

IOWA STATE UNIVERSITY

Extension and Outreach

CROP NOTES for July 21, 2020

Iowa State University Extension Information for Northeast Iowa

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Past issues of Crop Notes are posted at:

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

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GROWTH & DEVELOPMENT

Corn

- Our current weather continues to add about 3 leaves per week. The upper most ear shoot will dominate forming at node 13 on the plant \pm a node.
- V15 - The potential number of kernels per row are still being determined, but is nearly complete. Potential kernels per ear are usually in the range of 700 to 1,000, but kernels per ear at harvest are usually around 450 to 550.
- V18 – The plant has reached about 35% of total dry matter accumulation and internode elongation is nearly complete.
- VT-R1 – With silks emerging before tassels are completely emerged, modern corn hybrids reach R1 stage before VT stage. However, wait on foliar fungicide applications until VT stage is complete (tassels completely emerged).

Soybeans

- R2 - open flower on 1 of the 2 upper most nodes on the main stage with a fully developed leaf. The end of R2 is the cutoff for glyphosate application. It takes about 9 to 10 days to get to R3.
- R3 - has a 3/16-inch long pod at 1 of 4 uppermost nodes on the main stem with a fully developed leaf. A decision on whether or not to apply a foliar fungicide is usually made during this stage. It takes about 9 to 10 days to get to R4.
- R4 - has a 3/4-inch long pod at 1 of 4 uppermost nodes on the main stem with a fully developed leaf. It takes about 10 to 11 days to get to R5 (initial seed fill stage).
- About two-thirds of total plant leaves petioles & stems develop between R2 to R5 stage (about a 4 week period).
- Soybean yield potential is most sensitive to stresses during R4 to R5.5

Wind & Hail Damage from July 9 & July 11 Storms

Information was included in the July 13 Crop Notes.

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

INSECTS

Corn Rootworm

As corn fields approach VT-R1 stages it's time to scout silks for clipping by corn rootworm beetles (Fig. 1) and/or Japanese beetles (Fig. 2). The greater risk to silk clipping is with the later planted, later developing fields. During pollination it is important for ears to maintain at least ½-inch of silk to accept pollen. After pollination, silk length is not important.



In addition to checking for silk clipping, the last half of July is a good time to dig roots and evaluate corn rootworm injury. Did plants lodge because of high winds, or was it actually corn rootworm larvae feeding, or both. Here's a pdf card description of the node-injury scale and a couple of links to additional information: <https://ipcm.wisc.edu/download/pubsPM/Corn-rootRate-card2015hx.pdf>

Those that also monitor corn rootworm beetles with sticky traps would start this activity at R1 stage. FYI, here's a news article on sticky trap protocol: <https://crops.extension.iastate.edu/cropnews/2016/06/guidelines-using-sticky-traps-assess-corn-rootworm-activity>

Japanese Beetles

The greatest threat is to ornamentals (roses, Linden trees, etc.) and garden crops (raspberries, green beans, etc.). On occasion into later July and August this insect has caused sufficient defoliation (>20% defoliation) along the outer rows of some soybean fields to warrant treatment. This is especially true south of Hwy 3 and with greater activity into east central Iowa. It's a very mobile insect so control with an insecticide application is often temporary.



Leaf Defoliators in Soybeans

It does not matter whether defoliation is from Japanese beetles, Bean Leaf Beetle, Grasshoppers or Caterpillars (Green cloverworm, Loopers, Thistle caterpillar). If defoliation is >20%, then the field is over threshold. The following link provides an illustration to help you define percent

defoliation: <https://blog-crop-news.extension.umn.edu/2019/08/defoliating-insects-still-making-their.html>

Potato Leafhopper (PLH)

Continue scouting through August. Scouting and management tips are available at: <http://www.extension.iastate.edu/CropNews/2009/0615hodgson.htm> The only way to properly scout for PLH is with a 15-inch diameter sweep net.

