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CORN

Growth and Development
Corn in northeast Iowa is anywhere from V5 stage to just planted. It takes about 100 GDD from planting to emergence so just planted corn should spike in 5 to 6 days. Emerged corn will develop a new leaf every 84 GDD (about every 4 days with the current weather conditions). For a map of current GDD from May 1 to today, go to: http://mesonet.agron.iastate.edu/GIS/apps/coop/gsplot.phtml. Average GDD for late-May to early June is about 14 per day, however, this week (Thursday-Wednesday) will average about 19 per day.

June 1, Switch Hybrids, Delayed Plant Provisions
I am assuming there is very little corn to still plant in northeast Iowa. It’s a bigger problem from Mason City to the west. Obviously we move to an earlier maturity hybrid by June 1, except if you have a silage harvest option. Regarding June 1 and delayed or prevented planting provisions, ISU Extension wrote the following article discussing protection options, which also links to a worksheet to input your own data: https://www.extension.iastate.edu/news/understanding-initial-delayed-and-prevented-planting-decisions

Scout Emerged Stands
Check for:
1) Population, seed depth and plant spacing: Did you get what you intended with your planter settings? Any sidewall compaction? Uniform stand? Here is a table of plant counts per 1,000th acre: http://crops.extension.iastate.edu/corn/production/management/planting/replanting.html
2) Early-season weed issues: Is the pre-emerge program working? Are there weed escapes? Figure timing for post-emergence program.
3) Insects: Above ground: Black cutworm, Armyworm, Common stalk borer. Below ground: If you find gaps, missing plants, wilted plants, look for grubs, wireworms, seed corn maggot, Hop vine borer (bores up into the stem from below ground). Here is a corn insect scouting calendar to help plan scouting activities (best printed on 8.5x14 size paper): https://www.extension.iastate.edu/winneshiek/sites/www.extension.iastate.edu/files/winneshiek/CropNotes/8.5%20x%2014%20insect%20pest%20scout%20calendar%20and%20DD%20info.pdf, and here is an excellent insect pest resource book available at: https://store.extension.iastate.edu/product/13725
4) Seedling diseases or not: Is there proper development of seminal roots from the seed; a healthy white mesocotyl; initial development of the permanent root system from the coleoptile node about 3/4-inch below the soil surface which is visible at about V2 and by V3 makes up about half of the total root mass. This website from Purdue troubleshoots some corn seeding problems: https://www.agry.purdue.edu/ext/corn/news/timeless/Roots.html. Most of the seedling root rot issues occur under cool, wet, compacted, poorly drained soil environments. This
spring’s general conditions for May have been warmer than normal so expect fewer disease problems.

**SOYBEANS – repeat from last week**

**When to Switch Varieties**
Stay with full season varieties until about June 20. Full season varieties were recently reaffirmed/redefined in the following 2016 regional publication: [http://www.coolbean.info/library/documents/SoybeanMG_2016_FINAL.pdf](http://www.coolbean.info/library/documents/SoybeanMG_2016_FINAL.pdf) For delayed planting, if feasible, use narrower rows (i.e. 15 or 20-inch vs. 30-inch) and up the population a bit since late planted soybeans don’t develop as robust and cover the rows as good as earlier planted soybeans.

**Scout Emerged Stands**
Check for:
1) Population, seed depth and plant spacing. Did you get what you intended with your planter settings? If a reduced stand, why? Soil crusting, planter setup, soil insects (seedcorn maggot, wireworms, grubs), seedling disease?
2) A final stand of a uniform 100,000 plants per acre should maximize yields, and it seldom pays to replant uniform stands of less than 75,000 because of the cost of replanting and yield penalty for the delayed planting. Here’s soybean plant populations in plants per foot of row.

