

# IOWA STATE UNIVERSITY

## Extension and Outreach

### **CROP NOTES for April 26, 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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## **WEATHER**

### **Soil Temperatures**

Interesting forecast for Saturday with predictions of 2-inches of snow along Hwy 20 and 5 to 9 inches of snow along Hwy 9.

It looks like it will be mid-week next week to get back to 60's/40's day/night temps.

Regarding soil temperatures... Here's 2 convenient websites to watch for 4-inch soil temperatures:

1. Daily average 4-inch soil temperatures available at the NPKnowledge website: <http://extension.agron.iastate.edu/NPKnowledge/>
2. Iowa Flood Information System website provides hourly readings. <http://ifis.iowafloodcenter.org/ifis/en/> For an estimated average daily temperature look at the 11:00 AM reading. To use this website go to the home page and click on "Launch IFIS", then click on the Satellite figure in the upper right corner of the screen, then click on the boxes for "Groundwater wells" and "Soil moisture gauges". Now you can click on any of the boxes in the Iowa map and pop up a screen with "Soil Info", click on that and you get soil temperature readings for the last few days (guide your mouse to the 4-inch soil temperature line). Not all stations may be in operation.

## **CORN** – *repeated from the last Crop Notes*

### **Recommended Plant Population**

On average, maximum grain yields in Iowa occur between 34,500 and 37,000 plants per acre (ppa), although there is significant variation across locations and years. This population range is 2,000-3,000 ppa greater than what was found in plant population research 5 to 10 years ago. However, when does the yield responsiveness to increased seeding rates plateau or stop? If we consider net return, we arrive at this point once increased seeding rates no longer cover the additional seed cost. On average, the best net returns occur with plant populations at harvest are between 30,000 and 35,000 ppa. Not every seed that is planted develops into a plant. Our recorded losses from seeding to plant survival range from 4 to 7%. So, on average, increasing seeding rates by 5% will insure that the proper plant population is achieved. We recognize that plant survival depends on many factors and may vary from field to field. For organic corn production where no seed treatments are used, the University of Wisconsin recommends increasing seeding rates by 18% above desired plants per acre.

### Abbreviated answers for corn GRAIN production on rate, date, depth and row spacing:

Rate: 34,500 and 37,000 plants per acre. Adjust rate for % germ and other field attrition factors.

Date: now, as long as soil temperature is >50°F and increasing, and field conditions fit to plant.

Depth: about 2 inches.

Row space: 30-inch rows still work well, but there is nothing wrong with narrower rows.

### Abbreviated answers for corn SILAGE production on rate, date, depth and row spacing:

Date and Depth are the same as for corn grain production.

Rate: Increase by 10% over that recommended for grain will often maximize silage yields, but not necessarily quality and milk production per acre.

Row space: Narrow rows (*i.e.* 15-20-inch or twin rows) generally provide a yield advantage over 30-inch rows for corn silage production, but not necessarily an advantage for quality and milk production per acre.

## Anhydrous Ammonia Application and Timely Corn Planting

The following article "Anhydrous Ammonia Application --Spring 2019" discusses considerations with a tight window for AA application and corn planting.

<https://crops.extension.iastate.edu/cropnews/2019/03/anhydrous-ammonia-application-spring-2019>

## Safe Handling of Treated Seed

The following article just posted by the University of Minnesota discusses safety issues such as wearing proper protective clothing (long sleeve shirts and chemical resistant gloves to protect yourself from exposure), bury any spilled seed to protect wildlife from feeding on the seed; and a few more items. Go to: <https://blog-crop-news.extension.umn.edu/2019/04/safe-handling-of-treated-seed.html>

## SOYBEANS

### Soybean Planting Rate, Date, Depth, Row Spacing, etc.

**Rate:** The general recommendation is to seed between 125,000 and 140,000 seeds per acre, regardless of row spacing and planting date, but usually including seed treatment especially with cooler soil conditions, with the goal to harvest 100,000+ plants per acre. Watch the % germ on the seed tags and increase the seeding rate accordingly for lower % germ. University recommendations from neighboring states agree. University of Nebraska recommends seeding 120,000 seeds/acre and aim for a final plant stand of 100,000 plants/acre. University of Wisconsin recommends to target a final stand of 100,000+ plants in productive fields, and 135,000+ plants in low productive fields or low productive areas within fields; and plant less than 140,000 seeds in white mold areas.

