CROP NOTES for July 27, 2015
Past issues of Crop Notes are posted at:
http://www.extension.iastate.edu/winneshiek/page/crop-notes-brian-lang

Iowa State University Extension Information for Northeast Iowa
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CORN
Growing Degree Days (GDD), Growth & Development
Northeast IA is currently anywhere from 1,250 to 1,450 GDD from May 1 to today depending on location, which is 3 to 4 days behind the long-term normal. Average GDD through July and into early August is 22 per day. To determine GDD for any given period of time, go to: 

Most corn is R1 stage (silking). The following website describes the approximate timeline and description for each reproductive stage:  http://www.agronext.iastate.edu/corn/production/management/growth/yield.html Mark the silk dates for each field on your calendar as a guideline to help determine future stages. R3 will occur about 19 days (about 400 GDD) after R1. Significant kernel abortion can occur between R1 and R3. At R3 few additional kernels abort. If significant stress occurs during or after R3, it affects kernel fill. Not until R3 (with no more kernels aborting) is it possible to estimate yield (counting kernels). There are a few different methods for this. A popular one is described at:  https://www.agry.purdue.edu/ext/corn/news/timeless/YldEstMethod.html

SOYBEANS
Growth and Development
Most soybean fields are around R2 stage (full flower) to R3 stage (beginning pod), with some of the earliest planted fields just reaching R4 stage (full pod). Soybean stages are illustrated and defined at:  http://extension.agron.iastate.edu/soybean/production_growthstages.html

OATS
The Art of Swathing by Jochum Wiersma, Small Grains Specialist, University of Minnesota
Swathing or windrowing of wheat, barley and oats was, at one time, the default operations that signaled the beginning of harvest. The primary purpose of swathing is to speed up and even out the dry down of the crop. Swathing always posed a risk as grain in the swath is more prone to preharvest sprouting if threshing is delayed due to adverse weather. Therefore, most wheat and barley is now straight cut because modern varieties allow for it. Preharvest applications of glyphosate have further reduced need to swath wheat. In oats, swathing remains more common place.
Swathing is becoming, however, something of a lost art. First, you have to decide when the crop is ready to be swath. The optimum time to swath is when the crop has reached physiological maturity. This is the same time to consider the application glyphosate. This is the point in the development when the crop has reached its maximum dry weight and the grainfill
period has come to an end. Moisture content of the grain will vary but the ranges from 30 to 40 percent. In the absence of a moisture meter, there are other cues that signal the crop has reached physiological maturity. One of the easiest is to look at the color of the uppermost internode, or peduncle. The upper most portion of the peduncle, just below the spike or panicle, will have turned very light green to yellow when the crop reaches physiological maturity (defined below). There still may be some green in the canopy below or in the glumes but the least mature kernels will no green left in them, when threshed out by hand.

Swathing before the crop reaches physiological maturity will result in yield and test weight losses and green kernels in the harvested grains. The losses get progressively worse the earlier you cut the crop. Research at NDSU in spring wheat and durum showed that swathing the grain at 45 percent moisture caused a to 2-pound reduction in test weight and about a 10 percent reduction in grain yield. Swathing after physiological maturity increases the risk of shattering and will equally cause yield losses but no losses in grain quality. Shattering losses can be reduced by swathing in the early morning or late evening when some dew is present in the crop.

**How to Identify Physiological Maturity**
The loss of green from the uppermost internode or peduncle indicates maturity. The uppermost portion of the peduncle, just below the spike, will have turned very light green or yellow at physiological maturity (i.e. wheat in photo below). At this time, transportation of water and nutrients to the head has been cut off and the crop has reached maximum grain fill.

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**FORAGES**

**Plan Now for Late Summer Seeding – Repeat from Last Week**
The best timing for late summer establishment of alfalfa or pasture is in August. 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 tend to first show up at the
base of corn plants around August 1. 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 first beetles are showing up. Always scout corn at initial silk stage (R1) to be sure that silks are exposed for pollination. Excessive silk clipping by corn rootworm beetles (and Japanese beetles) must be responded to ASAP to allow for pollination. This problem is usually limited to later planted corn silking in August, but at times when we have had failures of corn rootworm control such as with Bt-resistant corn rootworm where silk clipping in late July was also significant. At this time I have not seen any problems, in fact corn rootworm beetle numbers have been quite low.