Soybean Aphid

Our typical window for scouting of soybean aphid in northeast Iowa is mid-July through August. Speed scouting is the preferred method for scouting. It's simple and quick. A free scouting card with instructions is available at:

https://www.ent.iastate.edu/soybeanresearch/files/page/files/2009_speed_scouting_blank_form.pdf

FYI, here's my aphid counts per week for 100 random plants in a local field near Decorah. This field and one other that I have been scouting have a considerably higher infestation than for all other fields that I have scouted in the area. There are always a few 'hot spots' relative to the general pest distribution, thus another reason to scout rather than just treat a field with an insecticide.

Date	Crop stage	% infestation	Avg. aphids/plant of infested plants
June 30	V5	19	4
July 6	R1	31	5
July 13	R3	62	7
July 20	R4	96	12

Threshold is >80% infestation with >250 aphids/plant.

Soybean Gall Midge

An eastern Nebraska - western Iowa problem so far, but slowly spreading farther. As you scout for other issues in soybeans, keep an eye out for a swelling or discoloration of the lower stem. The midge larvae would be under the epidermis. See the following link for photo ID: <https://crops.extension.iastate.edu/cropnews/2020/07/soybean-gall-midge-larvae-active-iowa> . Infested plants will quickly wilt and die or break off at the site of feeding. If you find this pest in northeast Iowa, please let me know.

Western Bean Cutworm (WBC)

This insect became somewhat problematic in northeast Iowa in the mid-2000's, and then lessened to just an occasional spotty pest. Currently, only the VIP3A protein (Agrisure Viptera, Leptra, and Trecepta) provides reliable protection against WBC (Handy Bt Trait Table https://agrilife.org/lubbock/files/2020/02/BtTraitTable_FEB_2020.pdf). The Cry1F protein has provided about 80% protection against WBC in previous years, however, this protein has lost efficacy in the last 10 years due to the development of resistance. For corn hybrids that do not provide Bt control of WBC, there is a scouting method timed from about V15 until VT stage. Inspect the upper 3 to 4 leaves on 20 consecutive plants at 5 locations. A nominal threshold is 8% of the plants with eggs or young larvae found on the flag leaf or in the tassel during the silking/blister/early milk-stage corn stages (R1-early R3). If the eggs have hatched, the

insecticide should be made after 95 percent of the plant tassels have emerged, but before larvae enter the silks. If the eggs have not hatched and plants have tasseled, time the insecticide to when most of the eggs are expected to hatch. Eggs that are dark purple will hatch in 1–2 days. If larvae have already moved into the ears, insecticide applications will not be effective. FYI, publication on WBC with color ID of eggs and larva. <https://store.extension.iastate.edu/product/12641>

2nd Generation European Corn Borer (ECB)

If you did not use a ECB Bt-traited hybrid, consider scouting for 2nd generation ECB during the VT-R2 period. Its one of the more difficult insects to scout for. The method, photos of egg masses, and economic threshold are all nicely explained in the following publication: <https://store.extension.iastate.edu/product/15141>

Scouting method: Egg laying usually occurs over a 20-day period beginning at VT–R1 (pollen shedding). Determine the number of egg masses per plant. Mark off 20 plants in a row. Repeat this procedure at 4 more locations in the field. This will give a total of 100 plants scouted for egg masses. Count only egg masses on the ear and middle 7 leaves (ear leaf and 3 leaves above and 3 leaves below). Eggs will primarily be on the underside of the leaves. Calculate the expected number of larvae per corn plant, use the cost-benefit analysis forms in Tables 4–5 in the publication, and determine if control measures are economically justified.