**Date:** Late April through mid-May is best as long as the soil is fit.

**Depth:** 1 to 1.5 inches, and never deeper than 2 inches. Adequate soil moisture is the most important factor controlling soybean germination. Soybean seed must imbibe 50% of its weight in moisture for germination to begin. Germination will be significantly reduced if moisture levels in the seed fall below 20% after the seed swells and the seed coat splits. This is why agronomists recommend placing soybean seed into at least 0.5 inches of moist soil at planting. Under dry soil conditions, this may not be possible without planting the seed too deep.

**Row space:** In general, ISU research shows an average yield increase of 4.5 bu/ac for narrow rows (15 or 20") compared to 30" rows.

### Soybean Inoculant: When, Where, and Why

In general, we consider adding rhizobia inoculum to soybeans if:

- 1) The field has no previous history of soybeans, or were not grown within the last 3-5 years.
- 2) Environmental factors occurred in the field that could negatively impact the survival of bacteria such as flood or drought. *Even just a week of flooded conditions could be a problem.*
- 3) The soil type is sandy; not a loam or silt loam.

4) The soil pH is too low for good bacterial development. Correct with a lime application for next year.

## INSECTS

### Common Stalk Borer Control in Corn – Option 1: Prescribe burn of grass bordering 2019 corn fields

For those that lose corn plants in the first few rows along grassy field borders or grass-back terraces, you may have a problem with Common Stalk Borer.



There are 3 basic options for controlling this pest. Option 1 tends to be the most effective if it can be done safely.

1) Still time for Option 1. Egg hatch has not started yet, so a controlled burn will still kill the eggs. The over-wintering stalk borer eggs are on the dead grass residue bordering corn fields. A controlled burn of the grass will destroy most of the eggs. Take the proper precautions: (a) Don't burn if roadside crews have established native plantings in your road ditches. (b) Be aware of roadside utilities (gas, electrical, communications) that could be damaged and you would be held liable. (c) Pay attention to 'no-burn' orders if windy or droughty conditions exist in the county. (d) Be careful of other trash in ditches (discarded oil or gas cans, broken glass, etc.). For prescribe fire planning and coordination, please read the following article:

<http://www.extension.iastate.edu/smallfarms/spring-time-prescribed-fire-time-iowa>

2) Some Bt corn controls or suppresses stalk borer, and some do not. Check the “Handy Bt Trait Table” for those

