



American Crystal Sugar Company

# AgNotes



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## Cercospora Leafspot Management Notes



Last year's Cercospora Leafspot (CLS) management throughout the Red River Valley was overall successful when considering three company record RSA crops in a row (2016-2018 crops) aided by proper varietal choices and supporting cultural practices throughout the RRV allied industry. We cannot relax CLS management efforts at all; keeping CLS inoculum low continues to be a critical objective.

Room for improvement: tank mixes are a necessity...single chemistry applications will “get you by”, while simultaneously increasing resistance to fungicides on your farm and surrounding neighbors. Single chemistry fungicide applications simply compound the fungicide resistance issue. Below are tactics to heed as was discussed this past winter at Your Way to Grow Meetings in your district:

1. **Starting spray program** – Start early and stay on track once CLS is found in your area, based on observations in bullet #2. Will need to customize spray program around Pre Harvest and Pre Harvest Intervals.
2. **Scouting fields** – Scout fields early and well looking for CLS presence and scouting during the year for evaluating how your spray program is working...making adjustments where needed. NDSU will have research plots for observation with possible adjustments for spray program in-season.
3. **Infection values** – The current Cercospora Model works well, pay attention to Daily Infection Values (DIV's) and weather forecasts for fungicide application timing. Utilize the Crystal Agronomy App or monitor Cercospora Leafspot DIV's (Daily Infection Values) at: <https://ndawn.ndsu.nodak.edu/sugarbeet-cercospora.html>
4. **Variety ratings** – Know your variety ratings, CLS control should improve with better CLS variety rating. Better CLS variety ratings do not always allow equate to fewer fungicide applications.
5. **Water volume** – CLS fungicides require excellent coverage as most fungicides are contact/coverage oriented products. 15 to 20 gallons of water per acre should be utilized. With dew on leaves in morning, consider 10-15 gallons. With dry leaves in the afternoon, consider 15 – 20 gallons.
6. **Water temperature** – To ensure best dissolving/mixing, pre-warm water in dark bulk tanks a few days prior to use, sunlight aids in warming the water.
7. **Pressure** – Utilize nozzle manufacturer's best recommended application pressure for maximum leaf coverage, higher pressure applications (80+ psi) provide improved leaf coverage depending on spray tip chosen.

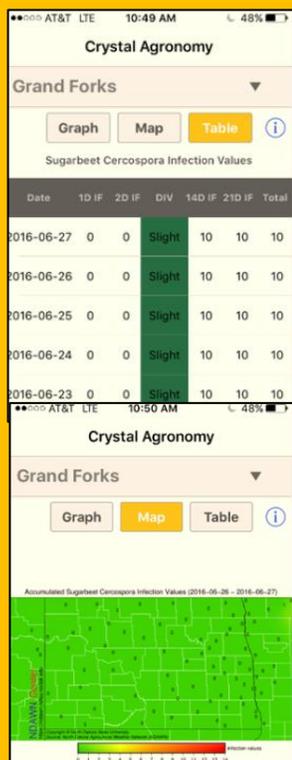


- Fertility
- Variety Selection
- Stand Establishment
- Weed Control
- Disease & Insect Control
- Harvest

Your Way  
TO GROW

## American Crystal Agronomy App

As a reminder, for keeping a close eye on Cercospora Leafspot development, the American Crystal Agronomy App is available and free, found at “the App Store” or “Gooodle Play”.



8. **Spray nozzles/tips** – Obtain and use proper nozzles for fungicide application optimizing coverage on leaves, top and bottom, as best possible. Pay attention to proper spray boom height above crop depending on chosen spray nozzle degree angle.
9. **Aerial application** – To stay on spray schedule with wet soils or if there are tank mixes you prefer not to use in your sprayer, consider aerial application
10. **Sprayers** – Spray Air sprayers provide a benefit for fungicide applications, fungicide coverage is important here.
11. **Glyphosate tank mixes** – We do not recommend tank mixes of CLS fungicides and Glyphosate as water volume requirements vary between glyphosate and CLS fungicide applications. Two different targets are involved as a reminder.
12. **Tank mixes** – All fungicide applications should contain more than one chemistry or mode of action (only exception would be EBDC’s). Utilizing all available fungicide chemistry wisely is vitally important to current fungicide options today and tomorrow. Overall, 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. **Jar test** – If in doubt about a tank mix, run a jar test to see if combination is compatible before loading sprayer and finding out otherwise.
14. **Full rates** – For these tank mixes, utilize full application rates of each tank mix partner, following label recommendations.
15. **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, follow a 7-8 day spray interval, stretching these spray intervals equates to thin protection.
16. **Tins (TPTH)** – Tins (TPTH) to be used in only two applications per cropping season and only as a tank mix with other chemistry. Tins are vital to CLS management and concerns of overuse may incite further resistance concern. Pay attention to Pre Harvest intervals (PHI’s) as they range from 7 - 21 days.
17. **Topsin (Benzimidazole)** – To only be used with tank mix (e.g. Tins - TPTH) and only once per season.
18. **Triazoles** – Triazoles are vital to CLS management and concerns of overuse may incite further resistance concern, just as TPTH. Alternate Triazoles if used twice in a spray season. Pay attention to Preharvest intervals (PHI’s) for Triazoles, they range from 7 to 14 to 21 days.
19. **Minerva Duo** – Is a combination of a Triazole + TPTH in a premix formulation and considered a tank-mix (premix). Do not tank mix Minerva Duo with glyphosate.
20. **EBDC’s (Mancozeb/Manzate)** – EBDC chemistry have been included in our fungicide management plan as a tank mix partner. Manebs are not as effective on CLS as Mancozeb’s.
21. **Headline/Priaxor (Strobilurin)** – Amidst increasing resistance to this chemistry/mode of action, Headline/Priaxor remains in our recommendation for harvest frost deterrence and plant health benefits and only in concert with a tank mix of Tin (TPTH) at full rate. Your Agriculturist has resistance information pertaining to your region on Headline/Priaxor recommendations.
22. **Contact your Agriculturist** – For further details in regards to your growing region, please contact your Agriculturist.

