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.

Lamberton is close to long-term average in growing season degree–day accumulations. Historically, we pick up more than 150 DDs / week this time of year. Base on the most recent forecasts, it looks like we will be experiencing a cooler period. Fortunately, time is more important than degree-days once corn reaches reproductive stage.
Lamberton is running ahead of long-term average in growing season precipitation.

Want to know when your corn crop will reach physiological maturity? Add 60 days to the date your crop tasseled.

Brown silks indicate your corn crop has moved on to grain fill. Impatient and want to know if and how well your corn has pollinated? Gently peel back the husk and shake the ear. Any silks that remain attached to the ear indicate unfertilized potential kernels.

The crop is looking good in many areas. With cooler weather and moisture, corn pollination has been good. Moisture will continue to be an issue as corn and soybean seed-fill occurs.

Corn ranges tasseling to fully pollinated. The rainfall and cooler weather helped. Most soybeans are R3-4.

**Corn**

**Corn Rootworm**

Based on root damage and beetle observations or sticky traps, some of you have already identified some high-risk fields for 2018. Remember, where northern corn rootworm are abundant species, extended diapause populations need to accounted for two seasons.

As corn pollination progresses, female western corn rootworm beetles may move to later pollinating corn fields or areas within corn fields (replants, hail damaged) to feed and lay eggs. Northern corn rootworms may feed on pollinating plants (giant ragweed, waterhemp, etc.), returning to corn to lay eggs.

In Minnesota, both rootworm species lay eggs in corn, not other crops. Rootworms will lay eggs near volunteer corn within soybean fields.

Later emerging European corn borer univoltine biotype moths and the 2nd generation of multi-voltine biotype will prefer later silking corn fields to lay eggs.

Grain aphids began moving into corn fields as small grains matured. English grain aphids are present in some upper canopy leaves, and I have seen a few colonies of bird cherry-oat aphids in the lower canopy.

Whether we see any fields with explosive population increases will depend on weather and other environmental factors.
After pollination, aphids in corn are low priority targets and yield responses to insecticide applications are elusive.

**Bacterial leaf streak of corn**

If you observe this disease you can help us try to understand the distribution and factors influencing this disease in Minnesota. Dean Malvick (dmalvick@umn.edu). Dean’s lab will confirm the presence of bacterial streak.

U of M Plant Disease [U of M Plant Disease Clinic sample submission instructions and forms](https://www.umn.edu/pdc) can be used when you submit samples. Including the following information will be helpful in understanding the epidemiology. Hybrid information will be helpful in understanding if there is a genetic component to infection. Location information will be used to generate maps but field specific information will not be published.

Location
County & GPS Coordinates

Disease information

Hybrid(s) affected (if known)

Describe incidence (% of plants with symptoms/field wide or localized)

Describe severity of symptoms (percent of corn leaf area affected/individual leaves or most of the plant)

Any weather events that may have infected disease (hail, high wind flooding)

**Soybean**

Soybeans are more susceptible to stresses during the pod set and seed fill stages. However, they are resilient and can still make up for reduced stand by increased branching and pod number until vegetative growth ceases. They can respond to favorable growing conditions with increased seed size until maturity.

**White mold** symptoms are present in some areas. Above-ground **SDS** symptoms will start to be visible. **Brown stem rot**, while already present within the plant, will not show symptoms until full seed.

**Watch for SCN symptoms**

Pay attention to areas in your soybean fields that have reduced canopy development (uneven height and reduced row closure). Areas of the field that show iron deficiency chlorosis (IDC) symptoms may indeed have problems with iron absorption but SCN may be also involved and mid–late season yellowing of upper leaves may indicate SCN. Top dieback (Diaporthae) can also cause yellowing and premature death of upper nodes.
Root rots, iron and nitrogen deficiency, SDS, and top die back are often associated with SCN.

**Soybean aphid watch**

Historically, during the first week of August, southern Minnesota sees migrations of agriculturalists to Farmfest, bikers on the way to the Sturgis Motorcycle Rally, and a mass dispersal of soybean aphids from late R4 (full pod)/early R5 (beginning seed) stage soybean plants. For a description of soybean growth stages see [soybean growth-and-development/growth-stages](#).

As soybeans near the end of vegetative growth (flower cluster opens at the top of the plant), many aphid populations produce large numbers of wing aphids. These may disperse locally or move long distances. Some populations may collapse as most nymphs develop wings and leave. If you observe wing pads on most nymphs, you might wait a day or two to see if the population declines. Later planted soybeans and fuller season soybeans may see this dispersal occur later than early-planted.

After an emigration event, sometimes populations rebuild during R5 and R6, sometimes they do not.

Provided the insecticide applications are effective, fields treated after the first week of August are less likely to be recolonized and need retreatment, but there are exceptions.

As August progresses and soybeans age, the fields with later planted or fuller season soybeans are now more attractive to winged colonizers. Soybeans after peas and replanted, IDC, or hail injured areas in fields are targeted by winged aphids. These scenarios should be targeted by scouting efforts too.

Treatment of economic threshold populations are now being made in more southerly areas and the general trend is trend is economic threshold populations developing from north to south. Parts of Central Minnesota are receiving insecticide applications and sentinel plots at Morris had a fairly uniform 40 aphids/plant early last week. Some fields in parts of the Minnesota River Valley are at economic threshold now.
As of last week, there were many areas of MN, including most of the SWROC, that still had low aphid populations. Winged aphids can change that quickly.

The next two weeks will be the critical scouting window for most areas. Remember that most aphids will often be found lower in the canopy now.

This year, much of SW Minnesota appears to have been colonized by non-local aphids. After reports of poor pyrethroid insecticide in the Northwest and recently Central MN this year, I am suspicious that any MN aphid population might harbor a significant percentage of resistant individuals. Insecticides containing only a pyrethroid may not perform well. More details on dealing with resistant aphid populations will follow.

I appreciate the updates on aphids and other pest populations! Information on aphid populations and how well controls are working is critical this year as we deal with aphid populations resistant to insecticide.

You are responsible for managing your crop for a profit. There is nothing illegal about applying an insecticide labeled for soybean when aphid populations are below threshold. However, insecticide applications do have consequences in the environment. I wish only to point out that there are potential short and long term risks when insecticide applications are made without regard to pest populations. With respect to business profitability, farming is usually an individual effort. With respect to insecticide resistance, like it or not, farming becomes a team sport.

**Pest Management Field Day at the Southwest Research and Outreach Center August 9**

We have a Pest Management Field Day planned for August 9th from 9:30 AM to 12:30 PM. The event will cover soybean aphid management and aphid resistant varieties, soybean agronomics and SCN, corn insects, and weed management. After the tour stops and a lunch, there will be the opportunity to discuss future research and education needs. This field day is sponsored, in part, by Minnesota Soybean. Pre-register online here to help us plan for lunch.

Happy trails,

Bruce

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