If you would like to be added to this mailing list, send a request to Molly Werner at wern022@umn.edu. This newsletter and the advice herein are free. You usually get what you pay for.

**Crop Weather**

Rainfall, temperatures, degree-days and other current and historical weather data for a 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](http://swroc.cfans.umn.edu/WeatherInformation/index.htm).

As of June 8th, we were at 990 degree days (Base 50/86 °F). We picked up 174 degree-days and no precipitation the week of July 2-8. The crop responded with rapid growth and development.

Flowering of wheat and oats is now completed.

Soybean bloom is underway. Iron chlorosis symptoms increased over the past week and **soybean cyst nematode** females can be seen on roots now. Soybeans are showing evidence of compaction in some fields. Wheel tracks and the location of spring tillage sweeps are particularly noticeable in some May 31st - June 5th planted fields.

**Bacterial blight** is prevalent in some soybean fields where pounding rains occurred. The symptomatic brown, angular necrotic spots are surrounded by a yellow halo. The necrotic tissue eventually falls away leaving tattered leaves.

May 14th planted soybeans at the SWROC are at V9/R1.

Heat has lead to moisture stress on corn in coarse textured soils and areas where compacted.
At the SWROC, some seed furrows have re-opened - a definite sign that field conditions were less than fit when planting.

May 3rd Planted corn is at V11.

**Things that go bump in the night**
This morning, the black light trap at the SWROC held two European corn borer moths. Both moths were males which typically begin to emerge first.

We are seeing a few small looper larvae in soybeans (left). They are most likely forage looper larvae or a related species. Our black light trap has been catching the adults in abundance. You have probably seen the moths in grassy areas and field edges.

The larvae are not numerous enough to cause yield loss.

The generic, multiple pest, defoliation based treatment threshold 20% of the plant defoliated from the R1 (beginning bloom) to R6 (full seed) reproductive stages. Yield loss occurs well above this level. Rate green leaflets from the upper, middle and lower canopy to obtain an average for the plant. Other non-insect defoliation, hail for example, would be included in the defoliation estimation provided the insects are still present.

I personally have not seen anything close to 1% whole plant defoliation this year. There is no need to overreact. Soybeans tolerate significant defoliation well but humans do not tolerate observing the damage well. Most agricultural advisors break into a cold sweat upon observing defoliation levels approaching 10%.

**Corn rootworms**
On July 3, I floated a few larvae from a SW Minnesota field that had Bt-RW performance problems in 2012. Minimal feeding injury was observed on a non-traited hybrid. I have talked with several others that had similar observations. Most larvae were 1st instar with a few newly molted 2nd instar. I did not see 3rd instars or pupae. Like most of you, I hope weather factors put a crimp in this year’s corn rootworm populations - there should be some upside to the long winter and wet spring - if crop production was fair. Based on the age class of these larvae, it still appears that the hatch is greatly delayed this year. It is too early to know whether or not there has been any crimping.
**Small grains**

**Barley yellow dwarf virus** is the most prevalent in SWROC wheat, oat and barley plots. Unfortunately, this aphid transmitted virus disease has been a fairly consistent problem in SW Minnesota. **Bacterial streak** is also quite severe on a few spring wheat varieties. **Leaf rust** is present at moderate levels in a susceptible indicator variety.

**Roundup Ready weeds**

Driving by the bronzing foliage of some soybean fields, I am reminded of the mid-1990s. Does this signal devolution in soybean management?

I do not claim to be a weed scientist by training. I am uncomfortable playing a weed scientist on the internet where coincidently I am also a well-known as a male model from France. I do, however, have some rudimentary understanding of pest resistance to management practices so I figure I might as well give my two cents worth. This is where the reader’s delete button may come in handy.

In most cases, Pre-emerge herbicides have worked very well this spring. Unfortunately, spring weather and logistics reduced the number of planned pre-emerge herbicide plans that came to fruition. Coincidence or not, glyphosate tolerant waterhemp sp. seems to be showing up in more fields this year - a disturbing number.

I have visited about this issue with several real weed scientists including herbicide industry reps and Jeff Gunsolus, U of M Extension weed scientist. There seems to be general agreement on several points.

