

IOWA STATE UNIVERSITY

Extension and Outreach

CROP NOTES for June 11, 2019

Iowa State University Extension Information for Northeast Iowa

Brian Lang, ISU Extension Agronomist, Decorah, IA

Past issues of Crop Notes are posted at:

<http://www.extension.iastate.edu/winneshiek/page/crop-notes-brian-lang>

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WEATHER

Temperature and Rainfall

The 3-month forecast from the National Weather Service (maps below) suggest roughly 40% probabilities for both a cooler and wetter than normal crop season. They don't predict how much cooler or wetter. The current northeast Iowa forecast for the next 2 weeks suggests an average of 18 GDD/day. This is just a fraction cooler than the long-term normal of 18.5 GDD/day.

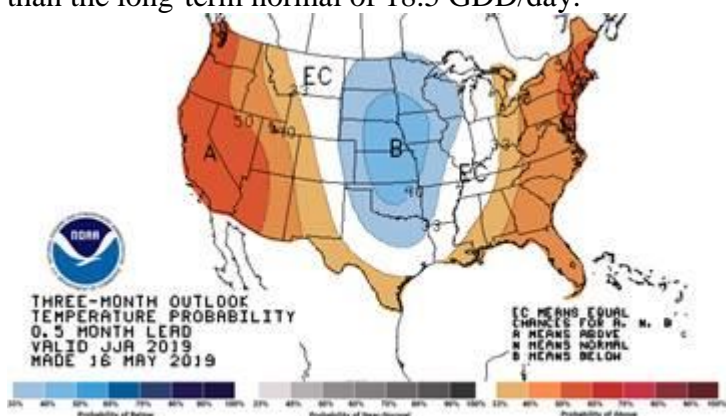
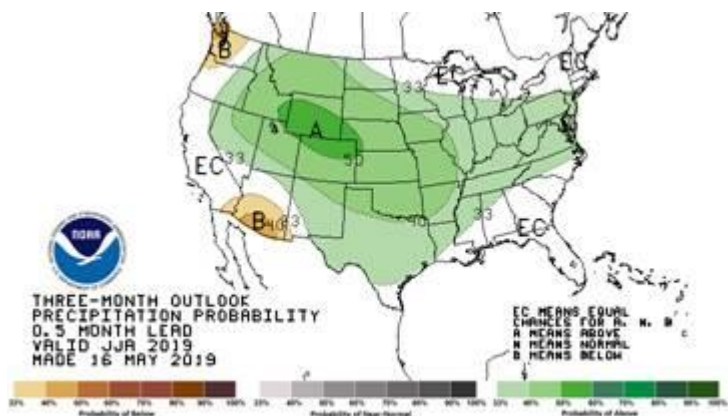


Figure 1



CORN

Growth and Development - Scouting

For me, there is no substitute to walking a field, but prior to heading to the field you can estimate your corn stage of development with your computer.

1. Go to: <https://mesonet.agron.iastate.edu/GIS/apps/coop/gplot.phtml?var=gdd50&year=2019>
2. Change the first date to your planting date and click on "Make Plot"
3. Find a GDD number on the map close to your area (however, the Decorah and Cedar Falls locations are in error – too high).
4. Subtract 100 GDD from that number to account for planting to emergence.
5. Take the remainder and divide by 84 to get the current V-stage for your corn field. Corn adds a new leaf every 84 GDD.

6. Example: I planted May 15 near Fayette, the “Make Plot” gives me 358 GDD (May 15 to June 10). Minus 100 = 258 GDD. Divide by 84 = 3.1, so my corn should be about V3 stage (3 leaves with fully formed collars (photo A). Seed roots and mesocotyl should still be healthy (photo B). Permanent roots are developing off the node about $\frac{3}{4}$ -inch below the soil line, the main growing point is still below ground just above this node, and the total root mass at V3 is roughly equal between permanent roots and seed roots. With the many wet field conditions before, during and after planting, we have various plants showing premature rotting of the seed roots (photo C) and/or mesocotyl (photo D). If this seedling root rot prematurely roots the seed roots and/or the mesocotyl, we lose contribution from the seed roots during this early plant development. But as long as the permanent roots got established and are healthy (photo C), the plant can still survive. Although its growth will somewhat fall behind that of the unaffected plants in the field, and be noticeable once the field moves into its rapid growth phase (+V7 stages). Expect to see many uneven fields this season.

