

IOWA STATE UNIVERSITY

Extension and Outreach

CROP NOTES for October 14, 2019 – *Follow-up on Weekend Frost*

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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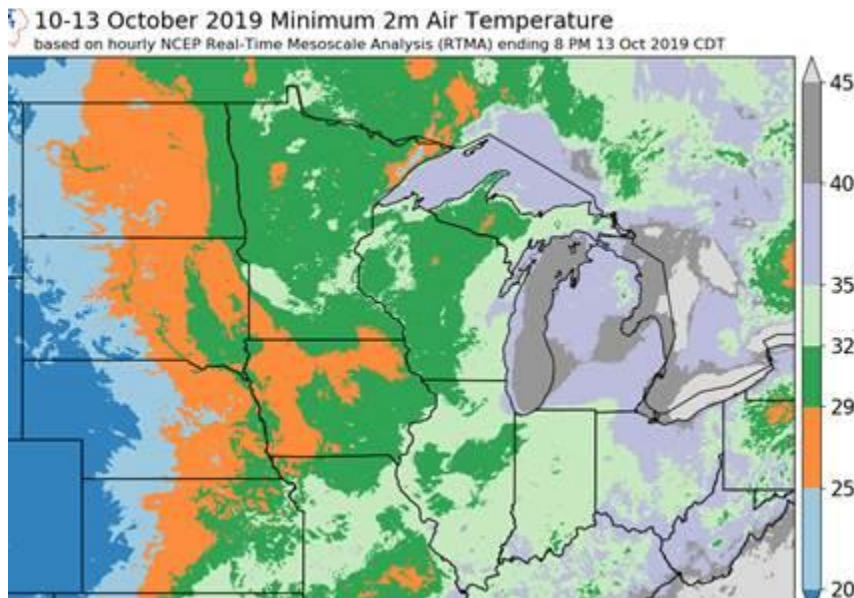
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WEATHER

Weekend Low Temperatures

Kudos to AccuWeather for the most accurate weather predictions. Much of northeast Iowa experienced a 28F killing frost (orange area on the map). This affects corn, soybeans and the warm-season annual forages (*i.e.* sorghums and millets). An alfalfa killing frost (24F) is still not expected until a chance on October 27 or definitely by mid-November. The good news is that this frost also affects most annual weeds, so maybe soybean grain harvest can proceed with less issues.



Corn and Soybeans

A partial frost that kills some leaf area reduces photosynthesis, grain fill, and yield potential similar to estimates in hail defoliation charts. Although with only about 35 corn GDD for the remainder of October, there won't be much additional dry matter added to corn and soybean grain production anyway. The hail defoliation charts in the Corn and Soybean Loss Adjustment Standards Handbooks provide a good estimate of potential yield reduction.

Corn, leaf loss chart is page 84: <https://www.rma.usda.gov/-/media/RMAweb/Handbooks/Loss-Adjustment-Standards---25000/Corn/2019-25080-Corn-Loss-Adjustment-Handbook.ashx>

Soybean, leaf loss chart is page 73: <https://www.rma.usda.gov/-/media/RMAweb/Handbooks/Loss-Adjustment-Standards---25000/Soybeans/2019-25440-Soybeans-Loss-Adjustment-Standards-Handbook.ashx>

For example, corn that was defoliated 60% (moderate frost) at the dent stage would have about a 10% yield loss relative to maturing normally.

Estimated % corn yield loss due to defoliation at various growth stages.

Stage of growth	Percent leaf area destroyed				
	20	40	60	80	100
	Yield loss (%)				
<i>Dough</i>	2	8	17	29	41
<i>Dent (R5)</i>	0	4	10	17	23
<i>Black layer (R6)</i>	0	0	0	0	0

FYI, references about harvesting somewhat immature and higher moisture corn and soybeans crops. Most of these articles were recently posted on ICM News and Blogs (<https://crops.extension.iastate.edu/cropnews>), subscribe for free:

- “Harvest Consideration For Frost Killed Corn”

<https://crops.extension.iastate.edu/blog/charles-r-hurburgh-mark-licht/harvest-consideration-frost-killed-corn>

- “Crop Quality in 2019: Another Unusual Year”
<https://crops.extension.iastate.edu/cropnews/2019/10/crop-quality-2019-another-unusual-year-0>
- “Verifying Combine Adjustments During Crop Harvest”
<https://crops.extension.iastate.edu/cropnews/2019/09/verifying-combine-adjustments-during-crop-harvest>
- “Soybean Drying and Storage” (*i.e.* green-beans, and other issues)
<https://www.extension.iastate.edu/grain/files/Migrated/soybeandryingandstorage.pdf>
- A very brief publication highlighting harvest tips for “Frost Damage to Corn and Soybeans”
<https://store.extension.iastate.edu/product/5140>

