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CORN
Growing Degree Days (GDD), Growth & Development
Northeast IA is currently anywhere from 1,400 to 1,550 GDD from May 1 to today depending on location, which is a few days behind the long-term normal. Cooler than normal weather during grain fill is favorable for yield as it extends the grain fill period. Average GDD in early August is about 21 per day, and mid-Aug about 20 per day. To determine GDD for any given period of time, go to: http://mesonet.agron.iastate.edu/GIS/apps/coop/gsplot.phtml?network=IACLIMATE&var=gdd50&year=2015&smonth=5&sday=1&emonth=8&eday=1

Most corn is R1 stage (silking). Mark the silk dates for each field on your calendar as a guideline to help determine future stages. The following website describes the approximate timeline and description for each reproductive stage: http://www.agronext.iastate.edu/corn/production/management/growth/yield.html Below is a similar guideline that attempts to include both calendar days and average GDD days for a full season corn hybrid in northeast Iowa.

Reproductive development by GDD for a 2,650 GDD corn hybrid (~1,250 GDD from R1 to R6):
R1: Reproductive silks emerging/pollen shedding 1,400 GDD from planting date.
R2: Blister stage 1,630 GDD, about 11 days after R1 (crop can still abort kernels during this period).
R3: Milk stage: 1,800 GDD, about 19 days after R1 (can now estimate yield via kernel counts: https://www.agry.purdue.edu/ext/corn/news/timeless/YldEstMethod.html).
R4: Dough stage 1,925 GDD, about 25 days after R1.
R5: Kernels denting 2,075 GDD, about 32 days after R1.
   R5.25: ¼ milk line, 2,150 GDD, about 38 days after R1 (start corn silage harvest for bunkers and bags).
   R5.5: ½ milk line, 2,270 GDD, about 48 days after R1 (corn silage harvest for upright silos).
   R5.75: ¾ milk line, 2,445 GDD, about 55 days after R1.
R6: Physiological maturity (black layer, safe from frost) 2,650 GDD, about 65 days after R1. Aerial seeding of cover crops is generally timed for beginning black layer.

SOYBEANS
Growth and Development
Most soybean fields are around the R3 stage (beginning pod), with some of the earliest planted fields in R4 stage (full pod). Soybean stages are illustrated and defined at: http://extension.agron.iastate.edu/soybean/production_growthstages.html Below is a similar guideline for a full season variety in northeast Iowa.

Soybeans: Reproductive development for a full season soybean (~70 days from R1 to R7-frost safe):
R1: Beginning bloom (at least one open flower on the main stem),
   5 days to R2
R2: Full bloom (an open flower at one of the two uppermost nodes on the main stem),
   10 days to R3
R3: Beginning pod (pods are 3/16-inch long at one of the four uppermost nodes on the main stem with a fully developed leaf),
   9 days to R4
R4: Full pod (pods are 3/4-inch long at one of the four uppermost nodes on the main stem with a fully developed leaf),
   11 days to R5
R5: Beginning seed (seeds are 1/8-inch long in the pod at one of the four uppermost nodes on the main stem),
   15 days to R6
R6: Full seed (pods contain green seeds that fill the pod to capacity at one of the four uppermost nodes on the main stem),
   20 days to R7 (about half way through this stage mid-canopy leaves begin to yellow and drop; aerial seeding of cover crops should be planned just before or at the beginning of leaf drop).
R7: Beginning maturity (one pod on the main stem has reached its mature tan or brown color),
   10 days to R8 (safe from a significant yield reduction if a killing frost occurs at this point).
R8: Full maturity (95% of the pods have reached their mature color).

FORAGES
Late Summer Seeding Forage Stands
The best timing for late summer establishment of forages is early to mid-August for northern Iowa, mid- to late August for central Iowa and late August to early September for southern Iowa. Here’s an article covering the basic procedures for a late summer seeding of forages, go to: [http://www.extension.iastate.edu/CropNews/2010/0719barnhart.htm](http://www.extension.iastate.edu/CropNews/2010/0719barnhart.htm)