1) A second application of glyphosate should not be expected to control waterhemp where the first application has failed.
2) PPO herbicides (e.g. Flexstar, Cadet, Cobra, etc) are options for rescue treatment.
3) Rescue treatments have a lower success rate than timely planned herbicide applications.
4) Weed size and herbicide carryover concerns limit the herbicide options for waterhemp control in soybean this time of year. For example the corn re-crop restriction for Flexstar GT is 10 months and the maximum water hemp size is 4 inches. Lactofan (Cobra) does not have the long replant restriction, has 6” waterhemp on the label and is another option.
5) Try to maximize the success of the PPO herbicide for rescue treatments after a glyphosate failure.
   a) These are contact herbicides and excellent coverage is critical to kill waterhemp growing points.
   b) Use a **minimum** of 15 gallons/acre and 40 PSI. 20 gallons or more is better.
   c) Flat fans will perform better much better than AI nozzles. Select adjuvants to optimize performance.
   d) Adjuvant details vary slightly by product but in general Crop oil concentrate (COC)/ methylated seed oil (MSO) plus ammonium sulfate (AMS) are good,
high surfactant loads not so much.

*Always, read the herbicide label.*

Points 5 a-d may be part of our problem. The best application methods for glyphosate are not the same as for contact herbicides. I suspect that many post-emerge PPO herbicides have been expected to perform with application methods optimized for glyphosate. So have insecticides and fungicides.

The good news... The soybean plants are still small and will grow additional leaves. Defoliating the canopy near or at flowering can have benefits, potential white mold reduction in lactofen treated fields for example.

The bad news: A well –seasoned agronomist reported little control of small waterhemp with Flexstar GT and I have heard a couple reports of waterhemp coming through both Valor and Flexstar herbicides. These need further investigation.

And then there is giant ragweed and...

More information will be soon forthcoming from weed scientists in the near future. In the meantime, in my humble opinion weed resistance could be a serious and devastating production constraint to soybeans across all production systems. There is probably not an easy fix but GPS and auto steer now provide the ability to run a row crop cultivator and work a smart phone at the same time.

**Soybean aphid**

I don’t know what; if any, long-term effect burning soybean leaves with PPO herbicides will have on soybean aphids.

Soybean aphids have been showing up and/or populations building in some of the fields I've checked. Ian MacRae reported finding soybean aphids on the Northwest research and Outreach Center, Crookston, MN recently. Steve Sodeman and Corey Sinn reported aphids in a couple of Martin County fields. One was near a lake. We probably have had enough winged aphid movement that a few aphids can now be found in most Minnesota geographies. Increasing aphid populations have been reported from other Midwest states as well.

A couple of pretty good agronomists were investigating a wheel track soybean growth problem in a Brown County field. The consultant and herbicide tech rep observed atypically high soybean aphid populations in a field where an insecticide fungicide seed treatment was used. I did not see this field but reportedly the aphid populations were as high as or higher than in a couple untreated fields Steve Commerford and I had been using as indicator fields. All were approaching threshold. Some things still need to be verified but I figure it is worth a heads up. If these soybeans were indeed treated and the infestation was not a localized hot spot, this may signal the beginning of the end of
scouting seed treated fields later. I hope not. Seed treatment experiments at the SWROC do not yet have enough aphids to make a comparison.

If you have not already done so, check fields that have a history of early soybean aphid populations now.

There might be an odd field or two where the timing of aphid treatment and a glyphosate application might line up this year. Do not compromise your weed control for soybean aphid and vice versa.

I have been in many soybean fields recently where I have not found aphids and I have not heard of any widespread problems in Minnesota yet this spring. However, I do not get into all that many soybean fields and don’t talk regularly to everyone that does look at many fields. Soybean aphid populations are field specific. Base your decisions on the fields you are managing.

Potato leafhoppers are at very high levels in areas of Southwest Minnesota – and likely are high elsewhere as well.

We see some injury to SWROC soybean seedlings where cutting forced leafhoppers out of nearby alfalfa. This injury (leaf puckering and wedge shaped necrotic spots) is probably temporary as new growth looks normal and plants were not stunted.

The leaf pubescence of most soybean varieties makes them less susceptible to potato leafhopper damage. On the other hand, edible beans are susceptible to potato leafhopper.

Reminder
A weed research tour will be held at the SWROC Thursday, July 11 from 3:30 – 5:30 PM. Jeff Gunsolus will be on hand. It will be a good opportunity to discuss weed management issues.

Happy trails,

Bruce Potter

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