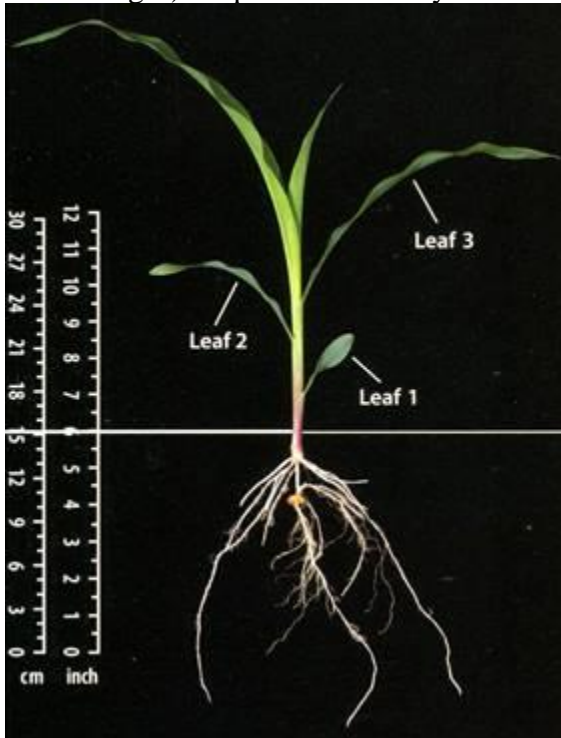


photo A 1



photo B 1



photo C 1



photo D 1

Repeating corn scouting tips from last weeks; check:

- Seed depth. *Did the planter accomplish what was planned?*
- Plant population (uniformity or gaps), investigate gaps? *Planter mechanics, seedling disease, soil insects like grubs, wireworms, seedcorn maggots.*
- Uniformity of emergence. *Within 1 leaf stage is no concern.*
- Sidewall compaction. *More likely this spring than most; may help explain other issues like gaps or uniform emergence.*
- Seed furrow closure or related issues. *Down pressure, hair-pinning crop residue in seed furrows, sidewall compaction.*
- Healthy seedling roots and mesocotly. *What should they look like? ... photos above.*
- Feeding damage on leaves? *Check under the INSECTS section for information on Black cutworm, Armyworm, and Slugs.*

The following article covers some of these crop scouting items above, as well as suggested plant populations for late-plant/replant issues: <https://crops.extension.iastate.edu/cropnews/2019/05/evaluating-corn-stands>

SOYBEANS

Late Planting on Yield and Maturity Group

We suggest to stay with full season varieties until mid-June. In recent trials conducted at 7 ISU research farms over 5 years, the same soybean variety planted 40 to 60 days apart reached physiological maturity within 7 to 10 days of each other. Moreover, a 0.5 to 1.0 maturity group spread resulted in a difference of only 3 to 5 days to reach maturity. The following article discusses this in some detail.

<https://crops.extension.iastate.edu/cropnews/2019/05/late-soybean-planting-options>

Growth and Development - Scouting

There are some V1 stage soybeans in the area, but most fields are just emerged to just planted. A recent ICM News article talks about stand counts. *i.e.* with 30-inch rows, 7 plants per foot = 122,000 plants per acre.

