

# IOWA STATE UNIVERSITY

## Extension and Outreach

### **CROP NOTES for July 13, 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

- After V10, corn develops a new leaf every 56 GDD. Our current weather is adding about 3 leaves per week. All ear shoots are initiated (around 8 to 10 of them) but the upper 2 ear shoots will dominate, and eventually 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.

### 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.

### Wind Damage to Corn from July 9 & July 11 Storms

Damage is related to hybrid, row direction relative to wind direction, and growth stage.

Hopefully all fields will have time to upright themselves before pollination. We can divide wind damage into 3 categories:

1. Above ground corn canopy leaning. After a couple of days, the upper portions of these plants will resume vertical growth.
2. Root lodging - corn plants lying down with roots exposed out of the ground to varying degrees. These plants will also work to upright themselves, but with more significant goose-necking. Degree of root exposure adds stress limiting nutrient and water uptake. Research from the University of Wisconsin showed yields reduced 2-6% when corn was lodged from V10-V12, 5-15% when corn was lodged from V13-V15, and 12-31% when corn was lodged on or after V17. In addition, expect goose-necked plants to slow harvest and possibly add to the yield loss. Most of the crop was in the V13-V15 stages at the time of the storms.
3. Greensnap - corn plants broken over. Yield loss from greensnap is quite clear at a one to one relationship. A field with 10% greensnap would likely have a 10% yield reduction. This is because most corn plants have finished determining potential ear size, leaving them unable to compensate for stand loss at this point in the season. Plant orientation and plant populations are important factors in understanding greensnap. With high plant

densities, leaves tend to orient perpendicular to the row rather than parallel. Plants whose leaves are oriented perpendicular to the row are more likely to break than other plants when strong winds come in perpendicular to the rows. This is likely why we seldom have greensnap events (from straight-line winds) that affect both north-south and east-west rows. Plant breakage will typically occur in one row orientation or the other but not both. In the event of greensnap, producers should immediately notify their crop insurance providers of the damage and see what compensation or coverage is available to them.

## Hail Damage to Corn, Soybeans, Small Grains, Forages

### Corn & Soybean

Saturday across much of northeast Iowa were +60 mph winds and hail. Hail damage assessments for corn are straight forward with % defoliation. For soybeans, its more complicated with assessments that include calculations of percent lost plants, percent cut nodes, and evaluation of stem bruising. The formulas for this assessment is included in the *Loss Adjustment Standards Handbooks*. You can download a copy of these at:

- *Soybean Loss Adjustment Standards Handbook*: <https://www.rma.usda.gov/-/media/RMAweb/Handbooks/Loss-Adjustment-Standards---25000/Soybeans/2019-25440-Soybeans-Loss-Adjustment-Standards-Handbook.ashx>
- *Corn Loss Adjustment Standards Handbook*: <https://www.rma.usda.gov/-/media/RMAweb/Handbooks/Loss-Adjustment-Standards---25000/Corn/2019-25080-Corn-Loss-Adjustment-Handbook.ashx>

The RMA handbooks can be a bit overwhelming. If you just want a simple publication covering the basics on hail damage to corn and soybeans, please download these free pdf copies from ISU Extension:

- *Hail on Corn in Iowa*: <https://store.extension.iastate.edu/product/14776>
- *Hail on Soybean in Iowa*: <https://store.extension.iastate.edu/product/14792>

**Small grains** (oats, wheat, rye, etc.) damage depends on the growth stage and degree and type of damage. The University of Wisconsin explains this in the following article: <http://corn.agronomy.wisc.edu/WCM/W075.aspx>

**Forages** - damage also depends on the growth stage and degree and type of damage. The University of Wisconsin explains this in the following article: <https://fyi.uwex.edu/forage/how-to-manage-hail-damaged-alfalfa-and-red-clover/>

## INSECTS

### Corn Rootworm

As corn fields approach VT-R1 stages over the next 2 weeks, its time to scout silks for clipping by corn rootworm beetles (Fig. 1) as well as Japanese beetles (Fig. 2). Although 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, these next two weeks are 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 serious 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](https://www.ent.iastate.edu/soybeanresearch/files/page/files/2009_speed_scouting_blank_form.pdf)

The current weather pattern of hot and dry is NOT favorable for soybean aphid growth and reproduction.

FYI, here's my aphids counts per week for 100 random plants in a local field near Decorah. Threshold is  $\geq 80\%$  infestation with  $\geq 250$  aphids/plant.

Date	Crop stage	% infestation	Avg. aphids/plant of infested plants
June 9	V1	1	1
June 18	V3	6	21
June 23*	V4	6	4
June 30	V5	19	4
July 6	R1	31	5
July 13	R2	62	7

\*5 inches of rain that fell from June 19 through June 22. High rain events have been known to adversely affect aphid populations.

### 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://agriflife.org/lubbock/files/2020/02/BtTraitTable\\_FEB\\_2020.pdf](https://agriflife.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 now 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>

## DISEASES

### Scouting Corn for Leaf Diseases

As corn fields approach VT-R1 stages over the next two weeks, its 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>

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>

## 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>

## WEEDS

### Herbicide Injury Issues in Soybeans

- *Dicamba 2020: What went wrong in Iowa?* by Bob Hartzler & Prashant Jha  
<https://crops.extension.iastate.edu/blog/bob-hartzler-prashant-jha/dicamba-2020-what-went-wrong-iowa>
- *Dicamba: What does the research say?* by Bob Hartzler  
<https://crops.extension.iastate.edu/blog/bob-hartzler/dicamba-what-does-research-say>
- *Differentiating 2,4-D and Dicamba Injury on Soybeans* from Purdue University  
<https://ag.purdue.edu/btny/weedscience/Documents/WS-56.pdf>
- *Identifying Common Herbicide Symptoms in Soybean* from ISU Extension  
<https://crops.extension.iastate.edu/blog/bob-hartzler-meaghan-anderson/identifying-common-herbicide-symptoms-soybean>

Complaints of suspected herbicide drift or pesticide misuse should be filed with the Iowa Department of Agriculture and Land Stewardship at 515-281-8591. Their brochure on *Pesticide Investigation and Enforcement* is available at:

<https://iowaagriculture.gov/sites/default/files/pesticides/Pesticide%20Investigation%20and%20Enforcement%20Printable.pdf>

## UPCOMING EVENTS

### July 14, 16, 21, and 23, Essential Row Crop Management Webinar Series

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

- July 14, Tar spot identification and in-season management with Alison Robertson, professor and extension plant pathologist, Iowa State University.
- July 16, Soybean aphid IPM with Erin Hodgson, professor and extension entomologist, Iowa State University Extension and Outreach.
- 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 14, 28, Aug. 4, Silage Beef Webinar Series

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

- July 14, Making silage under adverse conditions.
- 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>

## July 16 & 23, Iowa Swine Day 2020 Webinar Series

12:00 to 2:30 PM. Each webinar provides two presentations with online Q&A. The webinars are 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/>

Topics include:

- July 16, Topic 1 - 10 ways to reduce wean-to-finish mortality and how to implement them. Wean to finish mortality in challenging times becomes more important than ever. This presentation will give 10 simple steps to improve your grow finish mortality. Topic 2 - Dietary feed technologies to improve pig performance under stress.
- July 23, 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.

## 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>

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