



Southwest MN IPM STUFF

All the pestilence that's fit to print

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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 Lambert, MN, can be found at <http://swroc.cfans.umn.edu/weather>.

We have received 1429 degree-days (base 50°F) and 15.0 inches of rainfall May 1-July 22. An additional 105 degree-days (base 50°F) accumulated from April 11-30. Above average degree-day and precipitation accumulations continue.

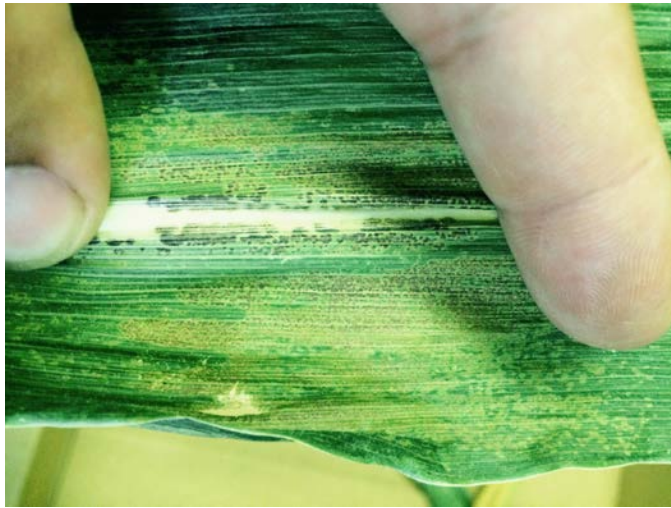
This is more than 5-inches of precipitation and 100 degree-days above long-term average!

Waterhemp can be told from **Palmer amaranth** by folding the leaf where the blade and petiole meet. If the petiole is longer than the leaf blade, it just might be Palmer amaranth.

Corn

Fields have tasseled and pollination is nearly complete in some fields and looks to be successful in spite of the heat. Because of rainfall, there will be some variable yield maps this fall. However, there are some areas of SW and WC MN with great yield potential at this time.

I have been in few SW MN corn fields and have been having a hard time finding **Northern corn leaf blight (NCLB)** or **gray leaf spot**, even on susceptible hybrids. Some eyespot lesions and common rust pustules are developing but these are not as great a concern for yield. Yet, there are reports of NCLB, so it will pay to assess risk by individual fields. On the other hand, tunnels from the corn blotch leaf miner larva are common.



Symptoms of *Physoderma* brown spot. Note the dark blotches on the leaf mid rib and band of small spots across the leaf. Photo: Cory Sinn

Cory Sinn sent photos of what appears to be *Physoderma* brown spot. The fungus causes a pattern of banded spot on leaves and black or purple blotches on the mid rib. There can be a nodal stalk rot phase to the disease.

There has been some concern caused by this disease in 2015 but historically it has been considered a minor pathogen.

For images and descriptions of some corn leaf diseases

see: <http://www.extension.umn.edu/agriculture/crop-diseases/corn/>.

Soybean



Bacterial blight (and hail damage). As the disease progresses, angular lesions will merge and can drop from the leaf leaving a shredded appearance.

Most soybeans are now at R3 (beginning pod) stage with some early planted, shorter-maturity varieties at or near R5 (beginning seed). Recently, warm, wet weather has favored vegetative growth.

There are expanding yellow areas in and around areas where water stood. While there may now be disease on some of the survivors, drowning was the catalyst.

Bacterial blight is the main, usually only, soybean foliar disease visible now. It cannot be controlled with fungicides.

Soybean aphid watch 2016

Thankfully, populations are slower to develop than in 2015. Populations between and within soybean fields are much less uniform this season. Another positive note is that there are not yet any areas with high aphid populations. I know of a handful of fields at or near the 250/plant threshold but they are few and far between.

That could change as aphids sightings have increased over the past week...possibly because folks were spending more time looking. Aphid populations can increase rapidly during the R3 and R4 soybean growth stages.

Particularly with the recent heat, be sure to check for aphids in the lower canopy, not just on the new growth. I would initially spend some time scouting areas that traditionally have early aphid populations and on earlier planted fields.

Soon, winged aphids will prefer the later planted or later maturing fields. Once most of the plants in a field have been colonized or there are numerous aphid "hot spots", aphids/plant numbers can increase quickly. To be conservative, use an aphid population doubling time of 2 days to estimate how fast populations will grow and to help determine scouting frequency. When winged aphids are abundant, fields can be infested and reach threshold fairly quickly.



Mummies of aphids parasitized by wasps, aphids killed by aphid midges, predator poop and aphid nymphs with wing pads. This aphid colony has decided to leave while it still can.