<table>
<thead>
<tr>
<th>Row Width</th>
<th>Desired plants per acre (X1000)</th>
<th>Average number of plants per foot of row</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>6 inch</td>
<td>0.9</td>
<td>1.2</td>
</tr>
<tr>
<td>7.5 inch</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>10 inch</td>
<td>1.4</td>
<td>1.9</td>
</tr>
<tr>
<td>15 inch</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>20 inch</td>
<td>2.8</td>
<td>3.8</td>
</tr>
<tr>
<td>30 inch</td>
<td>4.3</td>
<td>5.7</td>
</tr>
</tbody>
</table>
3) Early-season weed issues? Is the pre-emerge program working? Are there weed escapes? Figure timing for the post-emergence program.

**WINTER WHEAT**

**Stage for Fungicide Application**
We expect wheat in northeast Iowa (of what few acres there are) to reach initial anthesis within the next week. A critical time to make a decision for fungicide application to control Fusarium Head Blight (FHB) and Stripe Rust is 4-5 days after beginning anthesis. The primary fungicides for control of FHB are Caramba and Prosaro. Dr. Smith, University of Wisconsin discusses all of this in greater detail in a May 28 article at: [https://fyi.uwex.edu/fieldcroppathology/2017/05/28/wisconsin-winter-wheat-disease-update-may-28-2017/](https://fyi.uwex.edu/fieldcroppathology/2017/05/28/wisconsin-winter-wheat-disease-update-may-28-2017/)

**Why is Winter Wheat and Winter Rye so Short this Spring?**
Here’s a nice article from Dr. Wiersma, University of Minnesota Small Grains Specialist, discussing the effects of heat units and photoperiod on small grain development this spring: [http://blog-crop-news.extension.umn.edu/2018/05/why-is-my-rye-short.html](http://blog-crop-news.extension.umn.edu/2018/05/why-is-my-rye-short.html)
**NITROGEN**  
**Nitrogen Application Over Emerged Corn**  
Urea-ammonium nitrate (UAN) alone can be applied to emerged corn, and the risk of injury to the corn is dependent upon UAN rate, corn stage and weather conditions. Conservative suggestions are to limit post-emergence applications of UAN to 90 lb N/acre when corn is at the V3 to V4 stage and to 60 lb N/acre at the V7 stage. Applications beyond the V7 stage are not recommended, and the risk of injury increases during hot, dry conditions. While many pre-emergence herbicides are applied using UAN as a carrier, this practice is only recommended prior to crop emergence.

**Late Spring Soil Nitrate Test (LSNT)**  
Free download of the LSNT publication is available at:  
[https://store.extension.iastate.edu/Product/Use-of-the-Late-Spring-Soil-Nitrate-Test-in-Iowa-Corn-Production](https://store.extension.iastate.edu/Product/Use-of-the-Late-Spring-Soil-Nitrate-Test-in-Iowa-Corn-Production)  
Soil sample collection for the LSNT should be accomplished in early June even if the corn is not to the suggested height for soil nitrate sampling. This sample timing caveat is mentioned in the time and depth of sampling section of the publication. For N rate guidelines on corn not based on this test, use Extension publication CROP 3073,  
[https://store.extension.iastate.edu/Product/Nitrogen-Use-in-Iowa-Corn-Production](https://store.extension.iastate.edu/Product/Nitrogen-Use-in-Iowa-Corn-Production) and the Corn Nitrogen Rate Calculator [http://cnrc.agron.iastate.edu/](http://cnrc.agron.iastate.edu/)

**Potential N Loss in Spring 2018**  
The Corn Nitrogen Rate Calculator provides a good starting point for N recommendations, but sometimes circumstances like a wet spring requires additional adjustments. An article posted last spring on the ICM News discusses issues with above average spring rainfall and risk of N fertilizer loss.  
[http://crops.extension.iastate.edu/cropnews/2017/05/potential-nitrogen-loss-spring-2017](http://crops.extension.iastate.edu/cropnews/2017/05/potential-nitrogen-loss-spring-2017) The 4th approach in this article discusses concerns with April 1 through June 30 rainfall that exceeds 15 inches. The current 60-day rainfall map (April 1-May 30) below shows that parts of northeast Iowa have already received 10 to 15 inches of rainfall with the month of June still to go. It certainly looks like parts of northeast Iowa will exceed the 15-inch trigger. Please read the article for more information about this N loss estimate approach.

