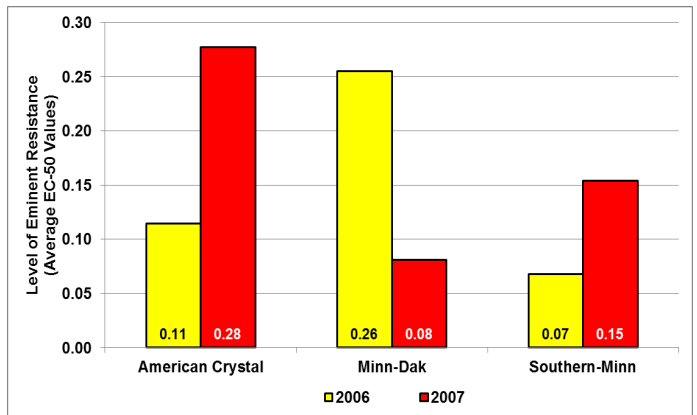




# Cercospora Management for 2013...

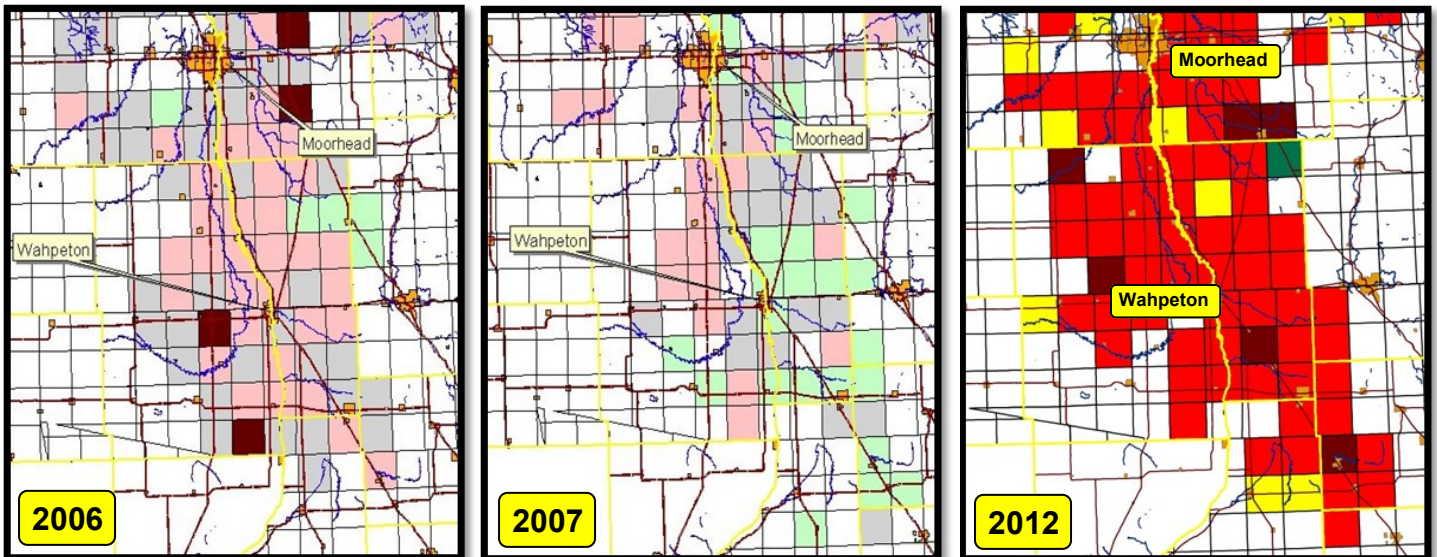
Each and every year, Agriculturists from all three sugar cooperatives in the valley collect sugarbeet leaves infected with Cercospora Leaf Spot (CLS) to be analyzed by the Plant Pathology Department at NDSU for their level of resistance to some of our most common commercial fungicides. Using several specialized tools and molecular techniques, the data generated from these diseased leaves is used to calculate an EC50 value for each individual sample (which is a standardized figure used to measure fungicide resistance).

