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.

Aphids in corn
As agriculturalists re-enter corn fields to scout corn rootworm beetle populations and begin to estimate yield potential, they often find some unwelcome aphid visitors.

Small, dark-olive bird-cherry oat aphids are usually found lower in the canopy, particularly when populations first establish on corn. These move upward on the plant as populations increase. They are the most abundant species in corn this year.

English grain aphid are found higher in the canopy. Sometimes, colonies of these larger, light-green aphids with long black cornicles are mixed with those of bird-cherry oat aphids and this is common in corn I have looked at this year.

Some years, the blue-green corn leaf aphid can also be found in the
upper part of the canopy but this species seems less common in SW Minnesota than it once was. Even more rarely we may see some greenbug colonies on corn. All these species also feed on small grains and several other grasses and may move to corn as the small grain crop matures.

You may have heard about the sugarcane aphid that has recently caused significant problems on sorghum in southern states. This species has not been found in Minnesota and does not feed on corn or wheat.

Bird-cherry oat and English grain aphids are often more abundant where corn is moisture stressed. Those of you who look at hybrid comparisons or walk numerous fields have probably noticed that there are differences in which hybrids are more heavily infested. Sometimes, we see more aphids where fungicides or insecticides were previously applied and the beneficial insects and fungi removed.

Either of these species can become very abundant, covering plants with aphids and honeydew. The honeydew is aphid waste and consists of water and sugars the aphids cannot use. These populations often build rapidly and peak in R3 or milk stage corn. Even more quickly, populations can collapse very quickly from predators and fungal disease epidemics. Aphids can, and often do, leave corn as it begins to mature to dough stage. If subsequent rainfall washes off the sooty mold, honeydew, and cast skins, the only evidence of the infestation may be small discolored areas on leaf sheathes and shanks.

It is difficult to compare aphids and their damage on corn with those on soybeans, small grains and other crops. I am not aware of significant virus diseases of corn that would be transmitted by aphids, particularly this late in the season. Corn biomass is much larger than a soybean plant and the amount and water/nutrient content of the two crop's sap are quite different.

At this time, corn has already pollinated and pollinated well. The published thresholds for aphids on corn are based on whorl and pre-pollination corn growth stage populations of corn leaf aphids, not the late-milk stage bird-cherry oat and English grain aphid populations we have been finding in Minnesota the past few years.

Chances for a payback for insecticide applications in blister to dough stage corn are less likely because of insecticide coverage issues for aphids lower in the canopy that can quickly reinfest treated foliage. Many 2015 fields are taller than typical, increasing the coverage problem. Secondly, very high aphid populations may, in part, be a symptom rather than cause of crop stress. Aphid populations may be responding to changes in nutrient quality of corn sap. These heavily infested areas often show stalk rot later in the season another possible connection with hybrid differences. This year's tall plants with high kernel counts are more likely to undergo
stress if rainfall gets bit short. Finally, insecticide applications can make aphid populations worse by killing beneficial insects and they can flare spider mites or other secondary pests.

There are not many good data sets on these late-season infestations but most of I have visited with have not seen a yield response for treating these. However, if you feel an uncontrollable urge to kill some corn aphids or just want to experiment, there are several products that are labeled. Leave wide enough check strips to account for spray drift and leave multiple check strips to account for spatial differences in corn yield potential and aphid populations.

I would suggest that you chose fields to experiment on where:

- Corn has not started to dent.
- The field is generally infested with a high percentage of plants having aphids. Fields infested only in borders of or pockets in the field are hard to draw conclusions from.
- If aphid populations are very heavy above the ear leaf and there is a potential for photosynthesis-blocking sooty mold development on honeydew covered upper leaves
- Predators and wasp parasitoids(lady beetles, Syrphid flies, parasitized mummies, and etc.) and signs of fungal disease are not abundant. How's that for a generality? Once established, predators and disease can remove large numbers of aphids without your help and may trigger aphids to move.
- Winged aphids or nymphs with wing pads are not easily found. If present, the population may be ready to leave the field.
- The plants are not already covered with sooty mold or showing signs of stress. Any yield loss has already happened.

There are no guarantees on return. Most often doesn't because heavy infestations are discovered late and the aphids were ready to leave anyhow or damage had occurred. My inclination is to leave these late season populations alone. Walk away from dented corn where a large portion of yield is already fixed- the aphids usually do.

**Soybean aphid**

Aphid treatment has expanded into more areas. Soybean aphid control with insecticides(and any insecticide) begins with good application technique. Some have a problem with using enough water, being overly optimistic of the width of their spray boom/spary swath and adding enough insecticide. Soybean aphid populations have been much higher this year than the past several. Sloppy applications could well show up as stunted black strips in your soybean field. If you are spraying to kill a potentially economically damaging population of aphids, do it right.

Based on observations in this year's experiments, I would encourage using high rates if using pyrethroids. Avoid using low rates of insecticides in tank mixes. Some fields will need to be retreated. Do not use the same insecticide class retreating a field. If you not already seen this, and readers of this newsletter should have, this MN Crop News article, [http://blog-crop-news.extension.umn.edu/2015/08/what-to-consider-when-treating-soybean.html](http://blog-crop-news.extension.umn.edu/2015/08/what-to-consider-when-treating-soybean.html), provides more information.
Wet, cool weather could trigger fungal disease outbreaks and after next week, cool temps and maturing soybeans could begin the move of aphids to buckthorn.

**Soybean cyst nematode (SCN)**

The yellow spots showing up in many soybeans over the past two weeks are symptoms of SCN infestations, possibly associated with *Diaporthae* and *Phomopsis* fungal diseases. Recent heavy rains in some areas should increases the chances of *sudden death syndrome* (SDS) foiliar symptoms. I would be noting which varieties have the most issues.

**Save the date:**

There will be an SCN plot tour at the SWROC, Lamberton, Wednesday September 9. It will be a good opportunity to see SCN research on varieties and chemical control of SCN and visit with U of M researchers.

Happy trails,

Bruce Potter

University of Minnesota Southwest Research and Outreach Center  
23669 130th Street  
Lamberton, MN 56152  
Phone: 507.752.5066  
Cell: 507.276.1184  
Fax: 507.752.5097  
E-mail: bpotter@umn.edu  
[swroc.cfans.umn.edu/ResearchandOutreach/PestManagement/index.htm](http://swroc.cfans.umn.edu/ResearchandOutreach/PestManagement/index.htm)  
Facebook: [https://www.facebook.com/swroc](https://www.facebook.com/swroc)  
Twitter: [https://twitter.com/SWMNpest](https://twitter.com/SWMNpest)

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