CROP NOTES for July 13, 2017
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 UPDATE

Winds on Lodging & Greensnap

The Tuesday night storm affected some corn fields in northeast Iowa.

1. The upper part of the corn canopy is leaning
   a. Plants leaning with minor root lodging should stand back up with relatively little issue on standability and yield.

2. Root lodging - corn plants lying on the ground with roots pulled out of the ground
   a. There may be yield loss associated with the root lodging, but research shows it to be in the 0-30% range up to R1 stage corn (50% of plants silking).
   b. Yield losses are greater with events happening closer to R1.
   c. Here’s an article discussing effects of corn root lodging: [http://crops.extension.iastate.edu/corn/production/management/mid/silking.html](http://crops.extension.iastate.edu/corn/production/management/mid/silking.html)

3. Greensnap - corn plants broken over at a node
   a. Yield loss is directly related to % greensnap. *i.e.* 10% greensnap = roughly a 10% loss in yield.
   b. You can read more about this at: [http://crops.extension.iastate.edu/corn/production/management/mid/greensnap.html](http://crops.extension.iastate.edu/corn/production/management/mid/greensnap.html)

Flooding

Information about flooded crops was posted in the June 29 Crop Notes. [http://www.extension.iastate.edu/winneshiek/sites/www.extension.iastate.edu/files/winneshiek/CropNotes/CROPNOTESJune292017.pdf](http://www.extension.iastate.edu/winneshiek/sites/www.extension.iastate.edu/files/winneshiek/CropNotes/CROPNOTESJune292017.pdf)

Figure 1 below. Shows rainfall for the last couple of days was very heavy in Clayton and northern Dubuque Counties.
Figure 2 below. Shows rainfall for the last 30 days. Normal rainfall for this period is about 5 inches.

And... as you listen to crop reports, you keep hearing about droughty conditions. The latest Drought Monitor map shows about 1/3 of Iowa rated abnormally dry to moderate drought. [http://droughtmonitor.unl.edu/](http://droughtmonitor.unl.edu/)

**GROWTH & DEVELOPMENT**

**Corn**
- From V11 to VT, a new leaf appears every 56 GDD.
- Normal GDD in northeast Iowa for July averages ~22 per day; a new leaf every 2.5 days.
- Accumulated GDD for the season are very close to the long-term normal.
- Tassels will start to peak out of the whorl at around V17 stage, but most corn will develop 21 leaves. VT stage is not until the tassel is fully emerged. For most hybrids, silks are also visible by then. Scout for silk clipping and any signs of leaf disease on the leaf below the ear leaf on up the plant. This is the most common timing for foliar fungicide (assuming leaf disease is evident and/or hybrid leaf disease resistance is poor). All leaves should be fully emerged at the time of application to intercept the fungicide. Fungicides only protect leaf tissue that they land on.
Soybean

Most soybeans are R2 stage. A new leaf stage appears about every 3 days in R-stage soybeans.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description of stage</th>
<th>Comments</th>
<th>Time to next stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>open flower at any node</td>
<td>recommended time for foliar applications to control White Mold</td>
<td>just a few days to R2 stage</td>
</tr>
<tr>
<td>R2</td>
<td>open flower at 1 of the 2 uppermost nodes of the main stem</td>
<td>glyphosate is labeled for use on RR soybeans through the R2 stage</td>
<td>about 10 days to R3 stage</td>
</tr>
<tr>
<td>R3</td>
<td>a pod at least 3/16-inch long at 1 of the 4 uppermost nodes of the main stem with a fully developed leaf</td>
<td>most popular stage for foliar fungicide applications other than for White Mold control where R1 stage is recommended, and in some cases R1 + R3 stage applications for White Mold control</td>
<td>about 9 days to R4 stage</td>
</tr>
</tbody>
</table>

INSECTS

Bean Leaf Beetle (BLB)

If 1st generation BLB were to be a problem, they would be noticed now as their 1st generation population should be peaking. A sweep net can be used in soybeans to scout this pest as described in the following web page. [http://crops.extension.iastate.edu/cropnews/2011/08/new-bean-leaf-beetle-threshold-calculator-created](http://crops.extension.iastate.edu/cropnews/2011/08/new-bean-leaf-beetle-threshold-calculator-created) Late August to early September is the peak population window for 2nd generation BLB, but no activity for 1st generation means little activity for 2nd generation.

Corn Rootworm

Larval feeding continues in July. It generally concludes around late July which is when ISU evaluates its rootworm product trials. As you trouble-shoot fields in July for other problems keep this pest in mind. I always travel with a bucket and water jug this time of season to soak root digs. This one page document from Monsanto has some nice photos of larva injury and a very good description of the Universities 0-3 node injury scale. [https://www.cornstates.com/News/NewsDocuments/conducting-root-digs-for-corn-rootworm.pdf](https://www.cornstates.com/News/NewsDocuments/conducting-root-digs-for-corn-rootworm.pdf) Beetle emergence is underway.