<https://crops.extension.iastate.edu/cropnews/2019/05/evaluating-soybean-stands>

NITROGEN

Nitrogen Fertilization Options with Delayed or Rescue Applications

Tips on typical sidedress application timing and products are providing in a recent article at:

<https://crops.extension.iastate.edu/cropnews/2019/06/nitrogen-fertilization-options-delayed-or-rescue-applications>

Also in the same article above are the usual questions about how much 28% can I apply over the top of emerged corn. A few highlights from this article include:

- University of Minnesota research indicated phytotoxic effects on V3 corn were worse at rates greater than 60 lb N/acre (rates applied were 0, 60, 90, and 120 lb N/acre), but damage was not permanent and did not adversely affect stand or yield.
- When plants were larger than the V3 stage, plant damage was worse and some yield depression occurred with the 120 lb N/acre rate.
- Broadcast UAN applications beyond the V7 stage are not recommended, and the risk of injury increases during hot, dry conditions.
- Many preemergence herbicides are applied using UAN as the carrier, however, this strategy is only recommended prior to crop emergence. Most herbicides prohibit application in N solutions after corn has emerged. Check herbicide labels closely.

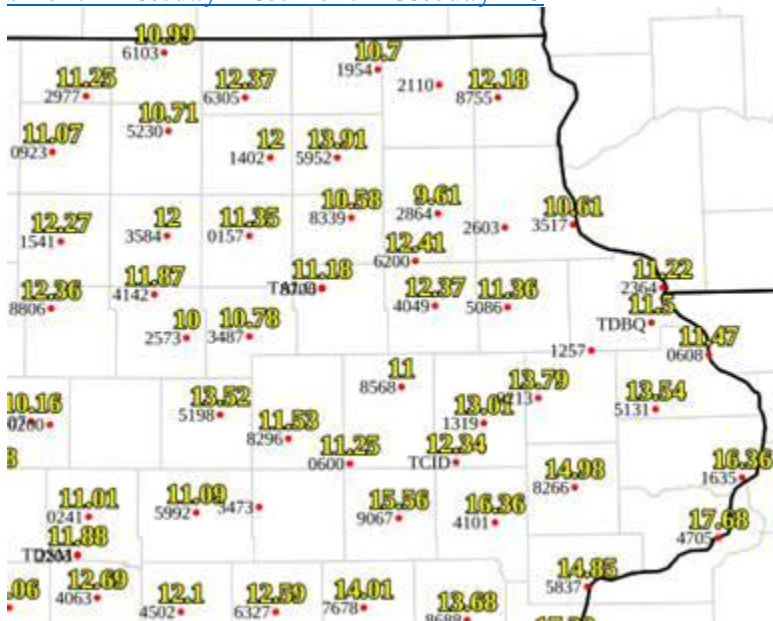
Spring-Time Precipitation – A Tool for Estimating Nitrogen Application Need for Corn

In general, if N was applied last fall or before April 1, 2019, data from ISU suggests that if rainfall from April 1 through June 30 exceeds 15 inches, we should consider adding some more N to corn fields. See article

at: <https://crops.extension.iastate.edu/cropnews/2019/06/springtime-precipitation—tool-estimating-nitrogen-application-need-corn>

The estimated rainfall from April 1 to June 10 is a ballpark 12 inches for northeast Iowa.

<https://mesonet.agron.iastate.edu/GIS/apps/coop/gsp/plot.phtml?network=IACLIMATE&var=prec&year=2019&smo=4&sd=1&emo=6&ed=10>



INSECTS

As we plan to scout fields for pest problems, the insect scouting list starts to get a bit lengthy in June, especially with the extended planting window this season. To help organize the planning for insect scouting I created a one-page *Insect Pest Crop Scout Calendar* (see attachment, prints best on 8.5 x 14 size paper). The front page lists the most common insect pests within “monthly” times of season, with the colorized areas representing scouting times. Tips are included with each pest. Of course the monthly times are just guidelines, as degree days vary from season to season. And degree day information is included for many pests to help refine the scouting times for them. While tips are included with each insect pest, I strongly encourage you to have a copy of CSI 14, *Field Crops Insects*, available to order from your County Extension Office, or at <https://store.extension.iastate.edu/Product/13725> There is no better reference on our field crop insect pests.

