

CROP NOTES for July 16, 2019

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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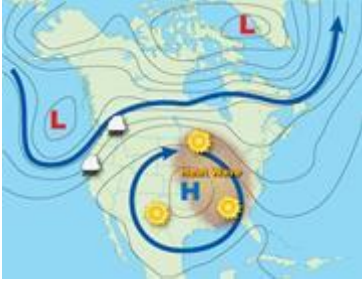
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WEATHER

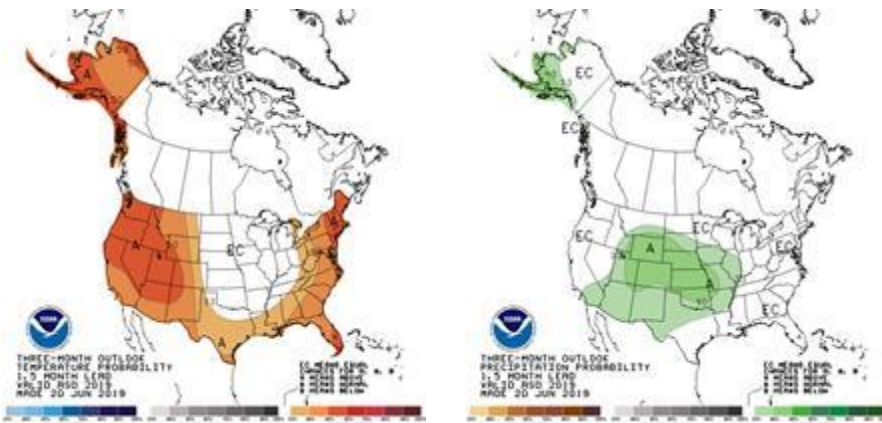
GDD Catch-Up Continues for Another Week or Two

For northeast Iowa, the long-term average GDD for middle and late July is about 22 per day. The next 7 days (July 16-July 22) should average about 29 per day. The warm nights add a lot to the daily above average GDD. The reason for this provided by the National Weather Service (NWS) is a “Blocking High”. NWS says “Blocking patterns occur when centers of high pressure and/or low pressure set up over a region in such a way that they prevent other weather systems from moving through. When the blocking pattern is in place other systems are forced to go around it. Blocking patterns can remain in place for several days, resulting in long spans of persistent weather for locations under the block. A blocking high is typically a summertime occurrence. Blocking highs are responsible for major heat waves. Any precipitation is usually shunted around

the periphery of the high-pressure area. High pressure aloft causes the air to subside or sink. This downward motion compresses and warms the air in the lower atmosphere while simultaneously trapping heat rising from the earth's surface, leading to heat waves. The skies are usually clear due to the downward motion of air. Eventually blocking highs will weaken when a short wave moves over the top of the high causing it to decrease with an end to the heat wave.”



The week of July 23-29 will have closer to normal GDD averaging about 24 per day. The forecasters (National Weather Service) clearly got July wrong, so I’m not sure what to make of their future forecasts, but they currently provide the following for Aug.-Sept. of equal chances of normal, above normal or below normal temperatures, and a 50% chance of above normal rainfall. Clearly, no frost predictions at this time one way or the other.



Corn Crop Moisture Requirements

In northeast Iowa, monthly rainfall totals for June were from 4 to 8 inches depending on location. Average rainfall for June is about 5 inches. Average July rainfall is about 4.5 inches. Currently July rainfall in northeast Iowa is anywhere from 0.4 to 3.5 inches depending on location. So some areas are running short on rainfall at a time that the corn crop is needing about 1.5 inches of water a week.

<https://crops.extension.iastate.edu/cropnews/2017/06/corn-water-use-and-evapotranspiration> As this article says, “in extreme situations such as high weed speed, high temperatures, low relative humidity, and adequate soil moisture the rate of evapotranspiration can be as high as 0.4 inches per day” (2.8 inches per week).

