

AGNOTES

From the desk of **Joe Hastings, General Agronomist - Editor**

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2026 Cercospora Leaf Spot Recommendations

Keep Cercospora Leaf Spot Controllable

Control and Resistance Management of Cercospora Leaf Spot (CLS) is challenging due to Cercospora's polycyclic lifecycle that creates multiple generations of spores within a growing season. This is not like weed seed that is only produced 1 time/growing season. In contrast, Cercospora resistance is not stagnate. Meaning, resistance levels to different fungicide modes of action (MOA) will be dynamic across the in-season CLS generations, decreasing or increasing in response to the fungicide mode of action (MOA) that was applied. Also, the longer the interval between fungicide applications, the longer the corresponding resistant generation can propagate and increase. This is not only for resistance to fungicides but also includes resistance to Cercospora tolerant traits. Maintaining a 12-14 day fungicide application interval helps in decreasing these levels and in keeping Cercospora Leaf Spot controllable into the future.



Every tool for Cercospora control and resistance management needs to be used strategically and in-turn compliment and preserve the other's effectiveness.

This involves 3 main management practices:

1. Proper timing of fungicide applications

- Initial application — just prior to row closure, by the 1st week of July.
 - This delays Cercospora development in a field by reducing initial infections
 - 5 years of sample analyses has confirmed that Cercospora is present in 100% of samples without visual spots by the 1st week of July across the entire RRV.
- Subsequent applications @ 12—14 day intervals
 - Reduces the opportunity for isolates resistant to CR+ or other fungicide modes of action to propagate

2. Tank mix & rotate fungicide modes of action (MOA)

- This keeps both fungicide & genetic (CR+) resistance at low levels

3. Genetic tolerance

- Is not to be used as stand alone protection for Cercospora control
- Use varietal tolerance to limit CLS's potential severity & the development of fungicide resistant CLS populations; not to reduce the number of fungicide applications

See **Ag Note 649** for research findings on Cercospora Epidemiology.

This research has identified:

- CLS presence in leaves prior to visual detection
- Dynamic in-season Cercospora resistant population shifts occur in response to the fungicide modes of action applied
- Resistance is not absolute, there are surprisingly high levels of susceptible isolates within a sampled population



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RRV Initial CLS Fungicide Application

Origination sources of Cercospora infection

The very first Cercospora infections in a sugarbeet field originate from spores traveling from last year’s fields into the current year’s fields. The subsequent rounds of infections then occur as a result of the proliferation of spores from the initial infection within the field. It can be thought of as two separate Cercospora seasons from two different causal sources.

This highlights why it is so important to get the initial fungicide application on just prior to row closure to delay the onset of Cercospora infection in the field and thereby reduce the subsequent CLS inoculum levels. American Crystal Agriculturists have submitted leaf samples for latent detection (no visual CLS spots) the last 5 years and it has shown that Cercospora is present in leaves without visual symptoms in virtually 100% of locations North to South by the 1st week of July.

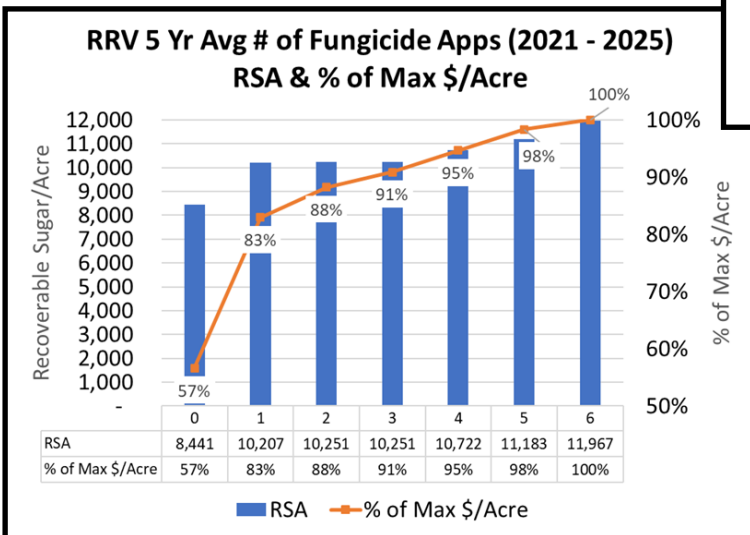
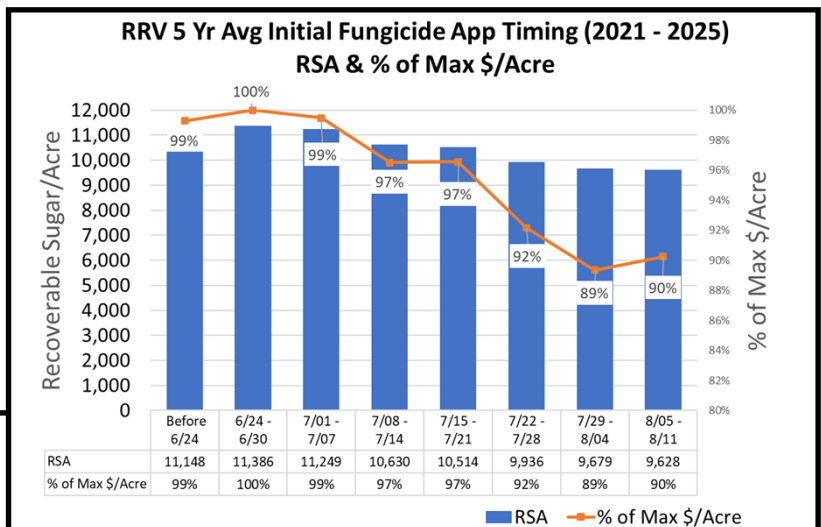
If Cercospora fungicide applications are not initiated on-time, it puts the entire fungicide program functionality in jeopardy. Fungicide applications are protective and are not “rescue” or “curative” treatments. Need to start clean to stay as disease free as possible.