Black Cutworm (BCW)

Black cutworm would be cutting by now if present, but we also watch for cutworm to V5 stage corn. Delayed planting has provided more areas of favorable environment for egg laying during moth migration, and an extended period of time for corn to reach the ‘safe’ V5 stage. Here’s an article on scouting tips, photos and thresholds for BCW: <https://crops.extension.iastate.edu/cropnews/2019/05/scouting-black-cutworm-2019>

Common Stalk Borer (CSB)

For those that lose corn plants in the first few rows along grassy field borders or grass-back terraces, you may have a problem with CSB.



We can use a foliar insecticide on the first few rows of corn to target larval migration from the grass field border into those first few corn rows. This migration starts ~1,300-1,400 DD (from Jan. 1 base 41F). Prior to any insecticide application, we should scout for “dead-heading” of grass in the field border (photo above). These are not mature brome grass plants, but rather prematurely killed plants by stalk borer. This occurs when the stalk borer larva get too large to remain in the grass stem (they killed the growing point, thus the dead seedhead), and are then ready to migrate to look for a larger diameter host plant like corn or Giant ragweed. If you don’t see very many “dead-heads”, we don’t expect much of a stalk borer population to affect corn, and no need to treat with insecticide. Although, scout one more time about a week later just to be sure. We are

currently at about 1,000 DD along Hwy 9, and 1,100 DD along Hwy 20. This extrapolates out to reach 1,300-1,400 DD around June 24 along Hwy 9 and June 20 along Hwy 20.

True Armyworm (TAW)

True Armyworm (not to be confused with fall armyworm) could start feeding by now if present, but we also watch for TAW throughout June. This insect is most commonly found in association with corn following a winter rye cover crop, but don't limit your scouting to only that circumstance. Moths migrating into the area (April-May) are attracted to lay eggs in grassy and high residue areas. Our late planting season has provided more areas of favorable environment for egg laying during moth migration. Once the eggs hatch, TAW larva tend to avoid of direct sunlight by hiding in the corn whorl or larger plants, or under residue in very young corn fields. They feed at night or in the daytime with overcast skies. While they may not be seen in the daytime, their feeding signs on leaves are quite easily noticed. Here's photos of feeding damage from very young TAW,



and here's a photo of feeding damage from larger size TAW in larger corn. The armyworm is hiding in the whorl on a sunny day. Feeding damage and armyworm frass (waste) is easily seen.



With basic scouting practices, you will find this pest in plenty of time to treat with a foliar insecticide (easy to kill) and avoid any significant damage to the crop. Some Bt-corn is labeled for tolerance to TAW. FYI, *Handy Bt-Trait Table* at: <https://agrilife.org/lubbock/files/2019/05/BtTraitTable-May-2019.pdf>

Corn Rootworm

Corn rootworm egg hatch is underway. We get to about 50% egg hatch at 684 to 767 soil degree days (base 52 from Jan. 1). This cooler spring puts us currently at about 550 DD for northeast Iowa (Nashua). Average DD/day is about 25, so we are still about 6 days away from 50% egg hatch.

Slugs

With the extreme wetness, don't be surprised to see some slug damage. FYI, photos of damage in corn and soybeans from a Purdue University website:

<https://extension.entm.purdue.edu/pestcrop/2015/issue10/> and Ohio State University

<https://agcrops.osu.edu/newsletter/corn-newsletter/2018-14/season-slugs>

They feed dusk to dawn and hide during the day under residue or in cracks in the ground. While there is no rescue treatment, it's rare for them to be a significant problem in Iowa. I just wanted to let you know what it looks like. If you think you have slug damage and really want to verify it, flag your suspected site, then check it out at about 5:00 AM.

European Corn Borer (ECB)

Historically, this was the worst insect pest in corn, even worse than corn rootworm. ECB Bt-corn is highly effective. If you are not using ECB Bt-corn, as corn reaches to height of 18 inches (extended leaf height), you should begin scouting for 1st generation ECB. If you need a refresher on ECB management, here is a free color fact sheet to download <https://store.extension.iastate.edu/Product/15141> Pages 8-9 in the fact sheet explains scouting for 1st generation ECB.