## Fungicide Use Information

Fungicide Class/Group	Fungicide	Rate/Acre	REI- (Reentry Interval) Hours	PHI- (Preharvest Interval) Days
Triazole	Inspire XT	7.0 oz.	12	21
Triazole	Proline	5.7 oz.	12	7
Triazole	Minerva/Eminent VP	13.0 oz.	12	14
Triazole + TPTH	Minerva Duo	16.0 oz.	48	14
TPTH	Agri Tin Flowable (Liquid)	8.0 oz.	48	7 MN, 7 ND
TPTH	Agri Tin (Dry)	5.0 oz.	48	7 MN, 21 ND
TPTH	Super Tin 4L (Liquid)	8.0 oz.	48	7 MN, 7 ND
TPTH	Super Tin 80 WP (Dry)	5.0 oz.	48	7 MN, 21 ND
Strobilurin	Headline SC	9.0 oz.	12	7
Strobilurin + Xenium	Priaxor	6.7 oz.	12	7
Benzimidazole	Topsin M 70W/T-Methyl 70 WSB (dry)	0.5 lbs.	24	21
Benzimidazole	Topsin 4.5 FL/T-Methyl 4.5 F (liquid)	10.0 oz.	24	21
EBDC	Several available	Ranges by Product	24	14



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**

This chart is no substitute for the product label. Always refer to the label for details.

**Mixing order** - for any pesticides, especially as we head into CLS spray season, **WALES** (or **DALES** mixing order if dispersible granule formulations are used):

**WALES** tank mixing order is as follows:

**W**ettable powders and water dispersible granules

**A**gitate tank mix thoroughly

**L**iquid flowables and suspensions

**E**mulsifiable concentrate formulations

**S**urfactants/Solutions

# 2019 ACSC Cercospora Leaf Spot (CLS) Spray Program

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## Early to Mid-July (6-Spray Program)

- Application 1 – Triazole\*\*\* + EBDC
- Application 2 - EBDC
- Application 3 – TPTH\* + Benzimidazole\*\*
- Application 4 – Triazole\*\*\* + EBDC
- Application 5 - EBDC
- Application 6 - Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of September)

## Mid July (5-Spray Program)

- Application 1 – Triazole\*\*\* + EBDC
- Application 2 - TPTH\* + Benzimidazole\*\*
- Application 3 – Triazole\*\*\* + EBDC (apps 3 & 4 can be alternated)
- Application 4 – EBDC
- Application 5 - Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of September)

## Mid to Late July (4-Spray Program)

- Application 1 – Triazole\*\*\* + EBDC
- Application 2 - TPTH\* + Benzimidazole\*\*
- Application 3 – Triazole\*\*\* + EBDC
- Application 4 – Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of September)

## Late July to Early August (3-Spray Program)

- Application 1 – TPTH\* + Benzimidazole\*\*
- Application 2 - Triazole\*\*\* + EBDC
- Application 3 – Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of September)

## Early to Mid-August (2-Spray Program)

- Application 1 – Triazole\*\*\* + EBDC
- Application 2 – Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of September)

## Late August (1-Spray Program)

- Headline + TPTH\* or Priaxor + TPTH\* (apply Aug 25 through 1<sup>st</sup> week of Sept.)  
or
- Headline + Triazole\*\*\* or Priaxor + Triazole\*\*\* (apply Aug 25 through 1<sup>st</sup> week of Sept.)  
or
- Triazole\*\*\* + EBDC or Triazole\*\*\* + TPTH\*  
or
- Benzimidazole + Triazole

\* TPTH should NOT be used more than twice per year & used only at Full Rate

\*\* Benzimidazole should be used only once per season and NEVER alone.

\*\*\* Triazoles not to exceed 50% of total applications in a season

-- 12 day intervals on all products except EBDC alone is 7-8 days --

----- In tank mixing order, dry formulations go in first followed by liquids -----

--- Always start with plenty of water and good agitation from start to finish ---



### CONTACT YOUR AGRICULTURIST

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