Crop Years 2023, 2024, & 2025 have each had the earliest average initial fungicide applications to-date & 2025 with the most CLS fungicide applications.

This is from information collected by Agriculturists from growers and encoded into the Crystal database. 2023, 2024, and 2025 also have the records, respectively, for the 2nd, 3rd, and 1st highest amount of recoverable sugar/acre American Crystal has ever produced. Many variables have to come together to produce such outstanding crop results, and the proper timing of initial and subsequent fungicide applications is one of those components.

The chart to the right shows increased recoverable sugar/acre and revenue/acre with earlier initial fungicide applications. This is compiled from data collected by American Crystal Agriculturists from growers on their Cercospora fungicide application programs from 2021 – 2025 for the Red River Valley.

- Your Agriculturist has this same chart for their factory district and their growing area.
- The trends are the same for these as compared to the Red River Valley.



The chart to the left shows how recoverable sugar/acre and revenue/acre increases with each additional fungicide application. Each additional application pays for itself limiting Cercospora disease pressure and increasing both tons and quality.

- Your Agriculturist has this same chart for their factory district and their growing area.
- The trends are the same for these as compared to the Red River Valley.



Contact Your Agriculturist

Contact your American Crystal Agriculturist for the most up-to-date information on issues affecting sugarbeets in your area.

2026 American Crystal Sugar Company
CERCOSPORA LEAF SPOT FUNGICIDE PROGRAM



Application # Sequence based on Initial Fungicide Application Timing & 12-Day Intervals	Recommended Tank-Mix and Rotation Order of Fungicide Modes of Action Initial Fungicide Timing Just Prior to or At Row Closure <u>Start Late June - 1st Week of July</u>		
1	Triazole* + EBDC	Triazole* + EBDC	Triazole* + EBDC
2	TPTH + Topsin***	TPTH + Topsin***	TPTH + Topsin***
3	Verpixo + EBDC	Verpixo + EBDC	Verpixo + EBDC
4	Triazole* + EBDC	Triazole* + EBDC	Headline/Priaxor + TPTH
5	Headline/Priaxor + TPTH	Headline/Priaxor + TPTH	
6	Triazole** + EBDC		
7+	Discuss w/Agriculturist		

***Triazole Groups:**

- Alternate Group 1 & 2 Triazoles in program
- Group 1: Proline; Minerva, Domark, Eminent
- Group 2: Inspire XT & Provysol

****If 3 triazole applications:** Pick a different triazole fungicide than what was used from the initial triazole group applied in timing 1.

*****Benzimidazole:** Topsin or T-Methyl

Contact your American Crystal Agriculturist for the most up-to-date information and issues affecting sugarbeets in your area.

Fungicide Information Table

Fungicide	Fungicide Class	Rate/Acre	REI (Reentry Interval) Hours	PHI - (Pre- Harvest Interval) Days
Inspire XT/ Esquire XT	Triazole (Difenoconazole + Propiconazole)	7 oz.	12	21
Proline	Triazole (Prothioconazole)	5.7 oz.	12	7
Phobos FC	Triazole (Prothioconazole)	7.6 oz.	12	7
Provysol	Triazole (Mefentriflucanazole)	4 oz.	12	7
Minerva /Eminent VP	Triazole (Tetraconazole)	13 oz.	12	14
Domark	Triazole (Tetraconazole)	6.9 oz.	12	14
Minerva Duo	Triazole + TPTH (Tetraconazole + Triphenyltin Hydroxide)	16 oz.	48	21
Lucento	Triazole + SDHI (Flutriafol + Bixafen)	5.5 oz.	12	21
Veltyma	Triazole + Strobilurin (Pyraclostrobin + Mefentriflucanazole)	8 oz.	12	7
EBDC (Several Available)	EBDC (Macozeb)	Ranges by Product	24	14
Agri Tin Flowable / Super Tin 4L	TPTH (liquid)	8 oz.	48	7 MN / 7 ND
Topsin 4.5FL / T-Methyl 4.5F	Benzimidazole (liquid)	10 oz.	24	21
Topsin M 70WP / T-Methyl 70WSB	Benzimidazole (dry)	0.5 lbs.	24	21
Verpixo	Picolinamide (Qil)	20.5 oz.	12	21
Headline SC	Strobilurin	9 oz.	12	7
Priaxor	Strobilurin + Xemium	6.7 oz.	12	7
Copper (Several Available)	Copper	Ranges by Product	48	0

This table is not a substitute for the product label. Always refer to the label for product details.