Map from the National Weather Service accumulated rainfall for the period of April 1-May 30  
[http://water.weather.gov/precip/](http://water.weather.gov/precip/)
INSECTS

Below Ground Insects – repeat from last week
Likely not noticed unless your emerging corn and soybean rows have gaps. Always be prepared to dig plants when you scout fields.

Seedcorn Maggot
Higher risk situations include planting into recently tilled residue, especially green residue (cover crop, CRP, rotated hay/pasture), or spring applied manure. If this is the case, you could use an insecticide seed treatment at planting, as there is no rescue treatment after planting. More details are provided in the following article:
https://crops.extension.iastate.edu/cropnews/2018/04/seedcorn-maggot-active-southern-iowa

Wireworms
Problems are more likely to occur in corn following sod or CRP, but wireworm problems have been found in some corn-soybean rotations. Since wireworms can take up to 8 years to complete their life cycle, if wireworms were a problem in a field 2, 4 or 6 years ago, there is a good chance they will still be there this year. Insecticide seed treatments offer effective control, but even they can be overwhelmed with high insect populations. If using a rootworm insecticide in continuous corn, the rootworm product should offer sufficient control. There is no rescue treatment after planting. See photos of this pest at: http://www.ent.iastate.edu/imagegal/coleoptera/click/

True White Grubs
As with most soil insects, it is difficult to predict when and where True white grubs will be found. Problems can be expected in cornfields following grass sod (pasture, CRP, etc.). But stand loss has also occurred in both continuous and rotated corn. In Iowa, the problem is usually, but not always, found adjacent to areas bordered by cottonwood or willow trees. Sometimes true white grubs are found far from trees and the reason for their occurrence in a field remains a mystery. Since True white grubs can take up to 3 years to complete their life cycle, if they were a problem last year, they still could be a problem this year. The Nicotinoid seed treatments are very effective on grubs. If using a rootworm insecticide, i.e. in continuous corn, the insecticide seed treatment should not be necessary for control. Iowa has other grubs, but it’s the True white grub that threatens our row crops. Here is an excellent one-page grub ID sheet to determine if any grubs that are found are True white grubs:

Common Stalk Borer
For those that lose corn plants in the first few rows along grassy field borders or grass-back terraces may be from Common Stalk Borer.

The remaining control option for this pest this season is to wait for larval migration from the grass border to the first few corn rows. When the larva gets too large for the perennial grass, it
“dead-heads” the grass (kills its growing point which turns the grass prematurely tan color – see photo above) and moves out to find something larger, like the nearby corn. This migration starts ~1,300 (from Jan. 1 base 41F) and provides window of about a week to spray an insecticide on the first few rows of corn along the grass border. Season to season, this usually occurs around mid-June. Currently, Hwy 18 is at about 910 DD, and Hwy 20 is at about 1,110 DD. With predicted temperatures over the next week we should reach ~1,300 DD around June 16 for Hwy 18, and June 9 for Hwy 20. You can scout for “dead-heads” as a way to figure if there are just a few or many Common stalk borer along your field. Don’t worry about treating if the “dead heads” are few.

**Black Cutworm**
No significant reports in northeast Iowa. Some activity in southern Iowa. Scout corn to V5 stage. Common thresholds for seedling, V2, V3, and V4 stage corn plants are 2, 3, 5, and 7 plants cut out of 100, respectively. For scouting tips and a threshold spreadsheet, go to: https://crops.extension.iastate.edu/cropnews/2018/05/black-cutworm-scouting-2018

**True Armyworm**
No reports yet, but scout through June. One report on a Zebra caterpillar (Melanchra picta) found in large numbers in a localized spot but not threatening on a field-scale, versus True armyworm (Mythimna unipuncta) which is what we are looking for. The following article provide some photos, scouting tips and threshold recommendations. https://crops.extension.iastate.edu/blog/adam-sisson-erin-hodgson/true-armyworm-trapping-update Armyworm tend to avoid of direct sunlight by hiding in the corn whorl or under residue in very young corn fields, and feed at night or in the daytime with overcast skies.

