CORN GROWTH AND DEVELOPMENT

For a map of current GDD, go to: [http://mesonet.agron.iastate.edu/GIS/apps/coop/gsplot.phtml](http://mesonet.agron.iastate.edu/GIS/apps/coop/gsplot.phtml)  Current GDD from May 1 in northeast Iowa is about 2,600 along Hwy 9 and 2,750 along Hwy 20. Timely planted fields are mature. Current GDD for fields planted in the third week in May are about 2,350 along Hwy 9 (2 to 3 weeks from maturity) and 2,475 along Hwy 20 (7 to 10 days from maturity) for full season corn.

Corn growth & development reproductive stages of a full season hybrid for northeast Iowa.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description of stage</th>
<th>Comments</th>
<th>Time to next stage</th>
<th>GDD to next stage</th>
<th>Accumulated GDD from May 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>R5</td>
<td>Dent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>¼ milk line</td>
<td>Whole plant is about 70% moisture. 65% DM in kernel.</td>
<td>~ 9 days</td>
<td>175</td>
<td>2,225</td>
<td></td>
</tr>
<tr>
<td>½ milk line</td>
<td>Whole plant is about 65% moisture. 90% DM in kernel.</td>
<td>~ 10 days</td>
<td>175</td>
<td>2,400</td>
<td></td>
</tr>
</tbody>
</table>
Corn Stalk Rot and Harvest
While the warm season has provided faster than normal growth and development, and timely maturation of the crop, the wet weather throughout the season enhances the chance for development of root rots during the season, and subsequent development of stalk rots into the fall. As corn fields approach maturity (black layer, R6 stage), they should be scouted for stalk rot. If a field has about 15% stalk rot or more, the risk of significant lodging is high enough to justify harvesting the field on the early side. So at initial R6 stage, test stalk firmness by pinching the lower internodes with thumb and forefinger. Healthy stalks are firm and cannot be compressed. If a stalk can be compressed or feels soft, it is rotted and is a good candidate for lodging. Randomly check about 100 plants per field for a good assessment of conditions.

What to Expect from Stalk Rot and Mycotoxins in Severely Diseased and Damaged Corn
Much of the state of Wisconsin has experienced the same heavy rainfall season as northeast Iowa. They just published their last newsletter with a somewhat lengthy article covering a wide array of topics regarding stalk rot, ear rot, possible mycotoxins and testing. [https://badgercropdoc.com/2018/09/11/expect-stalk-rot-mycotoxins-severely-diseased-damaged-corn/](https://badgercropdoc.com/2018/09/11/expect-stalk-rot-mycotoxins-severely-diseased-damaged-corn/)
The article basically breaks things down into these categories:

- Stalk integrity and possible mold/mycotoxins in whole-plant silage.
- Ear rots and possible mycotoxins. The weather pattern in northeast Iowa does not favor development of aflatoxin, but rather the Fusarium sp. that could produce Vomitoxin, T-2, Fumonisin or Zearalenone. Of course, mold present on ears does not mean mycotoxins have been produced.
- Unfortunately the links in this article on procedures for grain sampling and testing for mycotoxins are not working. So for simple tips on sampling feed and sending to a lab, here is an easy to follow procedure posted on the Dairyland Labs website under “Sampling Tips”: [https://www.dairylandlabs.com/molds-and-mycotoxins](https://www.dairylandlabs.com/molds-and-mycotoxins)
- Corn grain storage when concerned about ear rots and mold in the grain harvest.

Vivipary
The wet August combined with above normal warm and humid nighttime conditions has increased the chance of kernels on ears spouting, called vivipary. The University of Nebraska wrote a recent article about this abnormality. [https://cropwatch.unl.edu/2018/whats-causing-corn-kernel-germination-ear](https://cropwatch.unl.edu/2018/whats-causing-corn-kernel-germination-ear) The greater concern is where corn was stressed earlier by drought or hail followed by wet and warm conditions. However, flood waters that get above the ear can also cause the problem. We have also had a few situations associated with heavy rains getting moisture into ears with loose husks.

