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 a little spot about two miles west of Lamberton, MN can be found at the University of Minnesota Southwest Research and Outreach Center (SWROC) website: http://swroc.cfans.umn.edu/WeatherInformation/index.htm.

The SWROC location accumulated 1105 Growing Degree Days (base 50°F) from May 1 through July compared to 1169 historic average for the period (about 3 days behind average). For those of you that planted earlier, 29 GDD were accumulated from April 15 to May 1.

We received only 0.02 inches of rain over the week of July 7-13. There has been 11.90 total inches of rain since May 1, still well above the long-term average.

Some crop stages and notes for earliest planted/emerged crops in the SWROC area are:

Corn
Tassel - early silk for early to moderate maturity hybrids.
Recently, there is a lot of information circulating on impending leaf disease disasters and the need for fungicides in corn.

We caught the first European corn borer moth for 2015 in the SWROC light trap. This is probably an adult for the Univoltine (single generation) strain of corn borer. Not expecting any widespread problems from this biotype of corn borer.

We are beginning to see adult northern and western corn rootworms emerging.
Damage is present on some plots without a below ground rootworm trait at the SWROC.

Leaf disease remains at very low levels, at least in the corn I have looked at.
Soybean

*Up to R3 for very early planted*

Bacterial blight and *Rhizoctonia* root rot are the most common diseases present in SW Minnesota now.

**Green cloverworm, grasshopper nymphs and red-headed flea beetles** are the most common defoliators in the same area. I am not aware of any yield limiting populations as of yet.

**Pest alert - Two-spotted Spider Mites in soybeans**

*Bruce Potter, Bob Koch and Ken Ostlie*

In spite of the abundant rainfall and the relatively mild temperatures, some Minnesota soybean fields have populations of two-spotted spider mites (TSSM) at or near economic damaging levels and mites can be found at lower levels in others.

TSSM infestations have been observed in several counties. In Sibley County, problem fields were soybeans planted into alfalfa. It makes sense that these fields would have higher TSSM populations because the mites winter on perennial plants.

TSSM problems are typically associated with drought. What is unusual, and causing concern and some confusion are the high TSSM populations in an area of abundant rainfall and without a period of prolonged hot, dry weather.

A Brown County soybean field was observed with disturbingly abundant TSSM. The mites and their damage had already progressed to the tops of the plants in small pockets in the field.

As is typical, the field border was more heavily infested but the mites had been present for some time, most likely before the adjacent road ditch was mowed. We also received a report of a TSSM infestation in a Carver County soybean field. Both of these areas have had above average rainfall.

*Photo: Wayne Maiers, Hutchison Coop - Arlington Location.*

*An upper soybean leaf with injury (stippling) caused by two spotted spider mite feeding. The small yellow stipple,s are where mite feeding has destroyed leaf cells. The black spots are dead soybean aphids and frass (feces) from predatory insects. Mites and silk webbing are present on the underside of leaves.*
How can we have a spider mite infestation in soybeans without drought stress?

- It could be related to impaired root systems from root disease and/or SCN leading to poor water uptake, even though soil moisture is good. *Rhizoctonia root rot* and SCN were both obvious in the Brown County field.

- **Neozygotes**, a fungus that normally controls mites when weather is cool and wet, was apparently not effective in these fields. Insecticide and fungicide applications can remove the beneficial arthropods and fungi that typically keep TSSM populations low.

- Some entomologists suspect that seed and foliar applications of pesticides containing neonicitinoid insecticides (look for thiamethoxam, imidacloprid or clothianidin on the label) can increase the probability of spider mite problems.

*If you applied a seed insecticide, foliar insecticide or foliar fungicide to a soybean field earlier this year, you might want to check to see if you unintentionally created another problem.*

Dimethoate, chlorpyrifos, bifenthrin and products containing these insecticides are labeled for TSSM control in soybean. When TSSM are present in a field, be careful with any insecticide applications for soybean aphid. The pyrethroid insecticide bifenthrin (e.g. Brigade, Hero, Tundra) is labeled for two-spotted spider mite control. However, other pyrethroid insecticides are not very effective on mites, and some pyrethroid insecticides can actually increase TSSM reproductive rates.

If you treat a field for spider mites or insects, make sure you evaluate control 5-7 days later. The hatching of two-spotted spider mite eggs and any immatures or adult mites surviving poor spray coverage can rapidly re-infest a field.

Resistance to pesticides is always a concern with mites. A chlorpyrifos (e.g. Lorsban) resistant mite population was documented in Redwood County in 2012. It is not known how widespread this resistance is, or even if it is still present in Minnesota mite populations. TSSM populations resistant to chlorpyrifos and/or to bifenthrin are known to occur in other parts of the country. Currently, we do not recommend tank-mixes of insecticides for TSSM control in MN. The use of tank mixes of chlorpyrifos and bifenthrin insecticides is best reserved until mite populations cannot be controlled with the individual products.

Include TSSM in your scouting efforts. Managing two-spotted spider mites in soybeans gives additional details on spider mites and will be updated in the near future.

At this time, there are relatively few reports of TSSM. We do not yet know the extent of this year's problem. However, it surprising that we have any reports of significant mite infestations given this year's weather patterns. If the weather turns hot and dry, we could be fighting TSSM problems for the next two months. *Treat the soybean pest problems you know you have and can be effectively controlled. Insurance pesticide applications, in the form of insecticides (of any kind) or foliar fungicides, are probably not the best idea in fields with spider mite populations.*
Spider mites populations are present at low levels in most, if not all, soybean fields every year. Adding a "just in case", low rate of chlorpyrifos or other product with TSSM activity to a tank mix of insecticide(s) with poor performance on TSSM is a recipe for pesticide resistance problems. Instead of "fixing" any gaps in insecticide performance, you may end up fixing pesticide resistance in your TSSM population...a very bad thing.

**Soybean aphid**
Soybean aphid populations are highly variable throughout Minnesota. I would pay close attention to fields that tend to have early economic threshold populations of aphids. If you have not already started, begin assessing the aphid populations in your or your clients’ fields in a systematic manner.

A few fields have reached economic threshold. Small field size and buckthorn nearby are common factor for some. An increasing number of fields will likely be reaching economic threshold levels in the near future.

Avoid spraying early. If this continues to shape up as a higher aphid population year, any fields treated now have a high probability of needing re-treatment in a few weeks as aphids re-infest fields.

Unless the hotspots are numerous, avoid treating fields with small areas of infestation now.

Consider aphid predators and mite populations in the field when making an insecticide application decision. Soybeans are now blooming so any using the pollen and nectar are at risk. Using the economic threshold to make treatment decisions will minimize the collateral damage. See [protecting pollinators](#) for further information.

**What is is?**
The answer to last week’s specimens

# 1 Monarch butterfly caterpillar on common milkweed.

There are adult monarchs out now. Some of them seem intent on trying to commit suicide by pickup truck.
#2 Egg mass of the European corn borer. This is what you cue in on for univoltine corn borer scouting.

The ECB is not extinct. Several readers have sent pictures (thanks for those) of shotholing and tunneling of 1st generation. They are relatively rare though.

Happy trails,

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