

CROP UPDATE

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Covering the Iowa counties of Cedar, Clinton, Delaware, Des Moines, Dubuque, Henry, Jackson, Lee, Louisa, Muscatine, and Scott.

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EFFECTS OF CURRENT AND FUTURE WEATHER ON AGRICULTURE

CORN

Prognosis for Corn that has been Planted

The cooler and wetter weather that is occurring and is in the forecast have many concerned about corn that has already been planted. History has demonstrated that this prognosis can be fickle. In 2012, fields planted just before a cold rain were some of the lowest yielding fields. In 2013, the planting scenario repeated itself, prompting some people on the radio to state that people should plan to replant all such fields; those fields did not need to be re-planted and ended up being the highest yielding fields that year.

Things to consider are how low the soil temperatures become, how long after planting the soil temperature declined, and the characteristics of the genetics.

How cold does it need to be to cause problems? Some sources simply implicate temperatures less than 50 degrees while others suggest the threshold soil temperature is 41 degrees. So as you travel from north to south, the likelihood if problems should diminish.

And genetics do make a difference. If the literature you have on your genetics do not mention cold germination and/or emergence, ask your dealer.

What happens if soil temperatures do become problematic for the genetics planted?

Depending on the individual situation, potential issues are:

1. Corn planted just before the ground reached the critical threshold (first 24 - 36 hours) may experience "imbibitional chilling" (absorbing warm, then cold water), which may cause the seed to swell but have little germination
2. Corn planted several days before the ground cooled may experience cold injury, which may be a "cork-screwing" as it attempts to emerge, and
3. Pythium seedling rots are promoted by cool, wet soils.

Bob Nielsen of Purdue University wrote an excellent article about these issues at <https://www.agry.purdue.edu/ext/corn/news/articles.14/EarlyCold.html>.

I do not expect there will be widespread problems, but be sure to watch fields to confirm that corn is emerging properly and there is a good stand.

In the event that a field or portion of field does not have the desired stand, refer to Roger Elmore's (former Iowa Extension Corn Production Specialist) article at <http://crops.extension.iastate.edu/corn/production/management/planting/replanting.html> for guidance.

The time between corn planting and corn emergence is based on the soil temperature at seed depth, which is seldom measured. However, it normally takes 90 - 120 Growing Degree Days (GDDs, Heat Units) Base 50 using air temperatures for corn to emerge. There are two very good on-line calculators, both of which allow you to enter your own planting date and then see the results. One is at the Iowa Environmental Mesonet at <http://mesonet.agron.iastate.edu/GIS/apps/coop/gplot.phtml>. Alternatively, you can use the U2U GDD calculator at <https://mrcc.illinois.edu/U2U/gdd/> to determine approximate GDDs locally since planting. Here are a few results, as of May 8, 2019, based on corn planted April 24, 2019. The two sources use observations from somewhat different places, so the numbers do not exactly match.

Location near	Mesonet GDD	U2U GDD
Donnellson	100, 105, 106	99
Burlington	106	85
Mount Pleasant	88	85
Wapello	88	76
Muscatine	94	87
Davenport	77	74
Tipton	92	77
De Witt, Clinton	82	72
Maquoketa	88	72
Dubuque	66, 80	67
Manchester	75	68

Prognosis for Corn that has Not been Planted

Year in and year out, for the past two decades it has been stated that the optimal planting date is April 28. Some recent work shows that this continues to be the best date. However, 95% of yield is consistently achieved if corn is planted by May 13. While no one wants to lose any yield,

a 5% yield loss due to planting date may pale compared to losses caused by planting in poor soil conditions. Mark Licht and Sotirios Archontoulis wrote an excellent blog about this at <https://crops.extension.iastate.edu/blog/mitchell-baum-mark-licht-sotirios-archontoulis/corn-planting-progress-slow-there-still-time>. The 6 - 10 and 8 - 14 day forecasts calls for normal to below normal precipitation but cooler than normal conditions, which may slow soil drying. See <https://www.cpc.ncep.noaa.gov/products/predictions/610day/> and <https://www.cpc.ncep.noaa.gov/products/predictions/814day/>.

Questions on switching hybrid maturity are also coming in. Assuming that the planned genetics are well-adapted for the area, recent research suggests that staying the course until June 1 is the best decision year-in and year-out. This is several days later than was previously suggested. For more details, see Mark Licht's ICM article at <https://crops.extension.iastate.edu/cropnews/2019/05/late-corn-planting-options>.

ALFALFA

Alfalfa Weevil

Alfalfa Weevil problems in eastern Iowa have been few in recent years, but it is still best to scout for them. Iowa State University recommends that scouting for alfalfa weevil begin at 200 Growing Degree Days (GDD) (base 48, from Jan. 1) on south-facing slopes south of Interstate 80, and at 250 GDD on south-facing slopes north of Interstate 80. They should now be active in most, if not all, of Iowa. The easiest way to scout for Alfalfa Weevil is to start with a sweep net just to survey a field. If there are some alfalfa weevil in the net, then follow the proper scouting procedure in <http://www.extension.iastate.edu/CropNews/2015/0414Hodgson2.htm> (in the paragraph above Table 1) to determine if the economic threshold is reached. Alfalfa weevil quit feeding at about 900 GDD Base 48. You can monitor GDD Base 48 progress at http://mesonet.agron.iastate.edu/data/summary/gdd48_jan1.png.

EPA and IDALS on Dicamba Loaders and Mixers

Much has been made about changes in the requirements for applicators using the Restricted Use formulations, currently Engenia, FeXapan with VGT, Tavium plus VGT, and Xtendimax with VGT. One of the items that has not received much attention is a rule stating, "Non-certified personnel may not perform any activities with dicamba products, including mixing or loading" see <https://www.epa.gov/ingredients-used-pesticide-products/dicamba-training-requirements-frequently-asked-questions#must-attend>. While this may not be a large issue for most farmers, retailers often employ individuals who are certified as handlers, which means they can handle open containers and mix materials, but they cannot go to the field and actually apply. The Pesticide Bureau of the Iowa Department of Agriculture and Land Stewardship has stated that individuals in Iowa who are certified as handlers cannot handle open containers of these dicamba products nor can they participate in the mixing of those products. See: <https://crops.extension.iastate.edu/blog/elizabeth-buffington/only-certified-applicators-can-mix-and-load-dicamba>.

CALENDAR ITEMS

Conservation Field Day

4:00 - 7:00 p.m., Wednesday, June 5, 2019

Fawcett Farms Cold Spring Pond
459 290th Street, West Branch, Iowa

More information is at <http://www.extension.iastate.edu/Pages/eccrops/190605Fawcett.pdf>.

Spring Field Day - Southeast Research and Demonstration Farm

1:00 p.m., Thursday, June 20, 2019

Crawfordsville, IA

In addition, training for Certified Crop Advisors will be conducted, beginning at 9:00 a.m.

Details will appear at: <http://www.extension.iastate.edu/Pages/eccrops/meetserc.html>.

Spring Field Day - Northeast Research and Demonstration Farm

1:00 p.m., June 26, 2019

Nashua, IA

Details will appear at: <http://www.extension.iastate.edu/Pages/eccrops/meetnerf.html>.

Spring Field Day - Muscatine Island Research and Demonstration Farm

June 27, 2019, time to be announced

Fruitland, IA

Details will appear at: <http://www.extension.iastate.edu/Pages/eccrops/meetmusc.html>.