



American Crystal Sugar Company

AgNotes



American Crystal 2021 Cercospora Control Recommendations

Cercospora Leafspot (CLS) fungicide recommendations incorporate both CLS control and resistance management.

Each recommended fungicide tankmix combines 2 different modes action as well as them being a translaminar/systemic fungicide paired with a contact fungicide.

- Except when EBDC is alone in the 5 & 6 spray programs
- There is no documented resistance to EBDC fungicides

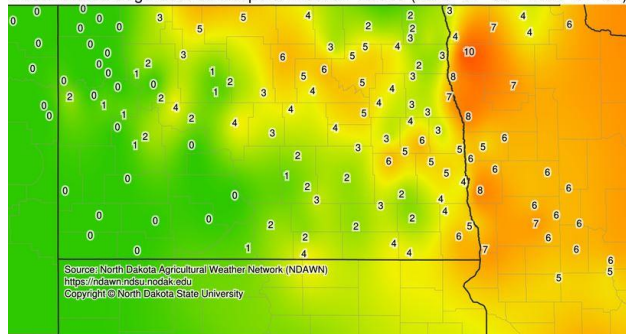
Starting your Cercospora Leaf Spot Spray program: If you think you're spraying too early, you're probably right on time.

- There is a robust amount of cercospora inoculum in the environment from the 2020 growing season
- Start program once rows start to close coinciding with Moderate to Severe Daily Infection Value's. Start early and stay on track.
- After a Cercospora infection occurs, it can take 5 to 21 days for spots to appear on the leaf.
- Fungicides are protectants and are not curatives
- To limit CLS infections, be proactive by applying fungicides to protect the sugarbeet leaves before infections can occur

Tools to Monitor CLS Daily Infection Values

- American Crystal Agronomy App
 - Free, found in the "App Store" (Apple) or "Google Play" (Android)
- NDAWN Website
 - <https://ndawn.ndsu.nodak.edu/sugarbeet-cercospora.html>

Accumulated Sugarbeet Cercospora Infection Values (2020-07-03 – 2020-07-04)



June 7, 2021
 Issue 620
 Joe Hastings, Editor
www.crystalsugar.com

<https://www.crystalsugar.com/sugarbeet-agronomy/7-gold-standards/>

- Fertility
- Variety Selection
- Stand Establishment
- Weed Control
- Disease & Insect Control
- Harvest

Your Way TO GROW

2021 ACSC Recommended Cercospora Leaf Spot (CLS) Spray Program

Fungicide Application Sequence based on Initial Fungicide Application Timing	Timing of Initial Fungicide Application						
	Late June 6 Spray Program	Early-Mid July 5 Spray Program	Mid-Late July 4 Spray Program	Late July- Early Aug 3 Spray Program		Early-Mid Aug 2 Spray Program	Late Aug 1 Spray Program
				Option 1	Option 2		
Application #1	Triazole + EBDC	Triazole + EBDC	Triazole + EBDC	Triazole + EBDC	TPTH + Topsin	Triazole + EBDC	Headline/Priaxor + TPTH
Application #2	EBDC	TPTH + Topsin	TPTH + Topsin	TPTH + Topsin	Triazole + EBDC	Headline/Priaxor + TPTH	
Application #3	TPTH + Topsin	Triazole + EBDC	Triazole + EBDC	Headline/Priaxor + TPTH	Headline/Priaxor + EBDC		
Application #4	Triazole + EBDC	EBDC	Headline/Priaxor + TPTH				
Application #5	EBDC	Headline/Priaxor + TPTH					
Application #6	Headline/Priaxor + TPTH						



Fungicide Use Information

Fungicide Class	Fungicide	Rate/Acre	REI – (Reentry Interval) Hours	PHI – (Pre-Harvest Interval) Days
Triazole	Provysol	4.0 oz.	12	7
Triazole	Inspire XT	7.0 oz.	12	21
Triazole	Proline	5.7 oz.	12	7
Triazole	Minerva / Eminent VP	13 oz.	12	14
Triazole & TPTH	Minerva Duo	16 oz.	48	14
Triazole & SDHI	Lucento	5.5 oz.	12	21
EBDC	Several Available	Ranges by Product	24	14
TPTH (Liquid)	Agri Tin Flowable / Super Tin 4L	8.0 oz.	48	7
TPTH (Dry)	Agri Tin / Super Tin 80 WP	5.0 oz.	48	7 MN / 21 ND
Benzimidazole (Liquid)	Topsin 4.5 FL / T-Methyl 4.5F	10.0 oz.	24	21
Benzimidazole (Dry)	Topsin M 70W / T-Methyl 70WSB	0.5 lbs.	24	21
Strobilurin	Headline SC	9.0 oz.	12	7
Strobilurin + Xemium	Priaxor	6.7 oz.	12	7
Copper	Several Available	Ranges by Product	48	0

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

Fungicide Class (Mode of Action) Information

Tankmix and rotate fungicide classes for cercospora control & resistant management

- Do not apply same MOA back-to-back in consecutive applications
 - The exception is EBDC in the 5 & 6 spray programs

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 if applying just 2 Triazoles per season:
 - Do not use both Provysol & Inspire XT in the same growing season.
- Watch Preharvest intervals (PHI's) for Triazoles, they can range from 7 to 14 to 21 days.
- Consider applying Triazoles with longer PHI's early in the spray season and shorter PHI's later in your fungicide program for harvest planning.