1. Water use per week. Corn planted May 1 will use about 1 inch of water during the last week of June. This will gradually increase to about 1.25 inches a week for early July, 1.5 inches a week for mid-July, 1.25 inches a week in late July and early August, 1 inch a week in mid-August, 0.75 inch a week in early Sept., with a rapid decline in need for water through September.
2. Subsoil water. Northeast Iowa subsoil water levels usually start the crop season with 9 to 10 inches of water in the upper 5 feet for loam and silt loam soils. Sandy soils would have less depending on how sandy, down to a little as half that in a loam soil. This spring the subsoil moisture profile was full (9-10 inches), and stayed full through about early June. So soil water reserves were at their maximum going into the summer. However, some question how deep the roots developed going into summer. But as long as there is oxygen in the soil system, roots elongate about 1 inch per day and continue to grow until about the R2 stage. They

usually extend about 6 feet deep, but occasionally deeper. FYI, “How Fast and Deep Do Corn Roots Grow in Iowa” <https://crops.extension.iastate.edu/cropnews/2017/06/how-fast-and-deep-do-corn-roots-grow-iowa>

3. What if it doesn't rain? This time of year, normal rainfall is 1 inch of water a week. Corn water use as described above will run from 1 to 1.5 inches a week. The difference between rainfall and corn water use needs to come from the subsoil moisture. Most soils probably still have about 7 inches of water in the subsoil for corn to draw from. Without rainfall, theoretically the crop would last another 5-6 weeks. Although it doesn't quite work this way, in that under drought stress corn will roll its leaves to conserve water. This is good for extending overall survival, but leaf roll can impact yield potential. Every 12 hours of leaf roll probably reduces yield about 1%, maybe up to 2% as it gets closer to tassel. Towards tassel and through brown silk (just before and during pollination), the yield loss can be anywhere from 5 to 10% for every 12 hours of leaf roll.

CORN

Growth and Development

Corn at V10 stage or more, develops a new leaf every 56 GDD up to Tassel (VT). With current GDD averaging 29 per day for this week, that's 3.6 new leaves this week. V12 plants have only accumulated about 10% of total dry matter, and V15 plants about 25% of total dry matter. Still a long way to go, and the corn grain will make up about 50% of total dry matter. At this time (V12-V15), the lowest 3 to 4 leaves are being lost due to stalk expansion and leaf decomposition. V12-V15 is a good time to conduct preliminary scouting for corn leaf disease lesions. Most of what I am seeing is Eyespot and Common rust in the lower canopy. These are not much concern. I have found some fields with early signs of Gray leaf spot. That is worth noting, and worth another field visit closer to VT stage. This dry spell could halt current leaf disease development, but again it's worth the time to take notes and scout again closer to VT stage.

SOYBEANS

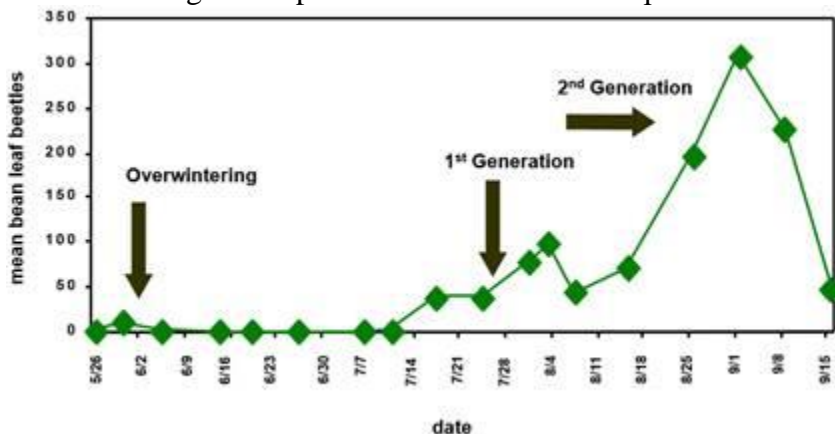
Growth and Development

Most soybeans are currently R2 stage (open flowers at 1 of the 2 upper most nodes on the main stem with a fully developed leaf). Pod development is started lower on the plant. Once pod development reaches 3/16-inch pod length at 1 of the 4 upper most nodes on the main stem with a fully developed leaf, the plant is at R3 stage. Regarding current lack of rain... soybeans respond to drought stress by flipping their leaves so the underside is turned up. If it gets serious, vegetative growth can be diminished, and flowers or pods may be aborted. However, soybeans can set new flowers and pods when conditions improve.

INSECTS

Bean Leaf Beetle

The 1st generation BLB tends to run through July, which would be mostly in reproductive stage soybeans, so the defoliation threshold is at 20% defoliation (30% defoliation in the V-stages). A 2nd generation occurs in the August-September window and can also include pod clipping as well as defoliation. For this we have a threshold using a sweep net. I'll include the sweep net instructions in the next Crop Notes.