**Green Cloverworm & Other Defoliators**
In a few fields, I noticed higher than normal populations of Green cloverworm with up to 15% of plants infested, although these populations are still low relative to threshold levels. It seems like a lot, but a normal stand (30-inch row width) has 8 to 10 plants per foot. So 15% is about 1.5 Green cloverworm per foot. The following article states the threshold is 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) Or rather than trying to count insects, just use the defoliation threshold level of at least 20% (pictures of defoliation levels are included in the article). This 20% would include all defoliators including grasshoppers, Japanese beetles, other caterpillars, etc. Here is a recent ICM News article commenting on additional defoliators in soybeans: [http://crops.extension.iastate.edu/cropnews/2015/07/mix-soybean-defoliators-summer](http://crops.extension.iastate.edu/cropnews/2015/07/mix-soybean-defoliators-summer)

**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**
This insect continues to increase in my field location near Decorah, from 17% infestation last week to 37% infestation this week, but still only averaging 8 aphids/plant. This level continues
to be on the low side compared to those past years that turned into a problem (see attachment). Similar numbers continue to be reported in southwest WI and southern MN. West central MN has a hot spot of significant activity as indicated by their blog: [http://nw-minnesota-crops.blogspot.com/2015/07/its-time-to-keep-track-of-soybean-aphid.html](http://nw-minnesota-crops.blogspot.com/2015/07/its-time-to-keep-track-of-soybean-aphid.html), however, this is a drier region that is also beginning to have some spider mite issues. Regardless of the rather low numbers that I am finding, it is time for all soybean growers to begin 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 spreading throughout the plants.

**Spider Mites**

Last week I noticed some corn and soybeans on light soils exhibiting mid-day drought stress (Fort Atkinson-Waucoma area). I did not notice any spider mite problems and at this time I am not too concerned, but if the weather enters into a dry spell, this is another pest to scout for.

**LEAF DISEASES**

**Corn – Repeat from Last Week**

This is a repeat of last week’s Crop Notes as little has changed from last week, but it’s time to scout.

*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. *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:** We can scout for disease anytime now no matter what the crop stage. When the silks have emerged we are technically at R1 stage, however, in most fields silks emerge before tassel emergence is complete, and before the final leaves have fully developed. Let’s wait for complete tassel emergence before we begin foliar fungicide applications.

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.

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 (while the right kind of weather is critical for development of a given disease, weather prediction for the span of a month or so is typically not all that accurate). NCLB and Eyespot prefer a cooler than normal summer, while GLS prefers warm and very humid conditions.
Soybeans – Repeat from Last Week
I still find more Bacterial Blight and remnants of contact burn herbicide than I do for Septoria brown spot. While Bacterial blight can reduce yield, a foliar fungicide is no help. Take notes and consider other management in the future. http://extension.agron.iastate.edu/soybean/diseases_bblight.html Septoria brown spot can also reduce yield, but it’s only a concern if the disease advances into the mid- to upper canopy this time of season. Here’s some brown spot photos, early stage at http://iasoybeans.mobi/publications/diseases/foliar/septoria_brown_spot.php and more severe at http://msue.anr.msu.edu/news/more_septoria_brown_spot_in_soybeans_in_some_areas. Its normal to find brown spot in the lower canopy. Don’t confuse this with contact herbicide burn (mostly from the Diphenylether herbicide family of products including Cobra, Phoenix, Flexstar, Reflex, Blazer…). Here’s a few photos of the chemical burn: Mild injury at 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/. Depending on what you find, R3 stage is good timing for a fungicide application for this disease.

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

- Tues., Aug. 18 – Allamakee Co. Extension office, Waukon, 563-568-6345
- 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
- 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](https://ag.purdue.edu/btny/weedscience/Documents/Adjuvant.pdf)

EVENTS
July 29, Crop Development and Pest Update Session near Saratoga
9:30 to 11:30 AM. In association with the Howard County Experimental Farm, Riceville FFA and Howard County NRCS, there will be a presentation on corn and soybean crop growth and development and a discussion on current insects and diseases from Brian Lang, ISU Extension Agronomist, plus an update on the local climate data collection site from the NRCS. The Howard County Experimental Farm is on Hwy 9, just 3.5 miles west of Davis Corners (Jct. of Hwy 63 & Hwy 9), or 1.5 miles east of Saratoga. Free CCA credits 0.5 SW, 0.5 CM, 1 PM.

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/](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, lawn mower, 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. 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
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, Manchester. http://www.iowapork.org/common-swine-industry-audit-training-sessions-offered/

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=a07eba4srk46a7a4f4f4f&llr=tnjebhdab

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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