INSECTS
Bird Cherry-Oat Aphid in Corn
Something to consider scouting for in early August. This insect has caused some very spotty problems over the last 7 years, mostly in Howard and Chickasaw Counties, but last year also in Winneshiek County. As with Soybean Aphid, these aphids can multiply quickly under the right conditions. I have not seen any of these aphids at this time. They would first show up at the base of corn plants in early August. As they increase in population, they move up the plant to onto leaves and the husk. Popular questions?
1) What do they look like? The following article includes close-up photos of Bird Cherry-Oat Aphids and Corn Leaf Aphids: [http://www.extension.iastate.edu/CropNews/2009/0807hodgson.htm](http://www.extension.iastate.edu/CropNews/2009/0807hodgson.htm)  Corn Leaf Aphids congregate in the whorl and then on the tassel. As I mentioned above, Bird Cherry-Oat Aphids start at the base of the plant and move up.
2) Is there a threshold level? Not really, but if aphid activity threatens to get to the husk, then they likely should be controlled before they populate heavy. The problem is that we have no idea if they will populate heavy.

3) To make assessment of this pest even more questionable, limited observations have shown that these aphids greatly favor some hybrids over others. In 2011, I scouted them in a large variety trial near Riceville. I found some hybrids with over 2,000 aphids per plant, and then just 4 rows over the next hybrid only had a few hundred aphids per plant.

4) The attachment includes photos and comments about the progression of a heavy Bird Cherry-Oat Aphid infestation from a research trial in 2012.

**Corn Rootworm**
The populations appear to be quite light so far. Be sure to scout the latest developing fields for possible silk clipping. As all of the earlier fields advance to brown silks, beetles will move to those later developing fields that still have green silks. Plants require at least ½-inch of exposed silks to pollinate. Excessive silk clipping must be responded to ASAP to allow for pollination.

**Green Cloverworm**
In the field near Decorah where I monitor soybean aphid, I have a Green cloverworm infestation of about 30% plants infested. That’s about 3 per foot of row in 30-inch rows. The following article states the threshold requires at least 5 per foot of row. [http://www.extension.iastate.edu/CropNews/2010/0712hodgson.htm](http://www.extension.iastate.edu/CropNews/2010/0712hodgson.htm) Another option is to estimate defoliation from leaf feeding. A level of 20% is usually considered threshold in early reproductive stage soybeans (R1-R2), and then drop this to about 15% defoliation once soybeans reach the R3 to R4 stages. Pictures of defoliation levels are included in the article. The current defoliation level of my field near Decorah is still less than 5%.

**Potato Leafhopper**
Continue scouting through August. Many fields being found over threshold. Information on ID, thresholds and management is available at: [http://www.extension.iastate.edu/CropNews/2014/0602hodgson.htm](http://www.extension.iastate.edu/CropNews/2014/0602hodgson.htm)

**Soybean Aphid**
The monitored site near Decorah advanced from 37% infestation last week to 96% infestation this week. Populations are still on the low side averaging 15 aphids/plant. This level is now just a little behind some previous years where thresholds were reached around mid-Aug. (see attachment). For the first time this season the site had a significant number of winged aphids, which are quite good at initiated new colonies throughout the field. It’s time for all soybean growers to conduct regular scouting of soybean aphid. The easiest and quickest scouting method to use is “Speed Scouting”. The Speed Scouting instruction sheet is available at: [http://www.ent.iastate.edu/dept/faculty/hodgson/files/ul/2009%20Speed%20Scouting%20blank%20form.pdf](http://www.ent.iastate.edu/dept/faculty/hodgson/files/ul/2009%20Speed%20Scouting%20blank%20form.pdf) When scouting, pull the individual plant out of the ground to view the underside of all leaves, as soybean aphids are now found throughout the plants.

**LEAF DISEASES**
Corn
This is largely a repeat of last week’s Crop Notes as little has changed from last week, but there is still time to scout and treat if necessary.

**Eyespot** is the most widespread of the main leaf diseases in northeast IA. **Northern Corn Leaf Blight** (NCLB) is now being found with more frequency in northeast IA with certain hybrids. **Gray leaf spot** (GLS) is not common in northeast IA this season, and **Common rust** is quite minimal at this time. A few plants with **Goss’s wilt** has also been found in northeast IA, but of course a foliar fungicide is no help with this bacterial disease. Just take good notes to assist with future management on hybrid selection, crop rotation and residue management to counter this disease.