**Corn Rootworm**
50% egg hatch occurs at about 684 to 767 soil degree days (base 52 from Jan. 1) which is usually mid-June. Currently we have about 469 DD for northeast Iowa (Nashua) which is a little ahead of normal (cold April, warm May). Hatch should start very soon with 50% hatch around June 12 (>700 soil DD at Nashua). FYI, here’s the Mesonet website to track this information statewide: http://mesonet.agron.iastate.edu/GIS/apps/agclimate/gsplot.phtml?var=sgdd52&year=2018&smonth=1&sday=1&imgsz=640x480&emonth=5&eday=31

**Alfalfa Weevil**
I have not received any reports on this pest. My sweeps in northeast Iowa have found very few. If found at any significant level, its simply time to cut the alfalfa anyway and not bother with an insecticide application.

**Potato Leafhopper (PLH)**
After first crop harvest and with initial alfalfa regrowth of a few inches, it’s time to scout (with a sweep net) for PLH. Scouting and threshold information is provided at: http://crops.extension.iastate.edu/cropnews/2014/06/managing-potato-leafhoppers-alfalfa. My sweeps early this week have found very few, but they can populate quickly. They are blown up from the gulf coast region every spring. Warm and dry weather favors their development. Don’t forget to check on new alfalfa seedings under the oat nurse crop. Serious PLH populations can kill new seedlings. Many companies sell sweep nets. I bought a good
quality one at a very reasonable price at http://bioquip.com/search/default.asp, bottom of the webpage, product number 7635HS, Insect Net, Heavy Duty Sweep, 3' Handle, 15" Diameter Bag, $30.45 plus shipping.

WEEDS
Corn Growth Stage and Post-emergence Herbicides
Here is a recent University of Illinois posting of a summary of post-emergence corn herbicides allowed at various crop growth stages. Almost all product labels indicate a maximum growth stage beyond which broadcast applications should not be made, and a few even a state minimum growth stage before which applications should not be made. For product labels that indicate a specific corn height and growth stage, be sure to follow the more restrictive of the two. For more details go to: http://bulletin.ipm.illinois.edu/?p=4173 Be sure to consult the respective product label for additional precautions or restrictions.

ALFALFA
Predictive Equation for Alfalfa Quality (PEAQ)
PEAQ points to most dairy quality hay already harvested, or to harvest at the earliest weather opportunity. Basically once alfalfa reaches about 28-inch ht. and is in bud stage, its harvest time for typical dairy quality hay. More specifically, PEAQ provides an estimate of forage quality in the field using plant height and crop stage. Use the following instructions and table for these measurement: https://www.extension.iastate.edu/dairyteam/files/page/files/PEAQ.pdf Do not forget to subtract either 15 RFV units for a haylage harvest or 25 RFV units for a hay harvest from the standing crop reading. ISU Extension staff around the state will be providing some readings from alfalfa fields and posting these on a website at: https://www.extension.iastate.edu/dairyteam/peaq (page down and click on “All Above Counties”). You will be able to track these postings over time, but we strongly encourage that you take PEAQ readings from your own alfalfa fields for best reliability.

CATTLE
Heat Stress and Related Factors
All are aware of the basic concerns with warm weather and cattle as mentioned in the recent article https://www.extension.iastate.edu/news/forecasted-heat warnings-may-cause-cattle issues This website http://www.iowabeefcenter.org/heatresources.html lists a few more resources regarding heat stress, some of which you might not think about like warm weather and the potential development of blooms of bluegreen algae in ponds and streams: http://www.iowabeefcenter.org/information/BluegreenAlgae.pdf

EVENTS
June 7, Introductory RUSLE2 & Phosphorous Index Workshop, Altoona
The program brochure and link to on-line registration is available at:

June 12, Herbicide Resistance Management Field Day, McCallusburg
5:00 to 7:00 PM. Attendees will learn about effective herbicide sites of action, effective application rates, the impact of pre- and post-emergence applied herbicides and timing of
applications. ISU Extension agronomists Meaghan Anderson, Terry Basol and Angie Rieck-Hinz will lead attendees through the plots to discuss herbicide principles used to manage herbicide resistant weeds. Details available at: https://www.extension.iastate.edu/news/herbicide-resistance-management-field-day-june-12