EBDC's (Mancozeb/Manzate):

- Are an effective tank mix partner for CLS control and resistance management.
- There is no known resistance to EBDC's.
- EBDC is only recommended to be used as a standalone in the 5 or 6 spray programs
- If EBDC is used alone the Spray Interval should not exceed 7 days
- 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.
- Watch Pre-Harvest intervals (PHI's) as they range from 7 - 21 days.

Topsin (Benzimidazole):

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

Headline/Priaxor (Strobilurin):

- Headline/Priaxor benefits include: plant health; harvest frost deterrence/recovery; and storage benefits.
- Use only with a tank mix of Tin (TPTH) at full rate. Exception is in the 3 Spray program under Option 2 where EBDC is used as the tank mix.

Copper

- Coppers have a 0-day Pre-Harvest Interval (PHI), creates an 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.

WALES tank mixing order for any Pesticide:

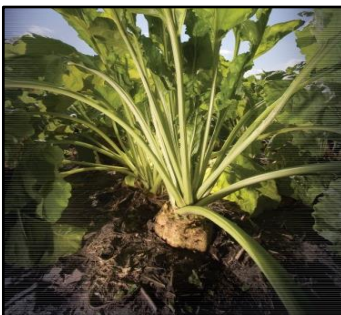
1. **W**ettable powders & dispersible granules
2. **A**gitate tank to mix thoroughly
3. **L**iquid flowables & suspensions
4. **E**mulsifiable concentrate formulations
5. **S**urfactants & Solutions

Tips for Maximizing Cercospora Leafspot Control



For prompt answers to your questions and comments, call and leave a message and Tom Astrup or one of his staff will respond as soon as possible.

**Shareholders:
1-800-633-8941**



CONTACT YOUR AGRICULTURIST

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

1. **CLS variety rating** – CLS control should improve with a better CLS variety rating. However, this may not equate to fewer fungicide applications. Variety Selector: <https://www.crystalsugar.com/media/581398/variety-selector2020.pdf>
2. **Daily Infection Values** – Monitor Daily Infection Values (DIV's) and weather forecasts for timing initial and following fungicide applications. Found on:
 - Crystal Agronomy App
 - NDAWN: <https://ndawn.ndsu.nodak.edu/sugarbeet-Cercospora.html>
3. **Timing of fungicide program** – Start program once rows close and coinciding with Moderate to Severe DIV's. Start early and stay on track. Cercospora Leaf Spot can appear 5 to 21 days after spore infection. Fungicides are protectants and being proactive by applying fungicides ahead of infection limits the development of Cercospora leaf spot.
4. **Full rates** – In tank mixes utilize full application rates of each tank mix partner, following label recommendations.
5. **Spray intervals** – 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-day spray interval.
6. **Aerial application** – If too wet for ground application, stay on schedule with an aerial application.
7. **Glyphosate tank mixes** – 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.
8. **Pre-Pile & Fungicide Pre-Harvest Intervals** – Be aware of each fungicide's Pre-harvest Interval and how that may impact pre-pile harvest plans. Adjust your fungicide spray program accordingly.
9. **Water volume** – CLS fungicides need excellent coverage to protect the sugarbeet leaf surface. To achieve this requires 15 to 20 gallons of water per acre.
10. **Pressure** – High pressure applications at 80+ psi provides improved leaf coverage depending on the spray tip chosen.
11. **Spray nozzles/tips & droplet size**– Using nozzles that will produce Medium droplet sizes of 250–350µm (microns) is optimum for fungicide applications. Utilize nozzle manufacturer's recommended application pressure to operate within this range. Use proper spray boom height above crop canopy depending on chosen spray nozzle degree angle for best coverage.
12. **Tank mixes** – All fungicide applications should contain more than one chemistry or mode of action (only exception would be EBDC's). Tank-mixing fungicide MOA's and rotating MOA's are paramount. Using only a single fungicide, MOA, increases resistance development pressure to that fungicide. Single fungicide applications may "get you by" but will increase and compound resistance to fungicides on your farm and surrounding neighbors. Utilizing all available fungicide chemistry wisely is vitally important for current fungicide options today and tomorrow. Any tank mix should be sprayed out as soon as possible, with agitation, do not allow mix to sit overnight, spray tank out completely, and rinse sprayer (all lines and tank) with clean water daily.
13. **Water temperature** – Warm water is best for dissolving & mixing fungicides. Pre-warm water in dark bulk tanks a few days prior to use, sunlight aids in warming the water.
14. **Jar test** – If in doubt about a tank mix, run a jar test to see if combination is compatible before loading sprayer.
15. **Scout fields** –during the growing season to evaluate how your fungicide spray program is working.