Once the EC50 value has been established, the data is correlated back to its field of origin. Just like bar graphs help explain a complex set of numbers, color-coding townships on a map by level of average EC50 values helps visualize the problem at hand. When the current values are compared to the values collected from previous years, more often than not, several differences can be found. These differences can be directly related to the pathogen's "shift" in fungicide sensitivity, or simply put, how effective is the fungicide in question. These resistance maps (shown below) can be interpreted as gray and green-colored townships being good (lower levels of resistance) and pink and red being bad (higher levels of resistance). Take note how the 2006 resistance map correlates well with the data presented in the graph above. Having a majority of the townships within our growing area pink and even several reds scattered about, it was easy to see why Minn-Dak had the highest levels of Eminent resistance within the entire Red River Valley during that particular growing season (yellow bars on graph).



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## Eminent Resistance Through the Years...

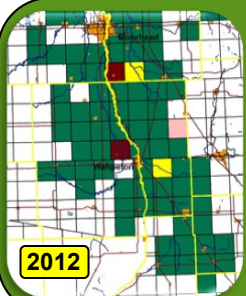


In response to the escalating levels of resistance, Minn-Dak initiated the "T-N-T" (Tins No Triazoles) CLS program that very same year. The idea behind this unique program was that the absence of Triazoles from a fungicide program would allow the disease population to "shift" back to sensitive levels and help these particular fungicides become even more effective. The program worked like a charm without any loss of in-season CLS control and even better, a sensitivity response could be seen the very next season.

The 2007 sampling revealed that Minn-Dak was the only factory district in the Red River Valley to show a decline to Eminent resistance (red bars on graph). In fact, the reduction was **THREE-FOLD** lower than the resistance levels from the previous year (take note how the 2007 map is predominantly gray and green).

Unfortunately over the last several years, fungicide resistance to the Triazole class of fungicides (Eminent, Inspire, Proline, etc.) has once again been slowly building itself up to a level where there is reason for concern and immediate action needs to be taken (take note of the 2012 resistance map). This year's late crop (and later anticipated Cercospora outbreak) provides us with another unique opportunity to effectively head off this fungicide resistance. As such, the 2013 Cercospora program will be very similar to what we did in 2006 - a "T-N-T" (Tins No Triazoles) program. If history repeats itself (and we fully expect it to), we should be able to make a dramatic impact on the CLS population by not using any of the Triazoles and effectively lower our levels of resistance without sacrificing any in-season disease control. All it takes is your participation...

**Should I Be Worried About Headline Resistance???**



Even though it's small, it is still very easy to pick out the problem spots on this Headline Resistance map. Although resistance to Headline is something that is relatively new to Minn-Dak Growers, **it is incredibly serious**. Instead developing a "tolerance" to the fungicide over several growing seasons, these CLS populations have mutated themselves making Headline applications like a light switch – they either work or they don't. Last year's CLS sampling revealed 4 fields within the Minn-Dak growing area where this mutation was present. If your 2013 beets are planted near one of these four fields, your Agriculturist will be in contact with you to implement a "customized" CLS program to help stop this mutation from spreading.

## 2013 Minn-Dak Cercospora Leafspot Fungicide Program

Spray Program	First Application	Second Application	Third Application
<b>Two-Spray</b>	TPTH + Benzimidazole	Strobilurin	_____
<b>Three-Spray</b>	TPTH + Benzimidazole	Strobilurin	TPTH



**TPTH:** AgriTin - SuperTin      **Strobilurins:** Headline - Gem

**Benzimidazoles:** Topsin M 4.5L, Topsin M 70 WDG, Topsin M 70WP, Topsin M WSB, Thiophanate Methyl 85 WDG, T-Methyl 70W WSB, T-Methyl E-AG 4.5 F, T-Methyl E-AG 70 WSB

*Your Agriculturist is the best source for information regarding CLS - keep in close contact with them for appropriate rates & application intervals*

**Volunteer Roundup Ready Canola**

Volunteer Roundup Ready Canola has finally poked through the leaf canopy and can now be observed in many sugarbeet fields. This troublesome "weed" was likely introduced into these fields as a contaminant in the applied dry fertilizer, cover crop or in many cases, simply by dropping off passing railcars for fields located alongside railroad tracks. Any control method to stop seed production is incredibly important and since most of the canola plants are currently in their late reproductive stage, this makes immediate removal necessary. Unfortunately, at its current growth stage, there are not any herbicide options available for control in Roundup Ready sugarbeet, leaving hand-removal as the only option currently available. If seeds are produced, volunteer Roundup Ready canola can and will become much more frequent and certainly has the potential plague the field for years to come.



Thanks to Dr. Allan Cattanaach & Kathy Wang (ACSC) for the preparation and use of the CLS Resistance Maps in this issue