June 13-14, Four-State Dairy Nutrition & Management Conference, Dubuque
At the Grand River Center, Dubuque, IA. Presenting the latest research on issues concerning the dairy industry including feed efficiency, calves, and transition cows. Complete agenda and registration is available at http://www.wiagribusiness.org/fourstate.html

June 16, Clayton County Cattlemen Locker Tour, Edgewood
1:00PM at the Edgewood Locker, sponsored by the Clayton County Cattlemen and the Iowa Beef Industry Council Edgewood Locker tour and cutting room demonstrations, calculate dressing percent, retail yield, and measuring carcass, determine quality grade, pricing, and compare to industry standards. Participants will also taste test new cuts. Learn how you benefit from the checkoff at both the state and national level from Chris Freeland. Dr. Woerner from Colorado State University will give an update on the industry as well. Registration by June 11th at www.tinyurl.com/beefworkshop18

June 20, ISU Northern Research Farm Field Day, Kanawha
Registration starts at 9:00, the field tour runs from 9:30 to noon followed by a lunch provided (so please RSVP to the Wright Co. Extension office 515-532-3453 or Hancock Co. Extension Office 641-923-2856). Topics include sulfur fertilization of corn, 2018 weed control, growing cereal rye for seed, and current challenges with the 2018 growing season. More information is available at: https://www.extension.iastate.edu/news/isu-research-farm-summer-field-day-june-20-near-kanawha

June 21, Northeast Iowa Silage Conference, Dubuque
9:30 AM to 3:30 PM at the Midway Best Western Plus, Dubuque (3100 Dodge Street). The conference will feature presentations from both academic and industry experts. This one-day conference will focus on the keys to growing, harvesting, storing and feeding high quality silage to beef and dairy cattle. Topics include quality corn silage before, during & after harvest, characteristics of corn varieties for silage, preventing molds and mycotoxins, pricing corn silage, silage in beef or dairy rations, and safety. Online registration and more conference information is available at: http://www.aep.iastate.edu/silage/

June 23, Breakfast on the Farm at Iowa's Dairy Center, Calmar
8:30 AM to Noon for the 9th annual Breakfast on the Farm. Provides breakfast and guided tram tours of the nationally-recognized Dairy Center. The kids will enjoy the chance to pet calves, plus families can visit several educational exhibits, milk a cow and see robots milk cows. More details available at: http://www.iowadairycenter.com/tours-events/breakfast-on-the-farm.php

June 27, ISU Northeast Research Farm Field Day, Nashua
1:00 to 4:15 PM starting at the Borlaug Learning Center, ISU Research Farm, Nashua. Elwynn Taylor, Extension climatologist, will kick-off the program providing his insights on crop weather for the 2018 growing season. Mahdi Al-Kaisi, Extension soil/tillage specialist, follows with
updates on various strip-till and no-till studies at the research farm. We will then convene outside for the farm wagon tours to include John Sawyer, Extension soil fertility specialist, to share his expertise on corn nitrogen fertilizer management (rate, timing, split-apply, N sensors, etc.), and finish with Brian Lang, Extension agronomist, to discuss and demonstrate crop scouting for insect pests. The field day is free and open to the public. Directions: From Nashua at the Jct. of Hwy 218 (Exit 220) and Co. Rd. B60, go west on B60 1.1 miles to Windfall Ave., then south 1 mile to 290th St., then east 0.2 miles to the farm. CCA credits will be available (1 SW, 1 NM, 1 PM, 1 CM).

June 28, Seventh Annual Iowa Swine Day, Ames
Showcases national industry speakers. Details at: http://www.aep.iastate.edu/iowaswineday/

June 28, ISU Southeast Research Farm Field Day, Crawfordsville
9:00 to noon plus lunch is a special session for Certified Crop Advisors (CCAs).
1:00 to 3:00 is the annual Field Day, which is open to everyone.
Details to be posted at: https://www.extension.iastate.edu/Pages/eccrops/meetserc.html

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