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.

At the SWROC, 1141 degree days (Base 50F) have been accumulated from May 1 through July 14, slightly behind the long term average of 1191. The SWROC has received 9.63 of rain over the same period. The rainfall has tapered off recently and drought stress is starting to show up in some areas. Moisture stress, just weird or is it déjà vu?

Corn has started to tassel and early soybeans are at R4, most are R2-3.

Karma and the Art of SCN Management
SCN females are present on root systems now. I have received reports of large numbers of SCN on PI88788 resistant soybeans. Corey Sinn reports seeing more SCN virulence issues in short rotation (corn/soybean) fields in the Martin County area. These short rotation fields are likely to have higher SCN populations and more consistent selection pressure against SCN resistance genes.

Above ground symptoms may not yet be obvious with this generation of SCN but it won’t hurt to look at some roots as you are going through soybean fields. SCN resistance may still slow reproduction and root damage the second half of the season or it may not. Keep an eye on things.
We should not be surprised to find that SCN resistance traits are now struggling. In many Southern Minnesota fields, we have employed a single management tactic for SCN, the use of resistant varieties, for 15 years or more. We may be starting to reap the rewards of this less than integrated approach.

Unfortunately, as SCN resistance fails we are faced with limited options. Few varieties with the Peking or Hartwig (CystX) resistance sources are available. Current crop prices will make extending soybean rotation with extra years of corn financially unfeasible for some growers. Chemical and biological controls to this point have not proven effective. Long-term, integrated management strategies are needed.

There will be an **SCN field tour the afternoon of Monday, August 18 at the Southwest Research and Outreach Center.** U of M Soybean agronomist Dr. Seth Naeve, U of M soybean breeder Dr. Jim Orf, and your humble IPM Specialist will be among those showing SCN research and leading discussions on ways to improve SCN management. If soybean aphid populations are high enough to show any results, we will visit some aphid research as well. Details to follow.

**Corn rootworm - Now we have a mess!**
Keep on rootworm beetle numbers in late pollinating corn later this summer. Waterlogged soils, compaction and replants will lead to uneven tasseling and late pollinating corn. These late silking fields and portions of fields will attract egg-laying beetles from within the field and from other cornfields in the area.

Rootworm management may need to be adjusted in these fields next year if planted back to corn. These effects can persist for the next two years in the case of extended diapause northern corn rootworm.

Why worry? Late pollinating corn is where we have seen problems with Bt-RW, likely due, in part, to extremely high larval populations.

**Soybean aphid**
Oh Boy, it's that time of year again!

Soybean aphids are present in low numbers in some areas of Minnesota. They are getting easier to find at the SWROC in Redwood County and they were not hard to locate at the West Central Research and Outreach Center Summer Station Day weed stop in Stevens County. Aphids have also been observed in research plots in Sherburne County. They are present in Dakota County at the Rosemount Research and Outreach Center. "Frenchy" Bellicout reported finding aphids in Lac Qui Parle County near Dawson. "Deep throat" reports finding aphids in Waseca County and they are present in Nicollet county also.

The reason for listing these diverse locations is not to start the targeting efforts for insecticide applicators nor confuse movement of insecticide between distributors’ warehouses. It is merely a heads up that scouting should begin in earnest. Look at
your indicator fields or smaller fields near wooded areas, lighter textured soils and those lower in potassium are often more heavily infested early in the season. During the first part of the growing season, early planted soybeans are often most heavily infested but this will change to later planted soybeans as the year progresses.

The map shows just how wet it was this spring. Prevented plant through central Minnesota has reduced soybean acreage and as a result soybean aphids available to colonize other areas. I suspect the initial treatments of aphids (if there are any that reach economic threshold) will come from areas with less than 8 inches rainfall above normal.

At this time last year, soybean aphid populations were much more advanced and treatments underway. I am not aware of any 2014 economic infestations but this could change. At the SWROC, small founding colonies (hotspots) are producing winged aphids now. A small 3 or 4 plant hot spot could easily produce thousands of winged females to infest thousands of additional plants in the field. Predators are efficient at finding these hotspots so an economic infestation is not inevitable. With declining commodity prices input costs need to be looked at closely. Overall, aphid populations are smaller and later to increase than most years. This might end up as low aphid year and insecticide costs put to other uses. Insurance insecticide applications are not free of risk and often are re-infested. Beware of claims of miraculous residual control and other bright, shiny objects. Just because someone has a warehouse full of insecticide does not mean it needs to go on your field.

There has been some talk that the soybean aphid threshold should be less than a 250 aphids/plant average when soybean prices are high because the economic injury level (point at which yield loss is greater than the cost of control) would be lower. It is true that crop price is an important component of economic injury levels and economic thresholds. However, while this advice might sound logical on the surface, it ignores one simple principle. Detectable soybean yield loss does not start at one aphid/plant and the economic injury level is well above 250 aphids/plant for a short period.

If you treat at much below 250 aphids, say 100, 50, or even 5 aphids/plant, you would not save any yield and you might end up treating a large percentage of fields where
aphids would never develop into yield threatening problems. Alternatively, as crop prices decline, the threshold cannot go much above 250 aphids per plant or there not be enough time to react before unacceptable yield loss will occur.

If your aphids are smart enough to know what price you are selling your soybeans for, change your management practices because you and your crop advisor have created "aphid geniuses". Instead of looking for a new advisor, consider giving yours a raise if they tell you to stick to the 250 aphid threshold.

Old school weed management
As we ease out of the "glyphosate only" era for corn and soybean weed management, I see evidence of folks learning or re-learning some herbicide principles. One principle is cleaning the tank and boom before spraying another crop. The neighbors tend to notice these mishaps first and will bring them to your attention... out of concern for your farming success of course.

What is new is waterhemp and ragweed. Because of carry-over concerns, post emerge soybean broadleaf herbicide options are Cobra. Drop nozzle applications in corn will now need to wait until Dent in most fields. It's July 18th - Do you know where a row cultivator is?

Other stuff going on out there

Common stalk borers have moved to corn. Randy Rivard sent a photo of a hapless common stalk borer that had burrowed into soybean. This happens occasionally and is likely a no-win situation for both soybean and borer.

Common stalk borer move from grasses as they become too large for the stems. They will take up residence in giant ragweed and move to corn as ragweed is killed by herbicides. Keeping fields and field borders clear of giant ragweed will help with management of this insect.

Crown rust of oats
I mentioned unusual levels of crown rust defoliating buckthorn earlier this spring. There are now unusual amounts of rust on oats and to a lesser extent brome grass. Some late milk-early dough stage plots are nearly 100% defoliated. Unfortunately, the buckthorn has bounced back and is shooting new leaves.

Fusarium head blight and bacterial streak of wheat is present on susceptible varieties.
**Red headed flea beetles** are abundant in some soybeans fields now. These tiny black beetles seldom, if ever, reach economic levels (20% defoliation of the whole plant during flowering).

**Grasshoppers** The hatch continues. Early hatching two-striped and later hatching red-legged and differential nymphs are present at the SWROC. Watch populations in fields where adults were abundant last fall. Compacted field borders and alfalfa fields are preferred sites for egg-laying.

Sun scald and herbicide/adjuvent injury might be confused with soybean foliar diseases.

To avoid needless panic, look at the pattern of symptoms on the leaf. Are only the leaves that would have been present at application affected? Are portions of leaves shaded by other leaves free of symptoms? Later glyphosate applications are causing some unusual upper leaf symptoms at the SWROC this year.

Happy trails,

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