

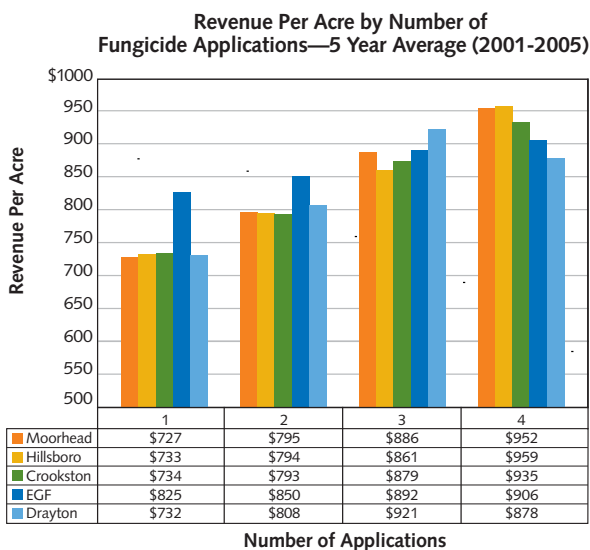
# Cercospora Leaf Spot Management

June 2006

## Three or More Fungicide Applications Maximize Short-Term Profit

*Historic grower practice data and research trial results indicate higher revenue per acre can be achieved with three or more fungicide applications. In addition, late season plant health effects can be realized with an application of Headline within 45 days of harvest.*

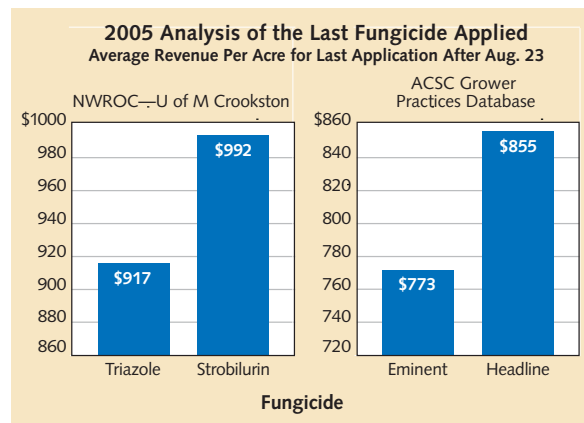
- Revenue per acre usually increases with the number of fungicide applications.
- Assuming a cost of \$20 per fungicide application, profit is usually maximized with three to four applications.
- Profit might be maximized with two applications in the case of late planting or low disease pressure.



Source: ACSC Grower Practices Database

## Late season growth enhancement and frost tolerance benefits

- Maintaining plant and leaf health during September and October is critical, with up to 35% of total sugar production occurring in these months.
- Maintaining a good canopy allows for maximum photosynthetic efficiency and light interception.
- Research by Dr. Larry Smith (NWROC) has demonstrated a late season growth benefit of up to \$75/acre (see chart below).
- Research in European Union countries and the UK supports the research of Dr. Smith.
- Results from American Crystal Sugar Company Grower Practice Database show a late season growth benefit of \$82/acre (see chart below).
- Spraying with Headline fungicide 30 – 45 days prior to harvest triggers the effect.
- Maintaining a healthy canopy increases frost tolerance and reduces the risk of frost damage.
- Improving disease control and reducing frost damage puts a better product into storage.



YOUR WAY TO GROW

Fertility | Variety Selection | Stand Establishment | Weed Control | Disease and Insect Control | Harvest