Clover root mealybugs on a soybean root. Note the white waxy coating.

However, don't be too quick to treat populations where most nymphs have wing pads or where predators or mummies from parasitic wasps are abundant. Some infestations this summer have collapsed when winged aphids left the field.

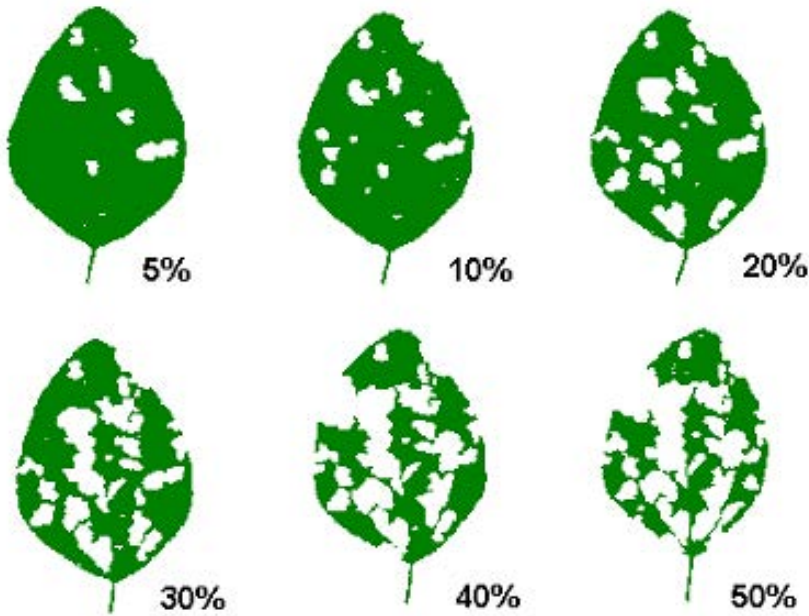
In SW and WC MN, we typically see a large movement of winged aphids as soybeans' terminal vegetative growth stops. This usually occurs the last week of July, or about a week before Farmfest and the Sturgis motorcycle rally. Like the aphids, Sturgis is later this year.

Just for the sake of being redundant... more information on aphid scouting can be found at: [Soybean aphid scouting](#).

Entomologists channel Jack Webb - a discussion on aphid management economics can be found at: [Just the facts](#)

While looking for cysts in a long term soybean cyst nematode experiment, we found aphids on plants showing potassium deficiency. On the roots, we noticed large numerous clover root mealybugs. Mealybugs are related to aphids and produce

honeydew. Ants were tending the aphid colonies above ground and the mealybugs below for honeydew.



Soybean defoliators

have been relatively rare this year. While present, green cloverworm are not nearly as abundant as in 2015.

Include upper, mid and lower canopy leaves in your assessment.

[Generic insect defoliation guide for soybean.](#)

20% defoliation with an active insect infestation still present is a widely accepted action/treatment threshold for reproductive stage soybeans.

With a bit of practice, you may learn to identify some soybean insects but the type of feeding damage they produce. These are some of the species we are seeing in SW MN soybeans now.



The long, slender larva of a forage looper or a clover looper. This species has two less pairs of prolegs than most caterpillars; causing a "looping" gait when crawling.

Feeding injury consists of irregular holes in soybean leaves similar to green cloverworm. Ragweed is one of the hosts for the forage looper. It is not a significant pest of soybean. The moth is sometimes mistaken for European corn borer but is much larger.



The adult red-headed flea beetle feed on the foliage of a range of plants including corn and soybean. The larvae feed on roots.

This insect is common but does not typically cause yield loss in soybean. Adult feeding consists of groups of small irregular holes leaving most of the veins intact.



Japanese beetles produce a distinctive feeding injury pattern on soybean.

Fortunately, for now, Japanese beetle are rare in western MN. These were observed in Dakota County. The white tufts along the abdomen helps separate these from a native species.



An early instar green cloverworm larva. This species has only 4 pairs of abdominal prolegs compared to the 5 pairs typical of most Lepidoptera. It wriggles violently when disturbed. Green cloverworm migrate into MN each year.

Feeding damage is irregular holes, leaving major veins, usually on newest growth.

Alfalfa

While visiting a soybean field with Nick Pieske, I noticed insect damage on a few of the



Comma shaped tunnels caused by the larva of alfalfa blotch leafminer.
Feeding leaves the upper and lower leaf epidermis intact.

nearby alfalfa leaves. These were the mines of the alfalfa blotch leaf miner maggot.

Economic damage by alfalfa blotch leaf miner is rare.

This is a related, but different species than the corn blotch leaf miner that is so abundant in SW MN corn this year.

Happy trails,

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