As corn begins to silk, scout for silk clipping, although the greatest risk of significant silk clipping is with late planted corn. Scout to make certain there is at least ½-inch of silks out to receive pollen. Finding 5 or more beetles per plant under drought conditions might be enough to keep silks trimmed back too far, but under “normal” conditions as many as 15 beetles per plant could be tolerated. If silk clipping is a threat before pollination is complete, respond quickly with insecticide to still allow time for silk re-emergence and reception of pollen to fertilize the kernels. Once pollination has occurred, it no longer matters if the silks are fed on by insects.

Japanese Beetle

This insect continues to move a bit further north each year. It feeds very well on corn silks, soybean foliage and many other plant species (trees, ornamentals, garden crops). This far north it is very rarely a field wide problem. However, to the south in IL, some corn and soybean fields
have been treated based on feeding pressure of corn silks and soybean leaf defoliation. Here’s an Insect Brief from the University of Illinois: Japanese beetles are back. Reports statewide indicate Japanese beetles are here (and in some locations, in very high numbers). With corn starting to tassel and getting close to tassel, it’s important to remember, even though densities may appear to be extremely high, the average density of beetles across the field may be below levels of economic concern. An insecticidal treatment should be considered during silking if:

- There are 3 or more beetles per ear,
- Silks have been clipped to less than ½ inch, AND
- Pollination is less than 50% complete.

There are usually clusters of Japanese beetles near field edges and if those are the only locations sampled, it will skew the scouting numbers. Insecticidal treatments should be considered when defoliation reaches an average of 20% between bloom and pod fill.

For a few photos of this pest and its feeding damage see: [http://crops.extension.iastate.edu/cropnews/2014/06/japanese-beetles-emerge-iowa](http://crops.extension.iastate.edu/cropnews/2014/06/japanese-beetles-emerge-iowa)

**Leaf Defoliators in Soybeans**

Most common are Bean Leaf Beetle, Caterpillars (Green cloverworm, Loopers, Thistle caterpillar), Grasshopper, Japanese Beetle). Regardless of which ones or all of the above at the same time, we define a threat as >20% defoliation with soybeans in the reproductive stages. The following link provides an illustration to help you define percent defoliation. [http://www.ipm.iastate.edu/ipm/icm/2002/7-29-2002/soydefoliation.html](http://www.ipm.iastate.edu/ipm/icm/2002/7-29-2002/soydefoliation.html) This link provides a nice list of common insects, photos, ID and management tips including the pests listed above. [http://www.ent.iastate.edu/soybeaninsects/](http://www.ent.iastate.edu/soybeaninsects/)

**Potato Leafhopper (PLH)**

This insect is doing very well. My alfalfa trial at the ISU research farm near Nashua showed PHL increase from zero per sweep 3 days after 2nd crop harvest to 2-times threshold 11 days after harvest. Scout for PLH in alfalfa through August. Scouting and management tips are available at: [http://www.extension.iastate.edu/CropNews/2009/0615hodgson.htm](http://www.extension.iastate.edu/CropNews/2009/0615hodgson.htm)

**Soybean Aphid (SA)**

I still have not found a field above threshold. Threshold is >80% of plants with aphids and an average population of 250 per plant. The most I have found is 88% infestation and 50 aphids per plant average. Although you should use the Speed Scouting method for scouting rather than counting all aphids per plant. It’s easier and faster. This method is explained 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) Regardless of me not finding a field above threshold yet, it’s time to scout weekly. We usually find a few high population fields in late July, whereas most of the SA issues do not occur until mid-August.

**Spider Mites**

This insect is never a problem in seasons with regular rainfall. However, they are always worth scouting for in a drought. Other parts of Iowa need to watch for this pest. If interested, here is a link to tips on scouting and treatments: [http://cropwatch.unl.edu/2016/managing-spider-mites-corn-and-soybean](http://cropwatch.unl.edu/2016/managing-spider-mites-corn-and-soybean) In the past, we only used insecticides to control spider mites. Now miticides are also available as control options (Zeal, Oberon, and Onager).
WEEDS
Time to Scout for Palmer
July is a great time to scout for Palmer and other weed escapes. A key feature of Palmer is that a fully developed leaf (leaf blade + petiole) has a petiole longer than the leaf blade. See the ID fact sheet at: http://crops.extension.iastate.edu/files/page/files/crop3105.pdf