Potato Leafhopper (PLH)

June is always the time to start scouting for PLH in alfalfa. Scout established stands and also new seedings. It's easy to forget about the alfalfa under an oat nurse crop. PLH migrate up from the southern U.S. every spring. Scouting and management tips are available

at: <http://www.extension.iastate.edu/CropNews/2009/0615hodgson.htm> The only way to scout PLH is with a sweep net. The net should be 15-inch diameter. A couple of resources that offer a quality sweep nets with strong 3-ft. handles are:

[BioQuip](http://www.bioquip.com/search/DispProduct.asp?pid=7625HS), 310-667-8800, <http://www.bioquip.com/search/DispProduct.asp?pid=7625HS>, a 3 ft. long, 1-inch diameter wood handle, 15 inch diameter net. Item #7635HS, "Heavy duty sweep net" for ~\$34

[Forestry Suppliers, Inc.](http://www.forestry-suppliers.com/search.asp?stext=sweep%20net), 800-647-5368, <http://www.forestry-suppliers.com/search.asp?stext=sweep%20net>, a 3 ft. long aluminum handle, 15 inch diameter net. Item # 53747, "Professional series insect net" for ~\$45

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EVENTS

June 12, Webinar of Project Results Comparing Three Cow-Calf Grazing Systems: *limited, traditional, & extended systems*

Please find the webinar details and explanation of the program at: <https://www.extension.iastate.edu/news/june-12-webinar-explores-different-cow-calf-management-systems>

June 12-13, Four-State Dairy Nutrition & Management Conference, Dubuque

The conference presents the latest research on issues concerning the dairy industry including feed efficiency, calves and transition cows. For details, go to: <http://fourstatedairy.org/index.html>

June 13, Hybrid Rye, Markets & Feeding, West Union

3:00 to 5:30 PM at the Loran Steinlage farm near West Union. Field location: 220 N Industrial Parkway West Union; Rain location: 12517 220th St. (Loran's garage) West Union. Learn all about the basics of growing hybrid rye, finding markets and feeding livestock with small grains. Loran will also share his experiences with various rye varieties, growing malt barley and relay cropping. For more details about the program and directions, go to: <https://practicalfarmers.org/events/field-days/hybrid-rye-managing-marketing-and-feeding-livestock/>

June 18, Small Grains as a Profitable Alternative, Dyersville

10:30 AM to 1:00 PM at the Wayne Brunsman farm near Dyersville. Using small grains as a profitable alternative to low margins in a conventional corn-bean rotation; breaking up weed cycles without expensive herbicides; incorporating small grains into animal rations; advances in small-grains varieties and experimenting

with hybrid rye. For more details about the program and directions, go to:

<https://practicalfarmers.org/events/field-days/using-small-grains-to-protect-your-bottom-line/>

June 18-19, The 2nd International Conference on Precision Dairy Farming, Rochester, MN

The conference offers many opportunities for learning and networking on dairy digital trends in the industry, robotics and sensors, veterinarian discussions on use of technology for dairy cow health monitoring, and a venture capital perspective from outside the dairy industry. For details, go to:

<https://www.precisiondairyfarming.com/2019/>

June 20, Annual June Field Day at the ISU Southeast Research Farm, Crawfordsville

Offered is a morning session for certified crop Advisors, and an afternoon session that is free and open to the public. For details, go to: <https://www.extension.iastate.edu/news/southeast-iowa-research-farm-plans-spring-field-day>

June 20, Annual June Field Day at the ISU Northern Research Farm, Kanawha

9:30 to Noon with lunch served after. ISU Extension specialists will discuss weeds, herbicides, cover crops and current insect issues (i.e. soybean gall midge) in corn and soybeans. For details, go to:

<https://www.extension.iastate.edu/news/northern-iowa-research-farm-hold-field-day>

