Crop Weather - And so it begins

After a long winter, I finally observed some field activity on April 26th in southern Brown County. I suspect well drained soils will come along quickly with the recent heat and others will also if the forecast for cold temps at the end of the week is pessimistic.

It is still early, too early to push things. Remember, the first time you plant a crop for the season tends to be the most profitable.

Before the warm weekend, the 2 and 4 inch soil temperatures were hovering around 33 degrees. Not much happens at these temperatures but the produce in my refrigerator seems able to defy this rule.

The University of Minnesota Southwest Research and Outreach Center (SWROC), Lamberton, MN, will begin tracking degree-day accumulations on May 1. Unlike many springs degree-days accumulated in late April will not impact crop growth.

Through the growing season the SWROC reports temperature, precipitation and other annual and historical weather data at: http://swroc.cfans.umn.edu/WeatherInformation/index.htm

Topsoils are still too wet for field work in most fields. While the delay has been aggravating, we needed the late spring moisture for the 2013 crop. We are not overly abundant in soil moisture at Lamberton: http://swroc.cfans.umn.edu/WeatherInformation/SoilMoisture/2005-2011SoilWatervs.HistoricAverage/index.htm, http://swroc.cfans.umn.edu/WeatherInformation/SoilMoisture/2013vsHistoricAverage/index.htm. We picked up and additional 1.03 inches of rain since these soil moisture readings were taken on April 15. This spring would be looking bleaker if we had not gone into the winter with the tremendous moisture deficit.
Black cutworm
The late spring has had one advantage. Migration of insect pests from the south into
Minnesota has been delayed.

The black cutworm, one of the migrant pest species that sporadically causes problems
in Minnesota crops, reduced stands in some 2011 and 2012 corn fields. The females
prefer to lay eggs in un-worked fields where areas of winter annual or early spring
germinating weeds, common lambsquarters for example, occur.

This spring, 70 intrepid cooperators across southern MN are manning pheromone traps
to detect black cutworm moths migrating into Minnesota. Based on when and where
moths are captured, potential damage can be predicted. We will provide alerts if any
significant moth flights are observed this spring. We cannot predict damage from other
cutworm species that overwinter here.

To this point in the 2013 spring, weather systems have not been favorable for migration
and very few moths have been captured. This could change with the next
thunderstorm. Several locations have been picking up a few black cutworms since April
26th but nothing that would indicate problems

Depending on how soon they arrive, immigrating black cutworms could find plenty of
locations to lay eggs because of the delay in spring tillage.

This spring, you can view black cutworm trap captures and a weekly report at:
http://swroc.cfans.umn.edu/ResearchandOutreach/PestManagement/CutwormNetwork/i
ndex.htm. We should have each week’s data and any cutting projections available for
viewing by Wednesdays.

Corn rootworms: Is anybody out there?
Unlike black cutworms, corn rootworms overwinter in your fields. Unfortunately, the
prolonged winter is unlikely to have killed many of the rootworm eggs. Yes, the winter
has been long but soil temps have been moderate and remarkably stable.

Of the two rootworm species in Minnesota, the eggs of northern corn rootworm (NCR)
are more tolerant to cold winter temperatures than the eggs of the western corn
rootworm (WCR). For example, one of the older laboratory studies conducted at the
University of Minnesota, showed survival of WCR eggs begins to be affected around
20F. However, winter survival of rootworm eggs depends on a more complex set of
factors than winter temperatures alone. For example, fall temperatures can influence
how well eggs diapause. Residue and egg placement in the soil profile influence the
temperature fluctuations the eggs are exposed to. Finally, populations of corn
rootworms from different latitudes may have different temperature requirements

One of the few advantages of advancing age is remembering stuff those younger than
you did not see. Or wait... or was it that not remembering was a disadvantage of old
age? Anyhow, a dramatic decline in Minnesota WCR populations in 1977 was
correlated with a brutal 1976-77 winter. The graphs below show 1976/1977 and 2012/2013 soil temperatures at the SWROC. Comparatively, the winter of 2012/13 should have been relatively easy for WCR survival.

However, SWROC corn rootworm eggs had three brief bouts with soil temps near 20F this past winter. The dry soil conditions over the winter may have increased egg desiccation. These indicate that there should have been more egg mortality this winter compared to 2011/2012. The length of the winter may also have increased egg mortality but that is far from certain. Bottom line is - we probably have some WCR survivors.

While you are not guaranteed to have a rootworm problem in 2013, rootworm management should not be ignored. Crop rotation out of corn is advised for fields with history of damage to Bt –RW corn.
An increasing number of growers have turned to an at-plant insecticide on both rootworm and refuge hybrids because of perceived rootworm damage. Some of you like to experiment and if you are using a rootworm insecticide; I'd like to encourage you to share your results. A simple protocol for on-farm insecticide experiment can be found at: http://swroc.cfans.umn.edu/prod/groups/cfans/@pub/@cfans/@swroc/documents/asset/cfans_asset_440921.pdf.

**Spider mites – It was just too easy**
By now many, if not all, of you have heard of the resistance to chlorpyrifos insecticide identified in a SWROC two-spotted spider mite population.

The bad news is this is another reminder that resistance will develop to pesticides used on a widespread basis. Economic infestations of mite are rare, even in desert-like Southwest Minnesota. In this case, it is assumed that mites developed resistance to chlorpyrifos applications for soybean aphid problems in the area.

The good news is that we do not have good evidence that this is a statewide problem. Spider mites, pesticide resistant or not, are not expected to be a problem if cool, wet weather persists.

**Soil testing cooperators wanted**
It looks like Dan Kaiser is looking for cooperators in a soil testing research project. http://blog.lib.umn.edu/efans/cropnews/2013/04/soil-testing-sentinel-program.html has the details on this project.

Happy trails,

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