



## Southwest MN IPM STUFF

*All the pestilence that's fit to print*

IPM STUFF 2018-8

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This newsletter and the advice herein are free. You usually get what you pay for.

### **Crop weather**

Rainfall, air and soil temperatures, degree-days, soil moistures, and other current and historical weather data for the University of Minnesota Southwest Research and Outreach Center (SWROC), a little spot about two miles west of Lamberton, MN, can be found at <http://swroc.cfans.umn.edu/weather>.

As of July 23, the 2018 weather remains much warmer and wetter than average. 2018 Rainfall from May 1 was 18.00 inches compared to a 10.31 average. Degree-day accumulations are 1609 compared to a 1385 long-term average or about 8 days ahead of normal.

A narrow, but nasty, band of hail passed through the vicinity of Sanborn, Comfrey, and Darfur late in the afternoon on July 25th.

Most corn has tasseled and pollination progress varies greatly by hybrid and planting date. Some plantings delayed by wet fields and replants lag behind.

Most soybeans are now at R3 to R4. Vegetative growth on the main stem may have ended with some early planted, short season varieties.

Small grain harvest is now underway in southern MN.

The cool weather in the forecast will be good for corn pollination. It might slightly slow down soybean aphid increase by a small amount, but generally looks favorable for the aphids. The cool temperatures will be favorable to white mold.

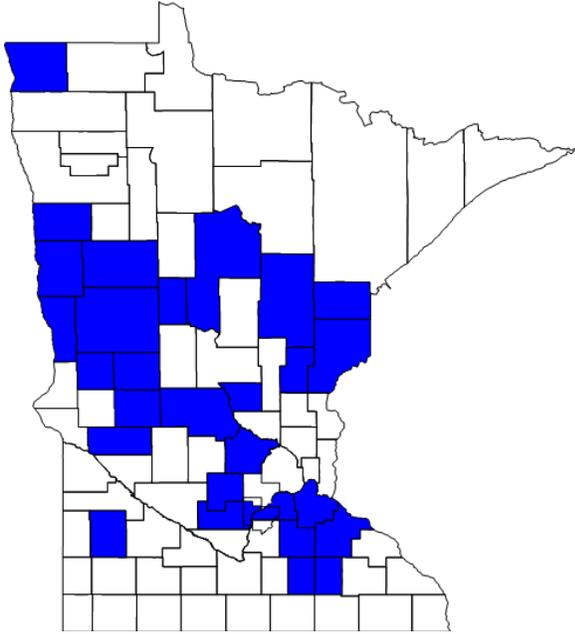


Figure 1. Counties where at least one field with economic armyworm populations have been reported. Thanks to those who volunteered information.

## True armyworm

Infestations have wound down as the larvae pupate. For the most part, only scattered fields had economic infestations. However, economic threshold based insecticide applications and damaged corn, small grains, grass hay and pasture ground covered a wide geography in Minnesota (Figure 1).

*If you know of an armyworm infestation that is not on the map, I'd appreciate hearing about it.*

*There is a piece of information from damaged corn fields that would be very useful for future armyworm scouting and control recommendations: Was a Bt trait present in the damaged hybrid and if so, which one(s)?*

## Some things to consider right about now

### ALFALFA

- Scout for potato leafhopper and plant bugs
- Alfalfa caterpillars and adults are common in C and WC MN. Ten or more caterpillars/sweep is a workable action threshold. Cutting works too.

### CORN

- Scout 2<sup>nd</sup> generation borer
- Rootworm scouting, whole plant counts or yellow sticky traps. Egg-laying is occurring now.
- Scout corn for fungal diseases one last time. Evaluate again at end of season.

### Physoderma brown spot

This disease, caused by the fungus *Physoderma maydis*, may not be familiar to many Minnesota agriculturalists. It is much more prevalent in some areas of southern Minnesota than we normally see; presumably because of the warm, wet early growing season and previous history of more susceptible hybrids.

*Physoderma* belongs to a group of odd fungi that have swimming zoospores. In water within the corn whorl, these spores can swim to and infect the meristem.