Corn Rootworm – Evaluate root injury in late July

ISU researchers evaluate CRW trials in late July using the Node-Injury Scale. Dig some plants, knock off the loose soil, put them in a bucket of water for a while (I like to let them soak for 30 minutes of so, then they wash off easy), wash off the soil with a garden hose, and evaluate roots via the node injury scale.

Node Injury Scale:

0 = no injury

0.5 = approximately 5 roots pruned to within 1.5 inches of the stalk.

1 = one complete node (approximately 10 roots) is pruned to within 1.5 inches of the stalk

2 = two complete nodes (approximately 20 roots) are pruned to within 1.5 inches of the stalk

3 = three complete nodes (approximately 30 roots) are pruned to within 1.5 inches of the stalk

FYI, nice color node-injury rating card from the University of Wisconsin my help with your evaluations:

<https://ipcm.wisc.edu/download/pubsPM/Corn-rootRate-card2015hx.pdf>

The ISU root injury scale is linear and directly related to plant lodging and yield loss. Root injury that exceeds 0.25 is likely causing economic loss. For Bt hybrids, any injury ratings that exceed 1 would be considered unexpected with suspected resistance issues to the Bt trait. If corn plants are lodging, always confirm the reason why... follow the instructions above to check for node-injury, or maybe it was just lodging due to strong winds.

Potato Leafhopper (PLH) – Very active

Scout for PLH in alfalfa through August. Don't forget to scout the new seedlings. Scouting and management tips are available at: <https://crops.extension.iastate.edu/cropnews/2014/06/managing-potato-leafhoppers-alfalfa>

Thistle Caterpillar

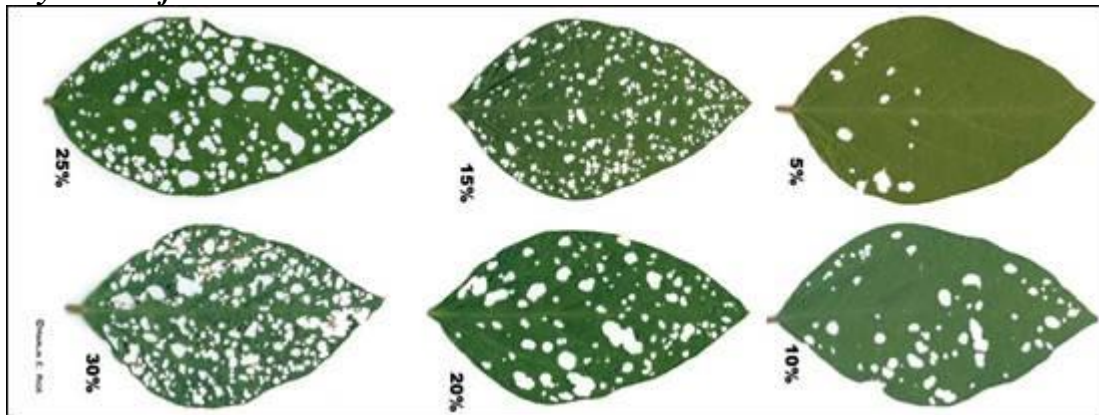
1st generation activity is over, but a 2nd generation can develop. The greatest problems with 1st generation have been in the southwest quarter of the state. They are bracing for the 2nd generation. In northeast Iowa we could find them in most fields, but few and scattered. Economic threshold for reproductive stage soybeans is 20% defoliation. Here's some photos and more information about this pest: <https://crops.extension.iastate.edu/thistle-caterpillar>

Japanese Beetles (JB) - Increasing

Japanese beetle adults are now prevalent across the state and will be here basically through August. Adults emerge from grass in early July and immediately begin to feed on low-lying plants such as roses and shrubs. Adults eventually move to trees and field crop foliage to feed and mate. Mated females move back to grass areas in August and September to lay small egg masses in soil cavities. Just like any defoliator, as we move into R-stage soybeans, 20% defoliation is considered economic threshold. That threshold includes the sum total of any and all defoliators (caterpillars, beetles, grasshoppers). For JB identification, go to:

<https://hortnews.extension.iastate.edu/japanese-beetle>

Soybean Defoliation Chart



In corn, as it starts to tassel, we scout for silk clipping by Japanese Beetles. I don't recall ever having to treat for this yet, but we don't know what the populations will be like for this season. 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.