Bird Cherry-Oat Aphid in Corn

This little researched pest is extremely spotty and on the rare-side to cause any problems, but select fields have had some problems. Since 2009, the greatest occurrence of this pest has been in a region around Riceville to Protivin. The aphid population starts at the base of the corn plants in late July to early August. As it increases in population it moves up to the ear. Scouting is fairly easy in that you can occasionally focus on the lower stalk as you scout for other pest activity in corn (foliar diseases, silk clipping). Lack of research does not provide us with a good economic threshold, but if the aphid activity reaches the ear (i.e. >500 aphids/plant), it is probably a treatable situation with a foliar insecticide.





early August



mid-August

DISEASES – repeat from last week

Scouting Corn for Leaf Diseases

As corn fields approach VT-R1 stages it's time to scout for leaf diseases.

Of particular importance is:

- Gray leaf spot (GLS), ID: <https://cropprotectionnetwork.org/resources/articles/diseases/gray-leaf-spot-of-corn>
- Northern corn leaf blight (NCLB), ID: <https://cropprotectionnetwork.org/resources/articles/diseases/northern-corn-leaf-blight-of-corn>
- Tar Spot (TS), Fact sheet: <https://crop-protection-network.s3.amazonaws.com/publications/tar-spot-filename-2020-05-12-175731.pdf>

I have been finding low levels of GLS in many fields. I have yet to find NCLB and TS.

Scout for the presence of lesions for any of the above three diseases. A foliar fungicide is justified if:

- any disease lesions from these three diseases are present on 50% or more of the plants in the field,
- the weather forecast for August is favorable for disease development,
- the hybrid is not rated resistant to moderately resistant for that disease (resistant hybrids can still show signs of leaf disease, but the disease fails to significantly advance),
- and product cost vs. grain market price is reasonable to assume a profit could be achieved.

Other corn leaf disease of some concern or not:

- Southern corn rust does not over winter in Iowa and has rarely been a concern for northeast Iowa, but it can be under the right conditions. We can follow its progression from the southern U.S. on the IPM PIPE Network:
<https://corn.ipmpipe.org/southerncornrust/> Fact sheet: <https://crop-protection-network.s3.amazonaws.com/publications/southern-rust-filename-2019-08-28-140616.pdf>
- Common rust is quite common in northeast Iowa, but a minimal threat to yield. ID: <https://cropprotectionnetwork.org/resources/articles/diseases/common-rust-of-corn>
- Eyespot is also quite common in northeast Iowa and is an occasional threat, but only under the most optimal conditions. ID: <https://cropprotectionnetwork.org/resources/articles/diseases/eyespot-of-corn>

I can find Eyespot and Common rust in nearly every field, but have not yet found any Southern corn rust.

Efficacy Ratings for Corn and Soybean Foliar Fungicides

In other words, which products are rated best on which diseases.

Corn: <https://crop-protection-network.s3.amazonaws.com/publications/fungicide-efficacy-for-control-of-corn-diseases-filename-2020-03-18-150007.pdf>

Soybeans: <https://crop-protection-network.s3.amazonaws.com/publications/fungicide-efficacy-for-control-of-soybean-foliar-diseases-filename-2020-03-18-150123.pdf>

EVENTS

July 21 & 23, Essential Row Crop Management Webinar Series

Each free webinar starts at 1:00 PM with a 15 minute discussion followed by time for Q&A. Sessions will be limited to 30 minutes.

- July 21, Corn rootworm management with Ken Ostlie, professor and extension entomologist, University of Minnesota.
- July 23, Soybean gall midge update with Justin McMechan, professor and extension crop protection and cropping systems specialist, University of Nebraska, Lincoln.

For more information about the series and to register, go to: <https://extension.umn.edu/courses-and-events/essential-row-crop-management-online> Once you register, you will be able to watch any of the webinars. Also, a recording of each session will be posted after the webinar series concludes, with no registration necessary.