Tar Spot Leaf Disease
The University of Illinois (UL) is requested samples of Tar Spot leaf disease samples from across the Midwest be sent to them for a research project. This is explained in the following blog: [https://crops.extension.iastate.edu/blog/ethan-stoetzer-daren-mueller/samples-tar-spot-corn-needed-research](https://crops.extension.iastate.edu/blog/ethan-stoetzer-daren-mueller/samples-tar-spot-corn-needed-research) Both the sample submission form and permit need to be included in any samples sent to UL. These are both linked to the blog. This disease was first noticed in the Midwest a few years ago, and has extended its presence across the Midwest. Here is a fact sheet about the disease: [https://www.extension.purdue.edu/extmedia/BP/BP90-W.pdf](https://www.extension.purdue.edu/extmedia/BP/BP90-W.pdf) While the fact sheet comments that late season development of Tar Spot had little effect on yield, this season we noticed a few fields infected with Tar Spot showed a rather quick spread of the disease through the field and shut down crop development fairly quick (premature death of the crop). One of the goals of the research is to investigate the genetic variability of the pathogen.
SOYBEANS
Growth and Development

<table>
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<tr>
<td>R6</td>
<td>Pods contain green seeds that fill the pod to capacity at one of the four uppermost nodes on the main stem with a fully developed leaf.</td>
<td>Period of rapid, steady seed dry weight accumulation continues until R6.5 stage. Rapid leaf yellowing begins shortly after R6 (lower canopy spreading upward). R6.5 is good timing for aerial cover crop seeding, applying seed to the ground before extensive leaf drop occurs.</td>
<td>About 18 days to R7 stage, physiological maturity.</td>
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<tr>
<td>R7</td>
<td>One pod on the main stem has reached a mature color (tan or brown).</td>
<td>Beginning maturity. Very little yield loss (&lt;2%) if a killing frost occurs at this stage.</td>
<td>About 9 days to R8.</td>
</tr>
<tr>
<td>R8</td>
<td>95% of pods have reached a mature color.</td>
<td>Full maturity.</td>
<td>About a week to &lt;15% moisture.</td>
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</table>

FARM MANAGEMENT
Trade Assistance Package in 2018
On August 27, 2018, USDA announced the details for the short-term tariff relief package. Details about this program are provided on the Ag Decision Maker website at: https://www.extension.iastate.edu/agdm/crops/html/a1-37.html

WINTER WHEAT
Planting Tips
For grain production, the target seeding dates for winter wheat in northeast Iowa starts after mid-September. Plant after the Hessian fly free date; an insect pest that can be an issue with winter wheat grain production if planted too early. Hessian fly free date map of Iowa is include in the following article: https://crops.extension.iastate.edu/cropnews/2012/08/fly-free-date-hessian-fly. This is not an issue with wheat used as a cover crop. Other tips on winter wheat establishment are provided in the following article from the University of Wisconsin titled The Top 8 Recommendations for Winter Wheat Establishment: https://coolbean.info/wp-content/uploads/sites/3/2017/10/Top-8-Wheat-recs_18.pdf

FERTILITY
Fall Stalk Nitrate Test
This test suggests the best timing for collecting samples is 1 to 3 weeks after black layer. It’s questionable that this test will tell us much with a season that experienced twice the normal rainfall, however, various funded programs still require this test to be run. A full description of the test, sampling, interpreting results, etc. is available in the following publications: https://store.extension.iastate.edu/product/Use-of-the-End-of-Season-Corn-Stalk-Nitrate-Test-in-Iowa-Corn-Production To have the test run, Do Not send samples to the ISU Soil Fertility Lab. When this lab closed to no longer run soil samples, it also no longer runs these other tests. There are many private labs that will run this test. Here are few choices:
AgSource
Dairyland Labs
https://www.dairylandlabs.com/agronomy-services/plant-tissues/corn-stalk-nitrate-testing
Minnesota Valley Testing Labs
http://www.mvtl.com/Services/AgricultureInformation
A & L Great Lakes Laboratories
https://algreatlakes.com/pages/submittal-forms
EVENTS