Japanese Beetles – Fantastic publication for tree, shrub, garden clients

The University of Minnesota developed a fantastic publication that covers all of the bases for Q&A with Japanese beetles for the home owner regarding trees, shrubs, lawn and garden. Just go to:

<https://extension.umn.edu/yard-and-garden-insects/japanese-beetles> If you print the entire publication, it runs 8 pages. I print copies in my office to hand over the counter to clients.

Spider Mites

This insect is never a problem in seasons with regular rainfall. However, they are always worth scouting for in a drought. Will we move into a drought, or will rainfall return? Here is a link to tips on scouting and treatments: <http://cropwatch.unl.edu/2016/managing-spider-mites-corn-and-soybean> In the past, we only used insecticides to control spider mites, but now miticides are also available as control options (Zeal, Oberon, and Onger) and do a better job at controlling eggs and immature stage spider mites.

DISEASES

Foliar Fungicide Efficacy Table Publications for Corn and Soybeans

These publications are a free download from the *Crop Protection Network*,

<https://cropprotectionnetwork.org/resources/publications> You can find most any crop disease information in the latest updated publication at this website.

Soybeans: <https://crop-protection-network.s3.amazonaws.com/publications/fungicide-efficacy-for-control-of-soybean-foliar-diseases-filename-2019-03-25-121546.pdf>

Resistance concerns... A concern with foliar diseases in soybeans is that strobilurins are no longer recommended for *Forgeye Leaf Spot* and *Cercospora Leaf Blight* due to resistance issues. And the strobilurins are of questionable performance on Brown Spot (*Septoria brown spot*).

Corn: <https://crop-protection-network.s3.amazonaws.com/publications/cpn-2011-corn-fungicide-efficacy-for-control-of-corn-diseases.pdf>

EVENTS

July 17, Soil Health and Water Quality Workshop, Grundy

9:00 AM to 1:30 PM at the Grundy County Fairgrounds. Topics include: Landowner-tenant collaboration, Relay cropping, Edge-of-field practices, Prairie strips, Urban conservation, and Soil health. For more details, go to: https://practicalfarmers.org/events/field-days/soil-health-and-water-quality-workshop/?utm_source=pnews&utm_medium=email&utm_campaign=07.05.19 Free lunch will be provided, but please RSVP to Denise Freeseeman, Grundy County SWCD, at denise.freeseeman@ia.nacdnet.net or (319) 824-3634, ext 3, by Wednesday, July 10.

July 25, Workshop on Revised RUSLE2 and Iowa P-Index, Altoona

8:00 AM to 4:30 PM at the ISU Extension Polk County office in Altoona. Service providers and livestock producers that develop manure management plans (MMP) can learn or remind themselves how to use the Revised Universal Soil Loss Equation 2 (RUSLE2) and the Iowa Phosphorus Index to be used in creating those MMP. The introductory level workshop provides hands-on software orientation, including an introduction to the operating parameters, selection of input values, and developing and saving management operations for RUSLE2. More details about the program, agenda and registration is available at:

<https://www.extension.iastate.edu/news/isu-extension-and-outreach-host-rusle2-soil-loss-workshop-0>

July 30, Financial Impairment on the Farm Webinar

12:00 to 1:00 PM. The I-29 Moo University consortium of Extension dairy specialists from Iowa, Minnesota, Nebraska and South Dakota will host a Financial Impairment on the Farm webinar, free and open to all those involved in production agriculture, specifically, producers and agri-business personnel. The program will focus on issues producers face during times of financial impairment with emphasis placed on mediation, reorganization options and Chapter 12 Bankruptcy. Donald Swanson, an attorney with Koley Jessen in Omaha, and Kristine Tidgren, Director for the Center of Ag Law and Taxation and an adjunct assistant professor at Iowa State University, will facilitate the discussion. For more information, and the link to the webinar, go to: <https://www.extension.iastate.edu/dairyteam/financial-impairment-farm-webinar>

July 31 & Aug 1, Planning for Profitability in a Changing Dairy Industry, Decorah (July 31) & Rock Rapids (Aug 1)

9:00 AM to 2:00 PM on July 31 at Pinter's Gardens located at 2475 State HWY 9, Decorah; and on Aug. 1 at the Forster Community Center in Rock Rapids.