products: <https://lubbock.tamu.edu/files/2018/11/BtTraitTableNov2018.pdf>

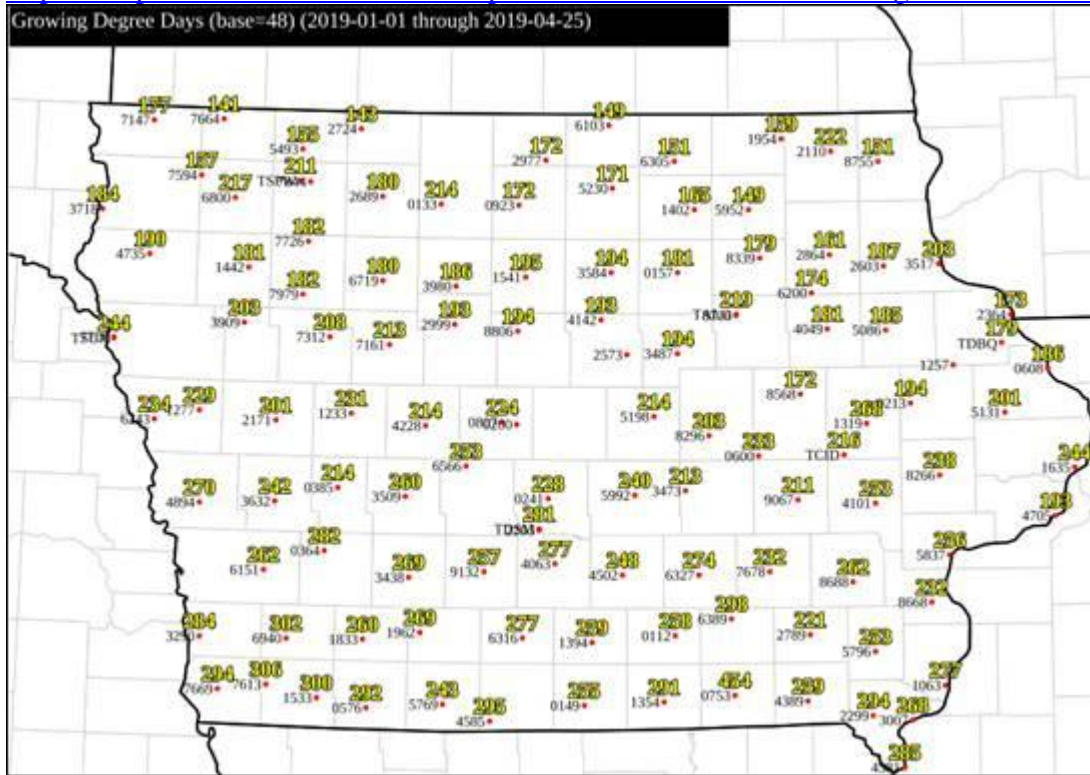
3) Otherwise we can wait for either Common stalk borer egg hatch or larval migration windows based on degree days, which I will report on when the time comes.

## Alfalfa Weevil

It's time for southern Iowa to start scouting for alfalfa weevil, which starts when >200 DD base 48 from Jan. 1, 2019 (see DD map below). Northeast Iowa waits for >250 DD base 48 from Jan. 1, which is probably still at least 10 days away. It's been over a decade since we have seen any problems with this pest in Northeast Iowa. But you never know when a larger population will appear. Although there is a chance that the cold winter of 2018-19 may cause somewhat reduced

alfalfa weevil populations. Tracking degree days (Base 48, starting Jan. 1) provides a heads-up when it's time to scout. Current DD in northeast IA are about 180 DD for the Hwy 20 region to 150 DD for the Hwy 18 region. A rough extrapolation would put 250 DD at about May 6 for the Hwy 20 region and May 9 for the Hwy 18 region. Greater risks would be on south-facing slopes and proximity to woodlands. The quickest and easiest way to initially scout for Alfalfa Weevil is to use a sweep net just to survey a field. If there are some alfalfa weevil in the net, then refer to the scouting procedure and threshold information in this April 2018 article

<https://crops.extension.iastate.edu/cropnews/2018/04/alfalfa-weevils-get-slow-start-2018>



## Pheromone Trap Moth Flights

<https://crops.extension.iastate.edu/blog/adam-sisson-ashley-dean-erin-hodgson/moth-trapping-begins-iowa>

## Black Cutworm

First flights into Iowa are now being detected, but nothing significant at this time. Once we detect significant flights we'll track 300 DD (base 50) from the flight-trap date to determine time to start scouting corn fields for any significant feeding from this pest. Stay tuned for more trap data.

## True Armyworm

First flights into Iowa are now being detected, but nothing significant at this time.

