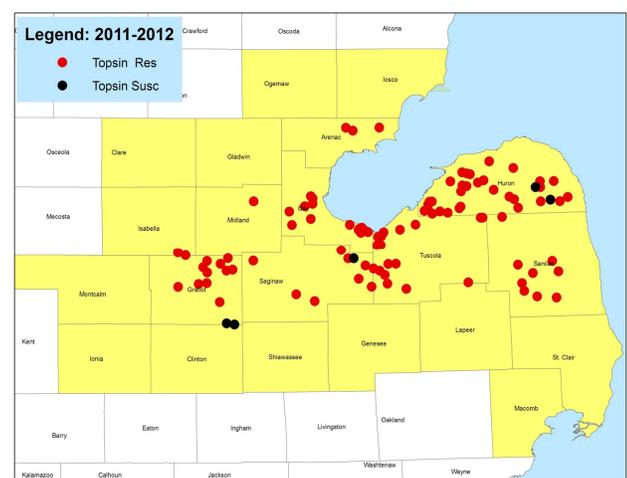


Figure 2: Topsin Resistance, 2011-2012



- Do not apply Super Tin back-to-back even if you tank mix with another mode of action.
- Do not tank mix triazoles and Super Tin together.
- Do not mix Coppers with glyphosate and AMS or crop injury may occur. Beware that applying in a spray solution < 6.5 pH may cause phytotoxicity.
- EBDCs and Coppers can be sprayed multiple times without a tank mix partner, and can be applied back-to-back.
- Ballad Plus is **not** being recommended at this time until REACH has done research on this product
- Apply fungicides in an approach to insure maximum coverage, thus improving Cercospora leaf spot control.
- Use **20-25** gallons of water with a minimum of **90 PSI, 100 PSI** will give better performance. Use surfactants and additives as required by product labels.
- **Do not** wait until the first leaf spot is noticed. By this time, Cercospora leaf spot has been there for at least fourteen to twenty-one days prior to seeing it. Once Cercospora leaf spots are noticed, it's hard to manage the disease.
- Spray all fungicides as preventative programs, there are **no** curative fungicides for Cercospora leaf spot.
- Use BEETcast to help you plan on timely applications, especially your first spray program. If you are in a high risk area, then spray at 50 DSV's for susceptible varieties and 55 DSV's for all other varieties. Then follow the spray intervals on the label or BEETcast for your 2nd, 3rd...spray.
- Research has shown that there is a benefit in applying an EBDC at 35 DSV as an early season surface protection and then follow up by your BEETcast risk spray zone in your area (e.g. 50, 55, 60...DSVs).
- Crop rotation plays a key component in reducing Cercospora leaf spot inoculum level from over-wintering in plant debris and in soils. A four-year rotation is recommended.
- Continue your fungicide spray program through mid-September if beets are going to be harvested for permanent piling.
- Read fungicide labels for pre-harvest intervals.

**Table 1: Classes of Fungicides**

Fungicide	FRAC Group Codes (Fungicides Group Names)
Inspire XT	3 (DMI)
Eminent 125SL	3 (DMI)
Enable 2F	3 (DMI)
Proline 480 SC	3 (DMI)
TOPGUARD	3 (DMI)
Super Tin or Agri Tin	30 (organo tin compound)
EBDCs	M3 (dithiocarbamates)
Coppers	M1 (inorganic)
Topsin	1(MBC)
Headline SC	11 (QoI)
GEM 500SC	11 (QoI)
Priaxor	7 & 11 (SDHI & QoI)

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