Southwest MN IPM STUFF

All the pestilence that’s fit to print

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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 has had only 2.27 inches of precipitation from January 1 to April 28, 2015. This is less than half the 5.1 inches we receive on average.

Thanks to late season rains in 2014, soil moistures here have been good for germination and early growth. Most soils at the SWROC can hold around 9 inches of moisture when fully recharged. As of April 15th, we were less than 6 inches of available water in the top five feet of soil. This is more than 2012 and 2014. Many areas west and north are drier and SE MN is off to a slower start.

The kids are all right.
The SWROC experienced low air and 2" depth soil temperatures of 22°F and 31°F, respectively on April 23. Emerged small grains and alfalfa and peas came through the event in good shape. Some of these look very good.

I can't address corn survival in fields other than I have checked, but the early planted corn I have looked at seems to have done just fine. I suspect most corn is similar.

Corn planted on April 3 planted at the SWROC started to emerge today.
Figure 2. A planting depth of 1/2" is not enough for good standability later in the season.

(Figure 1). Part of the stand that was accidently planted very shallow is emerged (Figure 2) while the seeds tucked safely at 2 inches is doing well but the shoot is still a ways from the surface. This shallow corn had a very stressful beginning with temperature extremes. Unfortunately, the part of the shallow planted stand that was planted on the surface did not germinate or did germinate and died (Figure 3).

So...why not just plant your corn at 1/2 to 1" deep to get it off to an early start and impress and aggravate the neighbors?

Sure, shallow planted corn can emerge quicker unless: the surface soil dries out or air temperatures dip to very cold lethal temperatures for several hours.

The downside to the potential for early emergence is that the growing point is now closer to the surface. It is more likely to be exposed to early season frost.

A second potential problem is nodal root development is impaired with shallow planting. The result can be lodged corn as the plants get larger. A row cultivator set to throw soil to the base of the plants can sometimes help shallow-planted corn avoid vertical instability.

The early-planted corn at Lamberton has been a focal point for some of the SWROC field crew who have mid-April planted corn on their farms. One of the primary causes of mortality to seed and seedling corn, particularly in early, cold, or wet springs is nervous agriculturists. The April 3rd planted corn plot at the SWROC now looks like Goldy Gopher and his entire extended family had moved in.

Some pointers on scouting corn follow. We can expect to see some uneven emergence due to dry soils in some areas. You can probably tell I am not a fan of shallow seeding.
of corn. On the other hand, while you want to seed to moisture, don’t seed soybeans much deeper than 2 inches!

**Scouting early-season corn** (from a May 2010 issue...when emerged corn froze)

Corn scouting should begin in earnest as soon as fields can be rowed. Initial efforts should focus on evaluating stand. Select several areas of the field and determine stand in 1/1000s acre length of row (Table 1).

Determining the cause in areas with poor emergence might require some detective work because there are many potential causes of poor stand. My suggestion is to start with the obvious. Was seed planted? Most of us can make a mistake once in a while and any mechanical device is predestined for failure. More than one frustrated operator has ignored or turned off the alarm on the monitor.

Before blaming insects (wireworms, seed corn maggot, cutworm) or a disease, eliminate abiotic factors such as seed depth, compaction, and drowning. Remember that dead seedlings, regardless of the cause, will rot under high moisture conditions. They also seem very attractive to wireworm. Cold, slow growing conditions do, however, favor seedling-attacking insects and disease.

Look for corn seed. How about planting depth? Shallow planted corn might emerge later and less evenly than corn planted a bit deeper. Shallow planted corn (< 1 ½ inches) is exposed to greater temperature fluctuations and less consistent moisture. Shallow seeded corn is also at risk for poor root development and root feeding insect damage when it does emerge.

Did the seed germinate? Lack of moisture or cold conditions are the primary cause of poor germination. Has the seed rotted? Fungicide seed treatments do a good job of protecting seed and seedlings from some fungal pathogens but can be overwhelmed under prolonged very wet, cold conditions.

In the case of seedling corn plants that had emerged and freeze, check the below ground tissue. If firm, the plant is likely to survive. Splitting the stems to look at tissue color will point out future problems. Brown, gray and water soaked tissue; particularly crowns, indicate a short life expectancy for the plant.

If plants are frost injured it is best to leave them recover on their own (particularly the small corn this season). Removing the dead tissue by mechanical means or spraying plant health inducing compounds will not improve the survivability of the crop and could make things worse.
Is there evidence of insect feeding? Seed corn maggot and wireworms are the two insects most often associated with corn emergence failures in southwest Minnesota. Seed corn beetles can also occasionally reduce stand. Slow emerging corn is at greater risk from these below ground pests. Unfortunately, there is no effective treatment, other than replanting, for these insects after corn is planted. The insecticide treated seed provided with most Bt-hybrids (and others) should minimize problems from seed corn maggot but occasionally allow attack from heavy wireworm infestations.

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It looks like there is a conflict with the SWROC educational field day geared toward growers on August 13 and the Corn Cob Open Golf Classic. Stay tuned for a potential date change for this event. The field day planners know that disrupting golf outing is generally looked on with disfavor.

_I could not catch a squirrel to compare its ear size to these bur oak leaves._

_Basing a planting decision on the size of oak leaves may not be wise but it does look like it could be a good acorn crop!_

_Have a good finish to the 2015 planting season._

Happy trails,

Bruce Potter
Extension IPM SW MN
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
Facebook: https://www.facebook.com/swroc
Twitter: https://twitter.com/SWMNpest

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