## WEEDS

### Check FieldWatch® Before You Spray

FieldWatch® provides a voluntary mapping tool to show pesticide applicators the locations of registered sensitive crops and beehives so they can make informed decisions regarding potential pesticide applications. Two mobile apps are available to improve access. For more information, go to: <https://crops.extension.iastate.edu/cropnews/2018/04/fieldwatch%C2%AE-%E2%80%93-you-spray>

### Planting Interval of Corn and Soybeans after 2,4-D or Dicamba Burndown Application

From a recent University of Nebraska article, here's general guidelines on planting intervals for corn and soybeans after applying 2,4-D/dicamba:

- We recommend NOT applying dicamba in pre-plant burndown applications unless you are planting Roundup Ready 2 Xtend soybean. FeXapan, Engenia, or XtendiMax are labeled dicamba products that can be applied in burndown before planting Roundup Ready 2 Xtend Soybean.
- If 2,4-D (4 lb/gal product) is applied at 16 fl oz/acre in a burndown program, the planting interval should be 7 days for corn and soybean.
- If 2,4-D (4 lb/gal product) is applied at >16 fl oz/acre in a burndown program, the planting interval should be 14 days for corn and 30 days for soybean.
- If dicamba is applied at 4 oz/acre or less in a burndown program, the planting interval for corn should be 5 days. If dicamba is applied at 8 oz/acre, the planting interval for corn should be 7 days.
- DiFlexx and DiFlexx DUO are dicamba products with CSI safener; therefore, corn can be planted any time after application of these product. Care should be taken, however, so that corn seed does not contact the herbicide.

The full article is available at: <https://cropwatch.unl.edu/2019/planting-interval-corn-soybean-sorghum-after-24-d-or-dicamba-burndown>

### New... Online Training for Paraquat Use

On March 8, 2019, the EPA announced that they have released a mandatory online training for applicators mixing, loading, or applying Paraquat (Gramoxone, Cyclone, Helmquat, Parazone). Details are posted at: <https://crops.extension.iastate.edu/cropnews/2019/03/new-epa-required-paraquat-training-and-additional-use-restrictions>



## Resources for Pesticide Applicators using Respirators

Some products, like Paraquat, require the use of a respirator. The Worker Protection Standard (WPS) requires that all pesticide handlers using products that require respirators do the following:

1. Receive a medical evaluation by a physician or other licensed healthcare professional.
2. Complete a fit-test to determine if the respirator forms an appropriate seal around the face.
3. Complete a training about the use, care, and maintenance of a respirator.

For details, go to: <https://crops.extension.iastate.edu/blog/elizabeth-buffington/using-pesticide-requires-respirator> Iowa's Center for Agricultural Safety and health (I-CASH) put together a list of medical providers across the state who conduct respirator medical evaluations and/or fit-testing. <https://icash.public-health.uiowa.edu/wp-content/uploads/2017/04/Iowa-Medical-Providers.pdf> You can also reach out to local healthcare providers or contact me if you need help finding someone to provide fit-testing.

## COVER CROP

### Rye Cover Crop and Planting Corn

The rye got a slow start this spring and is still short. Favorable weather conditions for control of rye with glyphosate is to have day/night temps of 60's/40's. Our 10-day forecast doesn't get back up to 60's/40's temps until next week Wednesday. A common recommendation is to herbicide kill the rye, then wait 10-14 days before planting corn. This appears to be more important with delayed termination of taller rye. For a few more details on this subject, see the March 2019 article on cover crop termination:

<https://crops.extension.iastate.edu/cropnews/2019/03/spring-cover-crop-termination>

## AG CENSUS

### The 2017 Census of Agriculture is Now Online

Taken once every 5 years, this is a complete count of U.S. farms and ranches and the people who operate them. This looks at land use and ownership, operator characteristics, production practices, income and expenditures. Go to: <https://www.nass.usda.gov/AgCensus/>

## EVENTS

### May 4, Iowa Equine Day, Ames

A day of professional speakers and clinician for youth and adults at the Hansen Agriculture Student Learning Center. For program details go to:

<https://www.extension.iastate.edu/news/iowa-equine-day-includes-educational-sessions-and-riding-clinic>

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