

AGRICULTURAL BEET

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CLS Testing and Disease Monitoring

Ready or not, it's Cercospora leaf spot season. We've come to know that for sugarbeet fields to remain disease-free, an early fungicide program must be implemented. The Ag Staff and growers have been finding pockets of bacterial leaf spot including some leaf margin infection which is less common, but not unheard of. Bacterial leaf spot (seen below left) is always a precursor to CLS (below right). The Ag Staff usually identifies Cercospora two weeks after the first bacterial symptoms.



SMBSC's Ag department has worked with Dr. Nathan Wyatt, USDA/ARS for the last few years on early latent (asymptomatic) infection testing for CLS in fields from here to the north end of the Red River Valley. Leaf samples are collected from nearly 60 fields in SMBSC for DNA analysis to detect CLS within the leaf. Hitting 100% detection on these samples infers that **WE HAVE CLS IN EVERY FIELD!!!** It is becoming more common to go from near 0 detection to 100% within one week.

Leaf Sample date	Detected	% of samples
6/29/2022	35	63%
7/8/2022	56	100%
6/19/2023	14	25%
6/26/2023	55	98%
6/13/2024	7	13%
6/20/2024	56	100%

This year we went from 13% to the inevitable 100% by June 20th!! Although we have not found physical spots yet, knowing that we have this latent infection in every field sampled and several cases of bacterial leaf spot, we know Cercospora is preparing its offensive. **With a seemingly earlier latent infection, we need early protection as much as we ever have.**

The other method by which we track CLS development is adding up our growing degree days to identify when we will hit certain thresholds. At 1500 GDD we know that latent infection can begin, and as soon as we get to 1700, Cercospora can develop visible symptoms.

Various locations around the co-op have hit the target thresholds of CLS onset. Even with the cold and wet conditions we've had to endure, the later planted beets are reaching levels of canopy closure that are suitable for actively promoting the disease without protection.

Location	GDD Accumulation			
	4/13 Planting		4/23 Planting	
	as of 6/14	as of 6/26	as of 6/14	as of 6/26
Redwood Falls	1553	1979	1374	1795
Renville	1504	1923	1349	1767
Hector	1482	1886	1341	1757
Clara City	1494	1913	1352	1771
Benson	1487	1880	1345	1755

Fortunately, SMBSC growers realize that it is critical to get an early start knowing that CLS is a rapid onset foliar disease. Once we identified the GDD targets were approaching and canopy was 4" from relative closure, SMBSC Ag Staff targeted the early planted fields for the first spray recommendations. Some fields may seem held back by wet conditions and the stress that brings with it. However, with the outlook of great sugar prices and factory improvements paying off, **it is very much worth the investing in the CLS fungicide program on the farm!!!**

It has been comforting to hear the various aerial applicators roaring through the skies beginning late last week. It may seem like we make some of these applications too soon before the actual symptomology of the disease, but there is outstanding evidence proving that the early applications are the only way to keep fields clean all season by preventing CLS from getting a foothold. Assuming our fields dry up to get the ground application equipment out soon, we can ensure that we hit all the corners and borders that may be missed by any recent aerial applications.



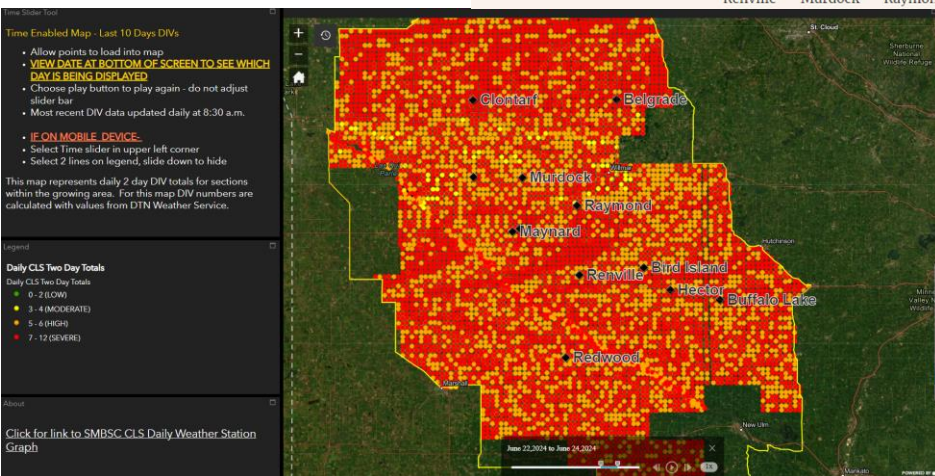
Planning Ahead

Beyond monitoring for CLS onset and entering spray season, we maintain a couple of really excellent tools which provide up to date daily information for maintaining spray programs. Beginning with a location specific weather model, we are able to create a two-day CLS index value providing us an excellent indication of current infection potential. As we start to see sustained higher humidity levels, we know that our index values can spike, and this was observed on June 21/22.

As we progress through the spray season, it is critical to watch these values and be ready to call some audibles for our spray programs. Using the same index formula, we are also able to create a 2-day map with township based index values seen below.



The map can play through the progression of the previous 10 days values. This provides for excellent geospatial data for fields further from our weather stations. As we wrap up our first applications this week, it will be critical to use these tools going into the sultry season of CLS spraying. Agriculturalists are out now scouting for CLS and other field concerns.



Knowing that CLS development is underway, keep in mind these BMPs for good fungicide application:

- Water volume at 20 or more gallons per acre
- Nozzle selection to match speed to provide consistent medium droplet sizes of 200-350 microns
- **Tank mix multiple modes of action to keep up the fight against resistance development!!**

Check the Agronomy page on the [SMBSC website](#) for the DIVs and Quicksheets for more detailed fungicide program information. Always follow label instructions and consult your Agriculturalist for advice on your crops' status and upcoming application needs.



Information Credit:

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