Additional Applications @ End of Season Fungicide Recommendations

Time Headline/Priaxor with tank mix partner application the last week of August to 1st week of September for Cercospora control & optimize plant health and frost tolerance benefits

- Fungicide application may still be needed after Headline/Priaxor application, depending on pressure and weather conditions.
- Discuss with Agriculturist options w/PHIs for Prepile and Stockpile.

Fungicide Application Tips & Detail

CLS Variety Rating	Water Volume	Spray Intervals	Glyphosate Tank Mixes
CLS control should improve with a better CLS variety rating. However, this may not equate to fewer fungicide applications.	CLS fungicides need excellent coverage to protect the sugarbeet leaf surface. To achieve this requires 15 to 20 gallons of water per acre. Using nozzles that will produce Medium droplet sizes of 250–350µm (microns) is optimum for fungicide applications. Utilize nozzle manufacturer's recommended application pressure for maximum leaf coverage.	Start early and stay on track once CLS is found in your area. The time interval between applications <u>should not exceed 12 days</u> , plan best as possible around adverse weather conditions (rain, wind, hail). <u>For EBDC's alone follow a 7-8-day spray interval.</u>	Are not recommend with CLS fungicide applications since optimum water volume requirements are different for glyphosate and CLS fungicide applications as the target pests are not the same.

Triazoles:

- Do not use in more than 50% of applications per cropping season and only in a tank-mix.
- Triazoles are vital to CLS management and overuse may further increase resistance.
- Alternate different Triazoles if used more than once in a spray season.
- Due to a high probability of cross-resistant CLS spores, only one product from the below groups should be used in a season:
 - Group 1: Do not use both Proline/Phobos FC & Minerva/Domark/Eminent in the same growing season.
 - Group 2: Do not use both Inspire XT/Esquire XT & Provysol in the same growing season.
 - **If 3 triazole applications:** Pick a different triazole fungicide than what was used from the initial triazole group applied.
- Watch Preharvest intervals (PHIs) for Triazoles. They can range from 7 to 14 to 21 days.
 - Consider applying Triazoles with longer PHIs early in the spray season.
 - Use shorter PHI's later in your fungicide program for harvest planning

EBDCs (Mancozeb/Manzate):

- Are an effective tank mix partner for CLS control and resistance management.
- There is no known resistance to EBDCs.
- Pre-slurrying product helps in tank-mixing.
- Manebs are not as effective on CLS as Mancozeb's.

Tins (TPTH):

- Use in only **2 applications** per cropping season and only in a tank-mix.
- Tins are vital to CLS management and overuse may further increase resistance.

Topsin (Benzimidazole):

- Use only **once** per season early in spray program and only in a tank-mix (e.g., Tins -TPTH).

Verpixo (Picolinamide - Qil):

- Brand new mode of action - needs to be used properly to maintain effectiveness
- Always tank-mix with an EBDC
- Recommend only 1 application/season: Cannot not be more than 1/3 of total fungicide applications
 - Max Applications = 2 (6 total fungicide applications required to apply twice)

Headline/Priaxor/Veltyma (Strobilurin - Qol):

- Headline/Priaxor benefits include: plant health; harvest frost deterrence/recovery; and storage benefits.
- Use with a tank mix of Tin (TPTH) or Triazole at a full rate.

Copper:

- Coppers have a 0-day Pre-Harvest Interval (PHI), option if up against Pre-Harvest Intervals during pre-pile or before stockpile harvest as a tank-mix partner.
- Ideally, tank-mix copper with a non-contact fungicide (Triazole) to avoid two contact fungicides in the same application. Must adhere to the PHI of tank mix partner.
- Talk to your Agriculturist if you are planning to use a Copper product.

ACSC Cercospora Recommendations

These guidelines focus on effective Cercospora Leaf Spot (CLS) control and fungicide resistance management. To maintain fungicide efficacy, use proper tank mixes and adhere to recommended application intervals.

- **Fungicides act as protectants, not curatives.**
- **Initial timing is critical**—apply before or at row closure to prevent disease establishment. It is better to apply early than too late.
- **Fungicide Application intervals:**
 - **12 days** between sprays.
 - **7 days** if EBDCs are applied alone within the recommended program.
- **Tank-mix strategy and rotate modes of action (MOA)**
 - All application recommendations combine **systemic/translaminar** with **contact fungicides**.
- The tank mix recommendations and order on the front of the card condition the Cercospora population to be more susceptible to following applications of different MOA's.



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