DISEASES
Septoria Brown Spot in Soybeans
This disease appears to some degree every year in every field. It starts in the lower canopy. As long as it does not advance up into the mid-canopy or higher in July, it’s not considered a problem. Scout in July to verify if the disease is spreading beyond the lower canopy. If it is, a foliar fungicide usually applied during around the R3 stage can offer effective control. Here’s photos of the early season disease: http://iasoybeans.mobi/publications/diseases/foliar/septoria_brown_spot.php It is sometimes confused with Bacterial blight for which foliar fungicides offer no control: http://www.soybeanresearchinfo.com/diseases/bacterialblight.html Bacterial blight is more likely evident in fields that have received some hail damage. Rating of the effectiveness of most foliar fungicide products on various diseases in soybeans can be found at: https://www.extension.purdue.edu/extmedia/BP/BP-161-W.pdf

Corn Leaf Diseases
As fields begin to expose a tassel, it’s a great time to start scouting for leaf disease. Most of what I have seen so far is Common Rust and a little bit of Eyespot. Common Rust rarely causes significant yield loss in field corn northeast Iowa, but seed production fields are more at risk. Eyespot is a concern, although not considered as great of a threat as Northern Corn Leaf Blight and Gray Leaf Spot. Here’s a link to an article reviewing NCLB fungal symptoms, not to be confused with Goss’s Wilt bacterial symptoms, and includes a link to the January 2017 efficacy tables comparing effectiveness of various products: http://crops.extension.iastate.edu/cropnews/2014/07/northern-leaf-blight-prevalent-iowa

Common Rust
Most hybrids have good resistance to common rust; inbreds do not, thus seed production fields should be scouted and a fungicide applied if disease is present.

Brick-red pustules are oval or elongated, about 1/8 inch long, and scattered sparsely or clustered together. The leaf tissue around the pustules may become yellow or die, leaving lesions of dead
tissue. The fungus survives the winter as spores on corn in the southern United States and central America; spores are carried long distances by wind and eventually reach the Midwest. Rust development is favored by high humidity with night temperatures of 65–70°F and moderate daytime temperatures.

**Eyespot**

The spot is surrounded by a yellow “halo” that can be seen clearly when the leaf is lighted from behind. The disease is more common when corn follows corn. Cool temperatures (60s°F to low 70s°F) favor disease development, thus eyespot may appear early in the season on lower leaves and again near the end of the season on upper leaves.

**Northern Corn Leaf Blight**

Leaf lesions are long (1 to 6 inches) and elliptical, gray-green at first, but then turn pale gray or tan. Under moist conditions, dark gray spores are produced, usually on the lower leaf surface, which gives lesions a “dirty” gray appearance on the surface. Disease development is favored by extended periods (>6 hours) of leaf wetness (rain or dew) and moderate temperatures (64–81°F).

**Gray Leaf Spot**

The leaf lesions are long (up to 2 inches), narrow, rectangular, and light tan colored. Later, the lesions can turn gray. They are usually delimited by leaf veins, but can join together and kill entire leaves. Spores are dispersed by wind and splashing water. Infection of corn leaves and disease development are favored by warm (80s°F), humid (>90% for 12+ hours) weather.

**Physoderma Brown Spot**
Not as wide spread of a disease as the ones listed above, but we are finding more of this disease in recent years. Leaf lesions are numerous, very small (approximately 1/4 inch in diameter), round to oval, yellowish to brown in color and usually occur in broad bands across the leaf. Alternating bands of infected and noninfected tissues are common. Dark purplish to black oval spots also occur on the midrib of the leaf. Symptoms may also occur on the stalk, leaf sheath, and husks. Physoderma brown spot is more prevalent in wet growing seasons.

EVENTS
FARMLAND LEASING MEETINGS
July-Aug., Various Locations, Dates & Times
These are 3 hour workshops, and attendees will receive a 100-page leasing arrangements book. Topics include methods for determining fair cash and flexible rent for 2018; Tenant-landlord communications; Legal aspects of farmland leases including strategies for writing and terminating a farm lease; and various resource aids. Use the following link to find a meeting closest to you. Click on a county and then on both July and August calendars: http://www.extension.iastate.edu/agdm/info/meetings.html Most meetings in northeast IA are in August. Call the local Extension office to register ($20 pre-registration, $25 late registration).

