American Crystal Sugar Company

AG NOTES

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

www.crystalsugar.com

ISSUE 643 JUNE 12 2025

2025 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 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 generation's resistance can propagate and increase. This is not only for resistance to fungicides but also includes resistance to high tolerance traits like CR+. 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
     - Delays Cercospora development in a field by reducing initial infections
   - 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)**
   - To keep both fungicide & genetic (CR+) resistance at low levels
3. **Genetic tolerance traits—such as CR+**
   - Are not to be used as stand alone protection for Cercospora control
   - Use genetic tolerance to limit development of fungicide resistant CLS populations

See Ag Note 640 published this past March on recent research findings on Cercospora Epidemiology.

This research has identified:

- Early CLS spore dispersal from previous year's fields
- 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

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 two separate Cercospora seasons with different causal sources.

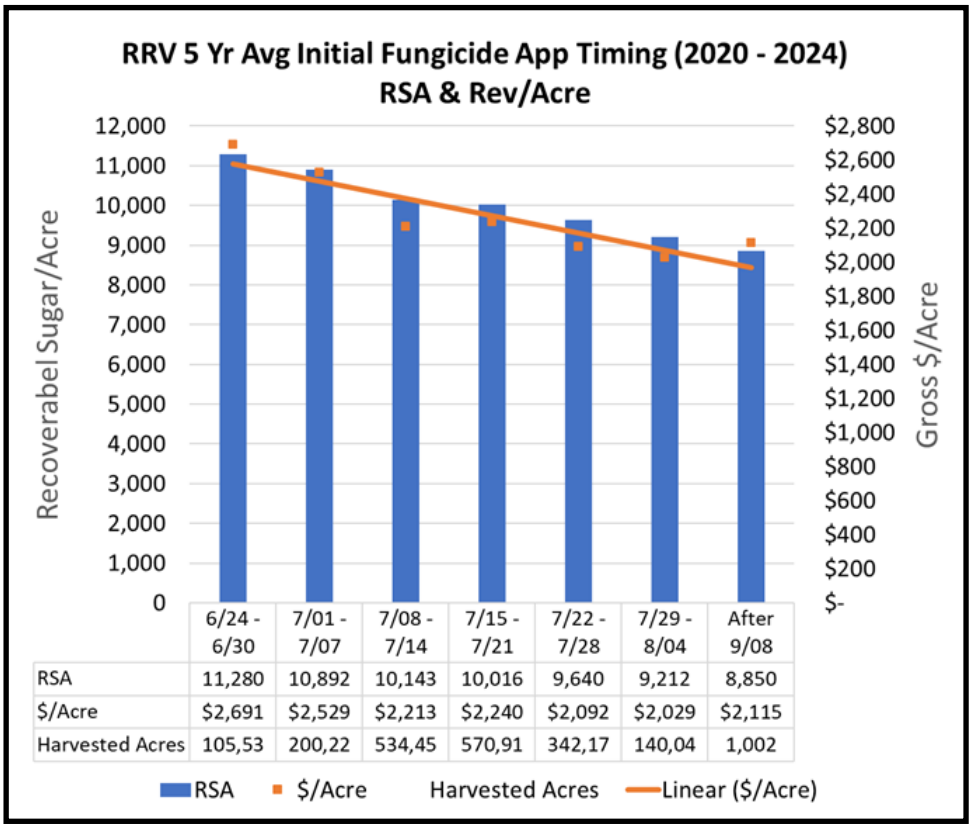
This highlights why it is so important to get the initial fungicide application on just prior to row closure to delay the onset of Cercospora in the field and thereby reduce the subsequent CLS inoculum levels. American Crystal Agriculturists have submitted leaf samples for latent detection (no visual CLS spots) the last 4 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.

2023 & 2024 crop years have each had the earliest average initial fungicide applications to-date

The past two growing seasons have set back to back records for the earliest average initial fungicide application date for CLS control. This is from information collected by Agriculturists from growers and encoded into the Crystal database. 2023 and 2024 also have the record for the 1st & 2nd 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 below 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 2020 – 2024 for the Red River Valley.