Bands of small yellow spots across the leaf and purple or brown lesions on the midrib are distinctive foliar symptoms. The most problematic issue with this disease is the nodal rot that can occur on lower nodes. Symptoms of this node rot are also distinctive, infections producing a dark ring on one of the lower nodes where the affected stalks can snap.

Fungicides have not produced consistent benefits. Fields where foliar or nodal stalk rot symptoms are noted should be scheduled for early harvest.

We have included a known susceptible hybrid in corn fungicide/sentinel studies at multiple locations. This disease will also receive priority when we survey ECB early this fall. In the meantime, please let Dean Malvick or me know if you have observed this disease this year. County level location information is sufficient. The corn hybrid would be helpful information.



Figure 2. Foliar symptoms of *Physoderma* brown spot. Martin County 2018.



Figure 3. Node rot and lower stalk breakage caused by *Physoderma*.

## Corn blotch leaf miner

Have you been noticing numerous small black flies in corn? 2018 continues to be a very *good year for corn blotch leaf miners*. Another generation of adults has emerged. The flies are now abundant and laying eggs.

Larval tunneling (mines) in leaves is greatest on the lower leaves where any impact on photosynthesis would be minimal. Control of the larvae inside leaves would be difficult and in any event not likely to provide economic benefit.

The presence of leaf mines produced by the larvae and the small elongate scars produced by adults does, however, make it hard to identify any disease issues on lower leaves

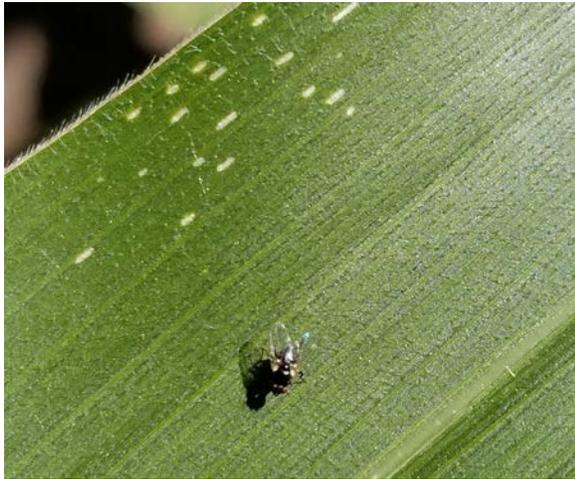


Figure 4. Corn blotch leaf miner fly and scarring on corn leaf



Figure 5. Corn blotch leaf miner flies on leaf with larval mines. The mines can be confused with some diseases but are unlikely to be economic.