July 22, Iowa Learning Farm Webinar on Conservation Agronomy of Cover Crops from Start to Finish

Starts at 12:00 PM. Speakers include Dave Schwartz, executive vice president of sales in plant nutrition for Verdesian Life Sciences; Meaghan Anderson, ISU Extension agronomist; and Dr. Eileen Kladviko, professor of agronomy at Purdue University. Topics include managing pests, residuals and herbicides; nitrogen management; and agronomics of cover crop advising. . To connect to the webinar, go to:

<https://iastate.zoom.us/meeting/register/vpIpdeGsrzwo2UBRcgLDwgKkc3wzsEXhqq>

July 23, Iowa Swine Day 2020 Webinar

12:00 to 2:30 PM. Two presentations with online Q&A. The webinar is offered via Webex and can be accessed via any computer or mobile device with internet connection. The program is free but registration is required to receive connection information. Go to:

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

Topic 1 - How Iowa is preparing for a foreign animal disease. Share the work done by the Foreign Animal Disease Task Force at Iowa Pork Producers Association improving the preparedness of pork producers for a foreign animal disease outbreak like ASF. Share the next steps and some lessons learned from that COVID-19 Market Disruptions that will exponentially improve preparedness for pork producers.

Topic 2 - Experiences in COVID-19 diagnostics, and their direct application on the US Pork Industry.

July 28 & Aug. 4, Silage Beef Webinar Series

12:30 to 1:30 PM. Topics include:

- July 28, Tips and tricks for silage pile construction.
- Aug. 4, Silage feeding and management for beef cattle in the current environment.

For more details and registration, go to: <https://www.extension.iastate.edu/news/silage-beef-webinar-series-begins-july-7>

Aug. 10-14, RUSLE2 Soil Loss Workshop On-Line

This 5-day workshop is designed to train livestock producers and service providers on how to use RUSLE2 and the Iowa Phosphorus Index in nutrient management and manure management plans. Each day will be a Zoom session from 2:30 to 4:00 PM. The class is limited to 15 participants. Pre-register by Aug. 5 for \$150. The class qualifies for 6 SW and 1 NM Crop Advisor Credits. Details about the program and links for registration and Zoom software are available at: <https://www.extension.iastate.edu/news/rusle2-soil-loss-workshop-sessions-will-be-offered-online>

Aug. 10 & 14, Farm Leasing & Management Webinars for Northeast IA

Free 90-minute webinars, but pre-registration is required at least 24 hours prior to the webinar.

Monday Aug. 10 from 6:00 to 7:30 PM, register at:

<https://register.gotowebinar.com/register/9083678393274286091>

Friday Aug. 14 from 9:30 to 11:00 AM, register at:

<https://register.gotowebinar.com/register/8121407806877403403>

Topics include:

- Farmland management issues
- Legal aspects of farmland leases and terminating a lease
- Cash rental rate and farmland value survey results
- Cost of production considerations
- Methods for determining fair 2021 cash flexible rent
- Tenant – landlord communication
- Submit questions by virtual chat

More information at: <https://iastate.app.box.com/s/n6kdtljqsvvm9pnmgag0c0lhpapwxb2h>

Other meetings across the state at: <https://www.extension.iastate.edu/agdm/info/meetings.html>

Aug. 11-13, Beef Feedlot Short Course, Ames

At the Hansen Agriculture Student Learning Center in Ames. The short course is designed specifically for feedlot managers, employees and industry. The \$350 per person registration fee includes program materials and meals listed on the agenda. The registration deadline is midnight, Aug. 4 or when the course limit of 30 is reached, whichever occurs first. All registrations must be done online. See the short course website for registration, requirements, and other information at: www.aep.iastate.edu/feedlot The event will follow ISU guidelines to ensure health and safety of all participants. Nearly half of the program is on-farm with other sessions at the ISU Beef Nutrition Farm and Couser Cattle Company in Nevada, Iowa. The program runs from 12:30 PM on Tuesday, Aug. 11 through noon on Thursday, Aug. 13.

Topics include:

- Bunk management and the basics of starting cattle on feed.
- Feed mixing demonstration and evaluation.
- Managing and identifying cattle health issues in the feedlot.
- Facility design and cattle handling.
- Data management.

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