Oct. 24, The 32nd Annual Tri-State Agricultural Lender’s Seminar, Dubuque
9:00 AM to 2:30 PM at the Best Western Plus, 3100 Dodge Street, Dubuque. Registration at 9:00. Program agenda includes: 9:30 Dairy Marketing and Risk Management Update (Dr. Robert Cropp, Dairy Marketing Specialist, UW Professor Emeritus); 10:15 The Farm Bill and Implications for Lenders (Dr. Joe Outlaw, Professor and Extension Economist, Co-Director, Ag and Food Policy, Texas A&M University); 11:10 Understanding Farm Stress and How to Help (Dr. John Shutske, Extension Farm Safety Specialist, UW-Extension); 12:50 Ag Decision Maker—A Useful Tool (Ann Johanns, Extension Program Specialist, ISU Extension); 1:30 Land, Grain & Livestock—Marketing and Risk Management (Dr. Chad Hart, Grain Marketing Specialist, ISU Extension). For more information, see the attached document. The cost of the program is $100. Please register with Dubuque County Extension at 563-583-6496 or email lklatt@iastate.edu or tranel@iastate.edu for registration information. Directions: The Best Western Plus, 3100 Dodge Street, is right off Highway 20 on the west side of Dubuque between Theisen’s and Cedar Cross Road.

Oct. 30, Pasture-Walk, Vance & Olaf Haugen Farm, Canton, MN
10:30 AM start at 12620 Deer Rd., Canton, MN. Discuss late fall/early winter paddock planning for dairy grazing. Kura Clover production for seed. Guest speaker is Bonnie Haugen of DGA on “How the importance of soil health for pastures affects feeding our cows, and consequently our profitability. Improving soil health ideas.” Directions from Decorah IA, take Hwy 52 north about 17 miles to the intersection of Hwy 44 & 52, go through the intersection onto Dove Rd., go 0.5 mile to right on Deer Rd. Go 1.5 miles to farm on east side of road. Fire # 12620. Any questions, please call the Haugen’s at 507-459-3264.

Nov. 14-15, North Central Extension-Industry Soil Fertility Conference, Des Moines
Intended for university soil fertility and crop production specialists, industry agronomists, crop advisers, and agency personnel. The goal of the conference is to facilitate sharing of new soil fertility and nutrient management research information and fertilizer industry developments. Presentations highlight ongoing soil fertility research at universities in the North Central region (IL, IN, IA. KS, KY, MI, MN, MO, NE, ND, OH, ON, PA, SD, and WI). For more information, go to: https://conference.ipni.net/conference/ncsfc2018

Nov. 26-27, Iowa Forage and Grasslands Conference, Des Moines
At the Des Moines Airport Holiday Inn. Jim Gerrish, renowned grazing consultant, and Byron Shelton, senior program director of the Savory Institute, are scheduled to speak during the Nov. 26 evening session and again in in-depth sessions on Nov. 27. For program details, go to http://iowaforage.org/

Oct.-Dec., Commercial Pesticide Applicator CEU Programs
These programs are offered at most county extension offices. Contact the local extension office to reserve a space. Registration forms will not be available until mid-September.
https://www.extension.iastate.edu/psep/ComAp.html
  Oct. 17, Categories 2 (Forest Pest), 5 (Aquatic Pest), 6 (Right-of-Way), and 10 (Research & Demonstration)
  Oct 25, Categories 7D (Community Insect Management), 8 (Public Health Pest), and 10 (Research & Demonstration)
  Nov. 2, Categories 3G (Greenhouse Pest Control), and 10 (Research & Demonstration)
  Nov. 7, Categories: 3O (Ornamental Pest), 3T (Turf Pest), 3OT (Ornamental and Turf Pest), and 10 (Research and Demonstration)
  Nov. 13, Private and Commercial, Categories: 7C (Fumigation), and 10 (Research & Demonstration)
  Nov. 14, Categories 1A (Ag Weed), 1B (Ag Insect), 1C (Ag Disease), and 10 (Research & Demonstration)
  Dec. 5, Categories 7A (General & Household Pest), 7B (Termite Control), 8 (Public Health Control), and 10 (Research & Demonstration)
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