**Scouting tips for fungicide applications:**
1) Stage the crop: Most fields are R1 stage (silking) with some of the mid-April planted corn and shorter season corn starting to reach R2 stage (blister); see the corn stage guidelines above.
2) Scout for ANY disease presence found on the 3rd leaf below the ear leaf on up the plant on >50% of the plants. NCLB and GLS are potentially more serious rapidly developing diseases, followed by Eyespot, and then Common Rust. However, Eyespot infestations are more widespread this season than most, and GLS is nearly absent.
3) Is the field continuous corn with overwintering corn residue on the soil surface (reduce-till or no-till)? This adds risk for further disease development.
4) Is the hybrid susceptible to the disease(s) in question being found on the leaves? If the hybrid is only moderately susceptible to the disease(s) in question, consider additional risk factors to make the decision; i.e. more risk with a disease history in the field, surface crop residue, and predicted weather conditions favorable for disease
5) Does the long-term forecast suggest favorable weather for disease development? NCLB and Eyespot prefer a cooler than normal summer weather, while GLS prefers warm and very humid conditions. NOAA 8-14 day outlooks are posted at: [http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php](http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php)

**Soybeans**
Most soybean fields still looking quite low in fungal leaf diseases. In most fields **Septoria brown spot** ([http://iasoybeans.mobi/publications/diseases/foliar/septoria_brown_spot.php](http://iasoybeans.mobi/publications/diseases/foliar/septoria_brown_spot.php)) never advanced beyond the lower canopy. There is almost no **Downy mildew** ([http://www.extension.umn.edu/Agriculture/crop-diseases/soybean/downymildew.html](http://www.extension.umn.edu/Agriculture/crop-diseases/soybean/downymildew.html)). Most of the abnormal leaf symptoms are from contact herbicide burn, mostly from the Diphenylether herbicide family of products including Cobra, Phoenix, Flexstar, Reflex, Blazer, etc. (mild injury at [http://www.omafra.gov.on.ca/english/crops/facts/herbinjury_gallery/soybean_diphenylether.htm](http://www.omafra.gov.on.ca/english/crops/facts/herbinjury_gallery/soybean_diphenylether.htm) and more severe injury at [http://fyi.uwex.edu/weedsci/1840-2/](http://fyi.uwex.edu/weedsci/1840-2/)). Foliar diseases that typically do not appear until August in include **Frogeye leaf spot** ([http://www.extension.iastate.edu/CropNews/2011/1017mueller1.htm](http://www.extension.iastate.edu/CropNews/2011/1017mueller1.htm)) and **Cercospora leaf blight** ([http://extension.agron.iastate.edu/soybean/diseases_cercosporasojina.html](http://extension.agron.iastate.edu/soybean/diseases_cercosporasojina.html)). Both diseases are easy to scout for because they can be seen in the upper canopy. In the August of 2014 there was a rather large occurrence of Cercospora leaf blight. Foliar fungicide timing for these two diseases in northeast Iowa is typically during R4 stage.

**NUTRIENT MANAGEMENT**
Farmer Workshops on Interpreting Soil and Manure Tests
ISU Extension agronomists and dairy specialists are offering workshops to fine-tune soil nutrient management programs. “We will take a step-by-step approach on how to read a soil test and determine fertilizer needs,” said Brian Lang, agronomist with ISU Extension. “We’ll interpret manure tests to determine how much of the crop nutrient needs can be met with manure applications. This knowledge will optimize on-farm resources, and likely reduce commercial fertilizer costs while increasing producer income.” It’s a 2-hour workshop that starts promptly at 10:00 AM, with the first hour-plus on step-by-step instructions working through soil and manure tests, and the remaining time mostly for questions and answers. Participants may bring along recent soil and manure tests from their farm operations for interpretation. There are nine workshop dates and locations available in August. The program is free, but seating is limited so please call ahead to make your reservation. For more information or to make reservations, contact the local Extension County office or visit www.extension.iastate.edu/content/county-offices
• Thur., Aug. 13 – Fayette Co. Extension office, Fayette, 563-425-3331
• Tues., Aug. 18 – Allamakee Co. Extension office, Waukon, 563-568-6345
• Wed., Aug. 19 – Sac Co. Extension office, Sac City, 712-737-4230
• Thur., Aug. 20 – Howard Co. Extension office, Cresco, 563-547-3001
• Thur., Aug. 20 – Sioux Co. at NW Iowa Comm. College, Campus Bldg. A, Rm 119, Sheldon, 712-737-4230
• Tues., Aug. 25 – Delaware Co. Extension office, Manchester, 563-927-4201
• Wed., Aug. 26 – Dubuque Co. Extension office, Dubuque, 563-583-6496
• Thur., Aug. 27 – Clayton Co. Extension office, Elkader, 563-245-1451