June 22, Breakfast on the Farm, Calmar

Saturday, 8:30am to Noon at Iowa's Dairy Center is the 10th Annual Breakfast on the Farm. The Dairy Center is located just south of Calmar at 1527 Hwy 150 South. Serving Belgian Waffles with real butter and whipped cream, sausage, cheese, yogurt, milk and ice cream. In addition to breakfast, visitors will enjoy activities including guided tram tours of Iowa's Dairy Center, hand-milking a cow, petting zoo, inflatables, corn pools, Story Time with the Dairy Princess and more. New features at this year's Breakfast on the Farm event include expanded kids' activities, the 10th anniversary scavenger hunt and farm-themed yoga. Breakfast on the Farm will be held rain or shine. Parking is available on-site and donations are appreciated. This event is made possible by generous support from community sponsors. For more information, visit our website at www.iowadairycenter.com or Mariah Schmitt, Iowa's Dairy Center Coordinator 563-534-9957.

June 25, Flame & Electric Weeders in Organic Cropping Systems, Decorah

10:00 AM to 1:00 PM on the Wayne & Cheryl Wangsness farm south of Decorah. Discuss 10 years with a flame weeder and now 3 years with electric weeder. Come see and hear about the equipment and how it's been working. Also, a short discussion about timely crop scouting for seasonal crop pests. For more details about the program and directions, go to: <https://practicalfarmers.org/events/field-days/controlling-weeds-in-the-row-for-organic-crops/>

June 26, Annual June Field Day at the ISU Northeast Research Farm, Nashua

1:00 to 4:10 PM, free and open to the public. The first two sessions will be in the Borlaug Learning Center starting at 1:05 and 1:55 PM, respectively.

- Dennis Today, Director of the Midwest Climate Hub, will kick-off the program in the Borlaug Learning Center, by providing his insights on crop weather for the 2019 growing season.
- Angie Rieck-Hinz, Extension agronomist, follows with a discussion of the likelihood of hemp production in Iowa for 2020, including development of regulations, current production practices and economic information from other states.
- The on-farm wagon tour starts at 2:45 with Stephan Gailans, Research and Field Crops Director with Practical Farmers of Iowa, to share his expertise on oat production and seeding cover crops into V6 corn.
- and, Ed Zaworski, ISU field crops plant pathologist, will discuss plant disease issues in a wet spring and considerations for foliar fungicide applications later in the season.

The field day is free and open to the public. It starts at the Borlaug Learning Center Headquarters on the ISU Northeast Research Farm and Demonstration Farm. Directions: From Nashua at the Jct. of Hwy 218 (Exit 220) and Co. Rd. B60, go west on B60 1.1 miles to Windfall Ave., then south 1 mile to 290th St., then east 0.2 miles to the farm. CCA credits will be available (2 CM, 1 PM, 0.5 SW). For more information about the event, call Terry Basol at 641-426-6801.

June 27, Iowa Swine Day, Ames

Speakers to address current issues affecting the industry, including: The status of and response to African Swine Fever; What makes a biosecurity program successful; Improving company culture; Precision pork production; Feeding the high-producing sow. For more information, go to:

<http://www.aep.iastate.edu/iowaswineday/index.html>

July 10-11, Crop Management Clinic, near Boone

A 2-day program at the Field Extension Education Lab. This next-level clinic focuses on the 'how and why' along with current research. Extension specialists and ISU researchers will be discussing the impacts of common crop problems, how to avoid them, and what steps you can take to improve productivity. In addition, faculty and staff will be highlighting current research taking place throughout the state and how their findings can impact crop management. Small group sizes encourage discussion and interaction with Extension instructors, and practical exercises in field situations. For details about the program, go to:

<http://www.aep.iastate.edu/feel/>

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Brian Lang

Iowa State University Extension Agronomist

325 Washington St., Suite B, Decorah, IA 52101

Office 563-382-2949; Cell 563-387-7058; Fax 563-382-2940

<https://crops.extension.iastate.edu/>

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