Key presentations include:

- Cash versus accrual accounting and how it will be affected by changes in the tax laws – presented by Tom Thaden, Eric Hofland and Reggie Hostetler, Agriculture Consultants from the Northwest Iowa Farm Business Association
- Using FINBIN and DHIA data to predict financial success on small-medium sized dairies – presented by Joleen Hadrich, Extension Economist and Associate Professor of Applied Economics at the University of Minnesota
- The value of a risk management strategy – presented by Cassie Monger, Dairy Industry Specialist with Compeer Financial
- Dairy Market Outlook – presented by Fred M. Hall, Northwest Iowa Dairy Specialist with ISU Extension and Outreach.

For more details about the program, registration, etc., go to: <https://www.morningagclips.com/planning-for-profitability-program/>

July 30-Aug 26, 2019 Farmland Leasing Arrangements Meetings, 17 locations in northeast IA

A comprehensive 2.5 to 3 hour workshop that includes: Updated land values & cash rental rates; USDA Farm Bill highlights; Writing and terminating a farm lease; Family & Landlord-Tenant communication; Trends, outlook in farmland leasing; Production costs lease considerations; Methods to set fair rents, flexible leasing. The workshop includes an extensive workbook and other resources. Registration Fee is \$20 per person if pre-registered, and \$25 per person at the door.

- July 29, 1:00 to 3:30 PM, Independence, at Heartland Acres, register 319-334-7161
- July 30, 1:00 to 3:30 PM, Decorah, at Bank of the West, register 563-382-2949
- July 30, 6:00 to 8:30 PM, Cresco, at Howard County Extension office, register 563-547-3001
- July 31, 1:30 to 4:00 PM, Waukon, at Allamakee County Extension office, register 563-568-6345
- Aug 1, 9:00 to 11:30 AM, Fayette, at Fayette County Extension office, register 563-425-3331
- Aug 1, 1:00 to 3:30 PM, New Hampton, at Chickasaw County Extension office, register 641-394-2174
- Aug 1, 1:30 to 4:00 PM, Mason City, at NIACC, register 641-423-0844
- Aug 6, 1:00 to 3:30 PM, Epworth, at Epworth City Hall, register 563-583-6496
- Aug 6, 6:30 to 9:00 PM, Manchester, at Fairgrounds Community Center, register 563-927-4201
- Aug 8, 9:00 AM to Noon, Charles City, Floyd County Extension office, register 641-228-1453
- Aug 8, 1:00 to 4:00 PM, Tripoli, Bremer County Extension office, register 319-882-4275
- Aug 9, 6:00 to 8:30 PM, Cedar Rapids, Linn County Extension office, register 319-337-2145
- Aug 13, 1:00 to 3:30 PM, Waterloo, Hawkeye Community College, Tama Hall, register 319-234-6811
- Aug 14, 6:00 to 9:00 PM, Elkader, at the Freedom Bank, register 563-245-1451
- Aug 15, 1:00 to 3:30 PM, Osage, at Mitchell County Extension office, register 641-732-5574
- Aug 22, 1:30 to 4:00 PM, Allison, Butler County Extension office, register 319-267-2707
- Aug 26, 1:00 to 3:30 PM, Monticello, Jones County Extension office, register 319-337-2145

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

Aug 3, Home Demonstration Garden Tour Field Day, Nashua

Starting at 4 PM. Discuss 2019 vegetable & flower cultivars, gardening tips, food-bank project. Emphasis on growing cut flowers, sweet corn and tomatoes. Here's the news release with additional information:

<https://www.extension.iastate.edu/news/demonstration-garden-field-days-will-offer-tips-statewide>

Aug 20-22, Iowa Drainage School, Nashua

Three-day workshop on design, installation and maintenance of drainage systems held at the Borlaug Learning Center on the ISU Northeast Research near Nashua. For more information, go to:

<https://www.extension.iastate.edu/news/iowa-drainage-school-focuses-drainage-systems>

Aug 21, Dairy Pasture Walk, Garnavillo

11:00 AM to 2:30 PM at the Andy Schaefer farm, 25037 Lake Rd., Garnavillo, IA. Participants will get an up-close look at pasture renovation, brush control and the overall economics of dairy grazing. For more information, please read the news release at: <https://www.extension.iastate.edu/dairyteam/dairy-pasture-walk>

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