WEEDS
Nanotechnology
Another exciting advancing technology, but beware of the hype… nicely addressed in this article from Purdue University. https://ag.purdue.edu/btny/weedscience/Documents/Adjuvant.pdf

EVENTS
Aug. 3-7, Weeds Week, 5 locations in Iowa
The primary goal of Weeds Week is to increase knowledge and understanding of herbicide resistance and develop a hands-on, practical approach to developing a long-term weed management plan that works. We will walk through the most common weeds in Iowa, their known resistances, how to interpret effective rates of active ingredients for pre-mixes, designing resilient herbicide programs, and look at non-chemical control options. Each location will also have herbicide mode of action plots to walk through and discuss. The session is 2.5 hours long, is broken down into sessions for farmers and sessions for ag retailers, and will provide 2.5 hours of pest management credits for CCA’s. Registration is $25 (includes materials and lunch) and is open until 4 days prior to the start of each session. Additional information and on-line registration can be found at http://www.aep.iastate.edu/weeds/
Times & Locations:
Morning session for farmers - check-in at 9:00 am, program 9:30 - noon followed by lunch
Afternoon session for agribusiness - check-in at noon with lunch, program follows from 1:00 - 3:30 pm

Aug 3 - Southeast Research and Demonstration Farm, Crawfordsville, IA.
Aug 4 - Armstrong Memorial Research and Demonstration Farm, Lewis, IA.
Aug 5 - Northeast Research and Demonstration Farm, Nashua, IA.
Aug 6 - Northwest Research and Demonstration Farm, Sutherland, IA.
Aug 7 - Field Extension Education Lab, Boone, IA.

Aug. 4, Cover Crop Seeding & Soil Health Field Day, Postville
10:00 AM to 1:00 PM with lunch provided at the Don Elsbernd farm at 809 Pole Line Road, Postville. The field day will focus on a variety of practices to improve soil health including cover crops and reducing nutrients entering Iowa’s water bodies, including hands-on soil health demonstrations and a local farmer panel to discuss experiences with cover crops. The field day is free and open to the public, but an RSVP is requested. Please contact Elyssa McFarland, elyssamcfarland@gmail.com

Aug 5, Hewitt Creek Farmer-led Watershed Improvement Project Bus Tour, Dyersville
1:00 to 5:00 pm starting at the Jeff Pape Farm, 31406 Floyd Rd, Dyersville. The tour is for community and agriculture leaders, policymakers and people involved in Iowa's water quality improvement efforts. This voluntary, farmer-led effort started in 2005 and serves as a model for the Midwest. It uses an incentive structure and performance measures to help farmers target practices and management strategies that have lowered nutrient concentrations in the Hewitt-Hickory Creek. The tour agenda: At 1:00 pm board the air-conditioned tour bus and travel through the watershed viewing some of the practices installed during the 10 years of the project. Stop 1 is near stream monitoring site and will discuss challenges and accomplishments of the farmer-led approach. Stop 2 is at one of the watershed's denitrifying bioreactors. Next the bus travels through the livestock dense watershed to view several large scale projects. Stop 3 is at one of the many cattle feedlots in the watershed to hear about producer changes in nutrient management. Then return to the Pape farm for a light lunch and a short Q & A opportunity. For more information and to RSVP a seat on the bus contact Chad Ingels, 563-425-3233, ingels@iastate.edu  https://hewittcreek.wordpress.com/

Aug. 5, Progressive Ag Safety Day, Dairy Center, Calmar
9:30 AM to 2:30 PM, ages 4 to 12 covering safety topics with animals, ATVs. Electrical, fire, first aid, lawnmower, machinery, and sun. Cost is $5, includes lunch, ice cream, T-shirt and goody bag. Pre-registration required, contact Gloria Reiter, 888-844-6322 or 563-557-0354 or reiterg@nicc.edu