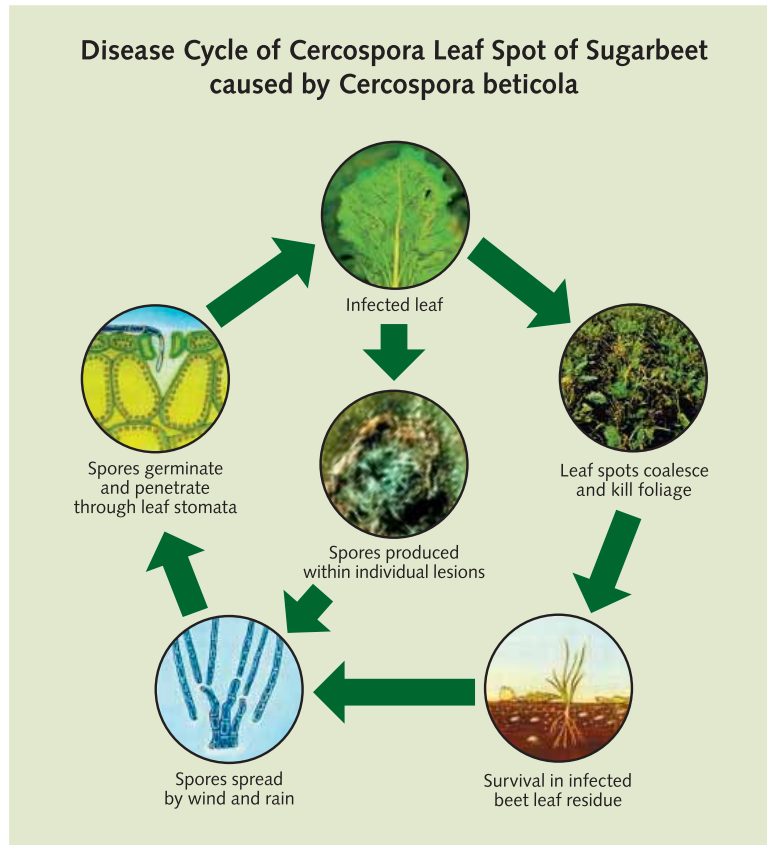
## Resistance Management Maximizes Long-Term Profit

### Field samples collected in 2005 show:

- Resistance to Topsin remains very high.
- Tin resistance is very low.
- The potential for resistance to Eminent is high.
- The potential for resistance to Gem is high.
- The potential for resistance to Headline is high.

### Cercospora management recommendations

1. Review resistance data for your area with your agronomist who has the RRV resistance maps.
2. Rotate fungicides throughout the season.
3. Give priority to resistance management whenever compatible with disease control.
4. Tin fungicides should be very effective at about half the cost of Strobilurins and Eminent.
5. If planning for two or three fungicide applications per field, use only one Gem or Headline application per season.
6. Use both Gem and Headline only if four separate fungicide applications are needed in a single season.
7. With four applications, Gem should be first and Headline should be fourth.
8. Never use Topsin alone and never more than once per year. It works well in a tank mix with Tin.
9. Eminent should be used only once per season and should be the first product used in programs designed for two or three applications.
10. Use enough water volume to maximize disease control with ground sprayers. The minimum use should be 10 gpa, with 15 gpa preferred and no need to exceed 20 gpa.
11. Spray Air systems can do a superior job of application. However, water volumes as low as 3 gpa are too low and are often off label. At least 5 gpa and up to 10 gpa is recommended with Spray Air equipment.
12. Inoculum level, date of planting, variety resistance rating, fungicide resistance data and local disease history should be considered when developing a spray program.



### General cercospora information

- Inoculum spores have a 1-2 year survival in infected leaf debris in sugarbeet fields when left on the surface. When tillage buries the debris, most inoculum spores are destroyed in 10 months.
- Optimal sporulation, germination, and infection occur at 75 to 90 degrees with night temperatures above 61 degrees and high relative humidity.
- Other hosts for *Cercospora* are Red Beet, Swiss Chard, Spinach and several weed species, particularly Redroot Pigweed and Common Lambsquarter.
- Under natural infection conditions, a 3.5 KWS rating is reported to cause economic damage by reducing root yield and percent sugar (KWS scale of 1-9, with lower numbers indicating less infection).

For additional information, contact your agronomist. See the current Sugarbeet Pocket Production Guide and the 2004 Sugarbeet Research and Extension Reports. Access the NDAWN website for current information on weather conditions favorable for disease development.

#### Web sites:

<http://ndawn.ndsu.nodak.edu/sugarbeetc-form.html>

[www.crystalsugar.com](http://www.crystalsugar.com)