MANURE MANAGEMENT FIELD DAYS
July 26, Iowa Falls
Aug 4, Hills
Noon to 4:00 including lunch. There is no cost to attend a Manure Management Field Day. However, to assist with facility and meal planning we do request that you register using the links below. For details, go to: http://www.aep.iastate.edu/manure/

DEMONSTRATION GARDEN FIELD DAYS
Aug 2, Kanawha
6:30 PM at the Northern Research and Demonstration Farm. Details provided at: http://www.extension.iastate.edu/node/41719
Aug. 5, Nashua
4 PM at the Northeast Research and Demonstration Farm. Details provided at: http://www.extension.iastate.edu/node/41719

FIELD EXTENSION EDUCATION LAB
Aug. 3, Managing Palmer Amaranth in Conservation Plantings, Boone
Registration 8:30 am; Program 8:50 am to Noon at the Field Extension Education Laboratory, 1928 240th Street, Boone, IA. Objectives
Are for participants to be able to develop plans for establishing native plants for conservation plantings, identify weedy amaranthus species, and develop and implement weed management strategies for conservation plantings. This workshop is open to anyone that wants to learn more about managing Palmer amaranth in conservation plantings, particularly NRCS personnel, landowners, crop consultants, and agronomists. For more information and registration, go to: http://www.aep.iastate.edu/feel/palmer.html

Aug. 16, Crop Disease Clinic, Boone
Registration starts at 8:30 am; Program is 9:00 am to 4:00 pm. At the Field Extension Education Laboratory 1928 240th Street, Boone, IA. Objectives: Improve knowledge of corn and soybean disease identification and biology; Understand the principles of IPM and research-based recommendations for Iowa corn and soybean production; Provide hands-on experiences with identification of common corn and soybean diseases. This workshop is open to anyone that wants to learn more about corn and soybean disease management, particularly crop consultants, agronomists or farmers. For more information and registration, go to: http://www.aep.iastate.edu/feel/disease

Aug. 17, SCN and Soybean Aphid Resistance Management Workshop, Boone
8:30 am to 4:15 pm at the Field Extension Education Laboratory 1928 240th Street, Boone, IA. Purpose: A workshop providing research-based recommendations on managing evolving pests in sustainable crop protection. The two most important pests that reduce soybean yield (nematodes and aphids) are evolving, becoming resistant to commonly used pest management tools. This workshop will provide research-based, sustainable pest management recommendations for the control of soybean cyst nematode and soybean aphid. Information provided will include updates on the status of resistant pest populations in Iowa and hands-on demonstrations of sampling and managing both pests. For more information and registration, go to: http://www.aep.iastate.edu/feel/resistance

GRAZING PROGRAMS
July 20, 6:00 to 9:00 PM at the Scott Whitney farm 5704 Caves Rd., Maquoketa (1 mile west of Maquoketa). Whitney installed a managed grazing system including stand improvement, subdivision fences, brush control, and rotational grazing. He will share his experiences. In addition, Lori Schnoor, NRCS DC, will speak on cost share opportunities to improve pastures, Ryan Drollette, Extension farm management specialist, will talk about landlord relationships and Denise Schwab, Extension beef specialist, will discuss pasture improvement. For more information, please contact Denise Schwab at 319-472-4739 or email at dschwab@iastate.edu

July 27, 6:00 to 9:00 PM at the Neal Siela farm 2211 57th St Trail, Vinton. Siela is developing a managed grazing system including a well with buried water lines, subdivision fences, and weed control. He also interseeded a winter annual to increase grazing days in the spring, and will probably interseed improved forages in the future. Siela will share his experiences. In addition, Tina Cibula, NRCS DC, will speak on cost share opportunities, and Denise Schwab, Extension beef specialist, will discuss grazing efficiency. Directions: From Vinton, go north on Hwy 218, continue straight (slight right) onto V61/22nd Ave Trl toward Mount Auburn about 2 miles, turn southwest (left) onto 57th St. Trl about 1 mile. For more information, please contact Denise Schwab at 319-472-4739 or email at dschwab@iastate.edu
Aug. 29, Grassroots Grazing Short Course, Elkport
4:00 to 9:00 PM at the Elkport Community Center plus farm nearby. Three of 5 sessions still remaining (Aug. 29, Sept. 13, Nov. 15) on management intensive and rotational grazing. Registration required. Details in the following brochure:

Pasture Walks in Southwest WI
July-Nov. via University of Wisconsin Extension. See the attached pdf for details.

IOWA DRAINAGE SCHOOL
Aug. 22-24, Borlaug Learning Center, Nashua
The three-day school features classroom lecture and discussion combined with team problem solving and field exercises. Student teams will survey and design a drainage system for a sample area of the host farm, using concepts learned during classroom discussion. By attending this school, participants will be able to plan and lay out subsurface drainage systems and work out project costs. There also will be in-field equipment and installation demonstrations. Program details are provided at: http://www.extension.iastate.edu/node/41814/

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Brian Lang
Iowa State University Extension
Agronomist
325 Washington St., Suite B
Decorah, IA 52101
Office 563-382-2949
Fax 563-382-2940
Cell 563-387-7058
www.agronext.iastate.edu/