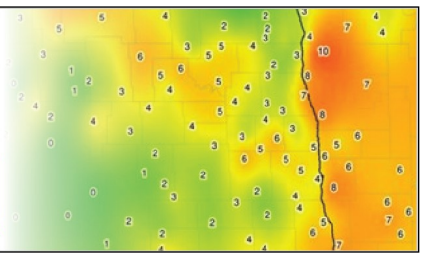
- Your Agriculturist has this same chart for their factory district and their growing area.
  - The trends are the same for these as compared to the Red River Valley.



	6/24 - 6/30	7/01 - 7/07	7/08 - 7/14	7/15 - 7/21	7/22 - 7/28	7/29 - 8/04	After 9/08
RSA	11,280	10,892	10,143	10,016	9,640	9,212	8,850
$/Acre	$2,691	$2,529	$2,213	$2,240	$2,092	$2,029	$2,115
Harvested Acres	105,53	200,22	534,45	570,91	342,17	140,04	1,002

Monitor CLS Daily Infection Values (DIVs)

NDAWN
NORTH DAKOTA AGRICULTURAL WEATHER NETWORK



Contact Your Agriculturist

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

2025 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 Late June—1st Week of July			LATE JULY Initial Application (Replants)	
				OPTION 1	OPTION 2
1	Triazole + EBDC	Triazole + EBDC	Triazole + EBDC	Triazole + EBDC	TPTH + Benzimidazole
2	EBDC	TPTH + Benzimidazole	TPTH + Benzimidazole	TPTH + Benzimidazole	Triazole + EBDC
3	TPTH + Benzimidazole	Triazole + EBDC	Triazole + EBDC	Headline/Priaxor + Triazole	Headline/Priaxor + TPTH
4	Triazole + EBDC	EBDC	Headline/Priaxor + TPTH		
5	EBDC	Headline/Priaxor + TPTH			
6	Headline/Priaxor + TPTH				

ACSC Cercospora Recommendations are formulated based on both:

Cercospora Leaf Spot (CLS) control and resistance management of fungicides and varietal tolerances:

To achieve Cercospora control, maintain fungicide efficacy, and preserve varietal tolerances, proper fungicide tank mixes and application intervals are required. Normal fungicide application intervals (12 days) limit the propagation of Cercospora isolates that are resistant to generic tolerances such as CR+.

- **Fungicides are protectants**; they are not curatives
- **Initial fungicide application timing is critical**, prior to or at row closure, to prevent Cercospora establishment in fields. It is better to apply early than too late.
    - Initial fungicide applications and application intervals should have **same timing for both CR+ and non-CR+ varieties.**
- **Tank-mix and rotate different fungicide chemistry classes** (modes of action / MOA)
    - This conditions the cercospora population to be susceptible to subsequent applications of different MOAs
    - ACSC tank-mix recommendations are a combination of both systemic/translaminar + contact fungicides
- **12-day spray intervals in-between applications. Except 7-day interval when EBDCs are applied alone.**
- CR+ varieties are an effective tool if cercospora pressure is kept low. It is not recommended to extend intervals.

Additional Applications @ End of Season Fungicide Recommendations:

Headline/Priaxor with tank mix partner to be applied last week of August to 1st week of September to 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.

Contact Your Agriculturist

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

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 should not exceed 12 days, plan best as possible around adverse weather conditions (rain, wind, hail). For EBDC's alone follow a 7-8-day spray interval.	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:
  - Do not use both Inspire XT/Esquire XT & Provysol in the same growing season.
  - Do not use both Proline/Phobos FC & Minerva/Domark in the same growing season.
- 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 Mancozebs.

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).

Headline/Priaxor/Veltyma (Strobilurin):

- 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.

American Crystal Sugar Company

AG GOLD STANDARDS

Fungicide Use Information

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 (Mefentrifulconazole)	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 (Tetraconzole + Triphenyltin Hydroxide)	16 oz.	48	21
Lucento	Triazole + SDHI (Flutriafol + Bixafen)	5.5 oz.	12	21
Veltyma	Triazole + Strobilurin (Pyraclostrobin + Mefentrifulconazole)	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-Menthyl 70WSB	Benzimidazole (dry)	0.5 lbs.	24	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.