Aug. 10-21, Farmland Leasing & Land Values Meetings, many locations in Northeast IA
Times vary by location, 2.5 hour meeting covering updates on land value and rental rate surveys, types of farmland lease arrangements, determining fixed and flexible cash rents, landlord-tenant communication, terminating a farm lease and other resources including a comprehensive workbook. Pre-registration $20, $25 for walk-ins. Pre-register by calling the phone number listed for the location. Meetings in addition to those listed below are at: http://www.extension.iastate.edu/agdm/info/meetings.html
Aug. 10, starts 9:00 AM, Fayette Co. Extension office, 218 S. Main St., Fayette. 563-425-3331.
Aug. 11, starts 9:00 AM, Osage, VFW, 3693 Hwy 218, 641-732-5574.
Aug. 12, starts 1:30 PM, Allison, Butler Co. Extension office, 320 N. Main St., 319-267-2707
Aug. 12, starts 1:30 PM, Cresco, Howard Co. Extension office, 132 1st Ave. W., 563-547-3001.
Aug. 12, starts 6:30 PM, New Hampton, Chickasaw Co. Extension office, 104 E. Main St., 641-394-2174.
Aug. 13, starts 9:00 AM, Calmar, Dairy Center, 1527 Hwy 150 S., Rm 115, 563-382-2949.
Aug. 17, starts 9:00 AM, Charles City, Floyd Co. Extension office, 112 N. Main St., 641-228-1453.
Aug. 20, starts 6:30 PM, Elkader, Freedom Bank, 210 S. Main St., 563-245-1451.
Aug. 21, starts 9:00 PM, Dyersville, Kennedy Library, 320 1st Ave., E., 563-583-6496.

Aug. 11, TQA and PQA Plus Certification, Manchester
12:30 to 3:00 pm for TQA
3:15 to 6:00 pm for PQA Plus
The Iowa Pork Producers Association, ISUEO & IPIC are teaming up to offer PQA Plus certification at no charge. To pre-register or for more information, contact IPPA at (515) 225-7675 or e-mail dricheson@iowapork.org

Aug. 12-27, Farmer Workshops on Interpreting Soil and Manure Tests
ISU Extension agronomists and dairy specialists are offering workshops to fine-tune soil nutrient management programs. “We will take a step-by-step approach on how to read a soil test and determine fertilizer needs,” said Brian Lang, agronomist with ISU Extension. “We’ll interpret manure tests to determine how much of the crop nutrient needs can be met with manure applications. This knowledge will optimize on-farm resources, and likely reduce commercial fertilizer costs while increasing producer income.” It’s a 2-hour workshop that starts promptly at 10:00 AM, with the first hour-plus on step-by-step instructions working through soil and manure tests, and the remaining time mostly for questions and answers. Participants may bring along recent soil and manure tests from their farm operations for interpretation. There are nine workshop dates and locations available in August. The program is free, but seating is limited so please call ahead to make your reservation. For more information or to make reservations, contact the local Extension County office or visit www.extension.iastate.edu/content/county-offices

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Thur., Aug. 27 – Clayton Co. Extension office, Elkader, 563-245-1451

Aug. 18, CSIA Preparation Session
1:00 to 5:00 pm, Delaware Co. Extension Office,

Aug. 18, Pasture-Walk Grazing Event, Calmar
10:30 AM at the Jim Hageman farm, 1459 Hwy 150, Calmar (just a couple of miles south of Calmar on Hwy 150). The event will highlight assessing brown mid-rib sorghum (BMR), BMR sudan grass & BMR grazing corn for grazing efficacies & economics during the summer slump and/or harvesting it for winter feed.

Aug. 19, Crops Field Day at the ISU Northeast Research Farm, Nashua
1:00 to 4:15 PM, begins with Chad Hart, ISU Extension Grain Market Specialist, discussing grain market trends and providing a market forecast; followed by Ram Shrestha, ISU Entomologist, to cover the latest research on corn rootworm resistance; then Mahdi Al-Kaisi, ISU Extension Soil Management Specialist, will address soil health issues in crop production; and Mark Licht, ISU Agronomist, will discuss corn and soybean growth and development along with other crop production issues. The field day is free and open to the public. It starts at the Borlaug Learning Center Headquarters on the ISU Northeast Research 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 are available (1 SW, 1 PM, 1CM, 1 PD). For more information about the event, call Brian Lang at 563-387-7058.

Aug. 21, Conservation Biological Control Short Course, Boone
The ISU Field Extension Education Lab near Boone is offering a one day - 9:00 AM to 4:00 PM program on Farming with Beneficial Insects. Details are provided at the following link:  http://events.r20.constantcontact.com/register/event?oeidk=a07eba4srk46a7a4f4f&llr=tnjebdhab

Iowa State University Extension and Outreach programs are available to all without regard to race, color, age, religion, national origin, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Compliance, 3280 Beardshear Hall, (515) 294-7612. Cooperative Extension Service, Iowa State University of Science and Technology, and the United States Department of Agriculture cooperating.

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