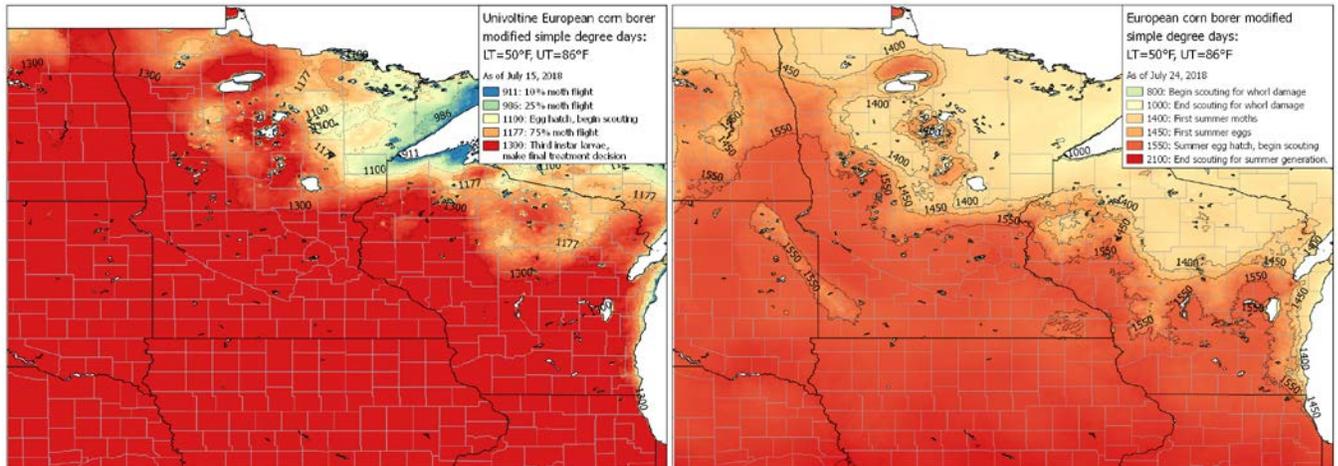


Figure 6. Predicted degree-day development maps for Univoltine (left) and 2<sup>nd</sup> generation multivoltine European corn borer (right) biotypes.

## European corn borer

The greater than normal degree-day accumulations means that corn borer development is ahead of schedule (Fig. 6).

In much of the corn growing region of Minnesota, univoltine biotype borers are predicted to be 3<sup>rd</sup> instar and will be tunneled into stalks in much of MN.

Scouting for the 2<sup>nd</sup> generation of multivoltine corn borer should be happening now.

This scouting can be combined with early disease evaluation, scouting for corn rootworm or other activities involving large doses of corn pollen.

Multivoltine and univoltine corn borer degree-day models are available to help you're your scouting efforts at: <https://www.vegedge.umn.edu/mnndd>.

### Grain aphids

As small grains and other grasses mature, **bird cherry-oat aphids** and **English grain aphids** have started to colonize corn. It has been hard to document yield losses or benefits from insecticide control of aphids in post pollination corn. For more information, see: <https://extension.umn.edu/corn-pest-management/aphids-corn-post-pollination>

## SOYBEAN

- Evaluate fields for fungal diseases
- Note potential areas with SCN damage
- Scout for aphids and defoliating insects

Initial infections of **Sclerotinia white mold** have been observed in both dry beans and soybeans. The current and upcoming cool weather could favor the disease.

Plants with symptoms of **stem canker** are associated with causing soybean death in some Redwood County fields (Fig. 8). Small circular areas in the fields are affected (Fig. 7).

Additionally, some of the plants killed early in the season are showing fruiting structures on the stem similar to **pod and stem blight**. It is somewhat unusual for these diseases to cause soybean mortality this early in the season. Samples have been submitted to the U of M Plant Disease Clinic <https://pdc.umn.edu/>.



Figure 7. Circular area associated with stem canker symptoms



Figure 8. Lesions above green tissue are on symptom of stem canker.

## Soybean aphid watch 2018

Soybean aphid populations, including economic infestations (80% or more plants with aphids, average of 250 aphids/plant, and increasing populations), have been observed over a wider area of Minnesota over the past week.



**It's that time of year! Winged aphids make long - distance cross county trips. Any field that is suitable can be colonized. As the season progresses, the aphid's focus, will be on less mature soybeans; your scouting focus should change too.**

geographically. Within an area differences by planting date and other factors can be observed. Where migrants have recently colonized, numbers among and within fields are fairly uniform. In the relatively few fields I have been in, those that were devoid of aphids earlier have few predators or parasitoids. This temporary lack of biological control combined with migrating aphids, dry weather and moderate temperatures could change populations quickly.

*As soybeans open the last leaves and flowers on the main stem and increasingly place resources into filling seed, aphid colonies often respond to this physiological change by producing a large number of migrant winged aphids. This has started in some fields and will continue for the next couple of weeks. These winged aphids can move long distances.*

Field populations can increase rapidly if colonized by a large flight. For example, at the SWROC less than 5 % of the plants had aphids on July 18. This had increased to 80% or more plants by July 23.

Aphid populations are very spotty



**And now for something completely different.**

Brad Muller came upon thousands of these parasol-like mushrooms in a SW MN soybean field.

They appear to be one of the **pleated inky cap fungi**.

They are not harmful to crops but darn cool for a mushroom. Just the right size to keep a leprechaun out of the sun and rain.

Happy trails,

Bruce

**Pleated inky cap photo by Brad Muller.**

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