Sorghum-sudan Forages

The first few frosts raise the potential for prussic acid poisoning with sorghum-forages. When grazing or green-chopping species with prussic acid potential, avoid grazing on nights when frost is likely. High levels of prussic acid are produced within hours after a frost. Remove animals from the field if a frost is predicted. If a frost occurs, do not re-introduce animals to the field until the forage has dried thoroughly and has turned a light-tan color.

Without the occurrence of a killing frost (28F), fall harvested sorghum-sudan forages will still try to regrow. This regrowth will contain high levels of prussic acid. So after harvest, keep livestock off these fields until after a killing frost that will turn the plant tissue from wet, dark green to black and then a tan-gray color. This usually takes 5 to 7 days. Once at the tan-gray color, the forage is safe to graze.

Prussic acid content decreases dramatically during the hay drying process or ensiling. When ensiling frosted sorghums or sudangrass, its suggested to wait about 5 days after the frost before chopping to get past that elevated rise in prussic acid produced following a frost. Although, as long as you follow good ensiling practice, and allow for full fermentation of the silage (at least 8 weeks from harvest to feeding), the prussic acid content in the end-product is greatly reduced. Testing the feed to determine prussic acid potential prior to feeding is advised.

If you can achieve a dry-hay product, the hay curing process rids the plant of most of the prussic acid content. The difficulty, of course, is to achieve dry hay in October.

Baleage Harvest Tips

See attachment. With poor drying conditions for a hay option, harvesting forage as baleage could be considered. The attachment includes tips on equipment needs and the baleage process.

Alfalfa and Frost

An alfalfa killing frost is around 24-25F. Maybe some low spots in northeast Iowa got this cold for a short time. More likely a region-wide northeast Iowa killing frost occurs closer to October 27, and further south in northeast Iowa in mid-November (Hwy 20 region). However, still be cautious of light

frosts and heavy morning dews in that they can create an environment for slightly higher bloat potential with cattle grazing early morning.

Alfalfa and Last Harvest

For northeast Iowa (MN state line down to about the Hwy 20 region), regardless of a killing frost yesterday, or late October, or mid-November, the remaining alfalfa GDD for the season are so few that you can proceed anytime you have a fair harvest window. Try to leave some stubble height (up to 6-inches preferred, at least 4 if you can) to help catch snow and insulate the stand overwinter. Farther south, *i.e.* Hwy 30 region, the warmer weather and calculated GDD accumulations suggest to wait until about October 21 before cutting.

EVENTS

Oct. 21, Clinic on Harvest Weed Seed Control, Boone

10:00 AM to 3:00 PM. Free program, includes lunch and free CCA credits. Do you want to learn the latest information about mechanized weed seed control at harvest time? This workshop will cover one of the potential alternative weed management tools currently being used in other parts of the world: “harvest weed seed control”. This clinic should be of interest to anyone interested in learning how farmers in other regions are adopting to the threat presented by herbicide resistance.

Agenda:

10-Noon, Dr. Michael Walsh, Director of weed research, University of Sydney, will present on harvest weed seed control (HWSC) tactics used in Australia and how they might fit in

Lunch provided

1-3 PM, In-field demos and discussion.

Location: The ISU Field Extension Education Lab, 1928 240th St., Boone, IA.

While the technology is not currently available for our system, it is likely this will be a tool that will be of value in the near future. For more information about the program, go to:

<https://crops.extension.iastate.edu/blog/bob-hartzler-meaghan-anderson-prashant-jha/october-21-harvest-weed-seed-control-clinic> Please RSVP by Oct. 14 for an accurate lunch count.

Oct. 22, Great River Graziers Pasture Walk near Prosper, MN

Discuss evaluation of grazing and pastures for fall and planning for spring. Considerations for Karst geology/water quality in the Driftless region. More information

at: <https://crawford.extension.wisc.edu/files/2019/04/FINAL-GRGKGI-PASTURE-WALK-SCHEDULE-2019.pdf>

Oct. 24, Tri-State Ag Lender's Seminar, Dubuque

9:30 AM to 2:30 PM. The 33rd Annual Tri-State Agriculture Lender's Seminar on Thursday, Oct. 24 at the Best Western Plus Hotel, Dubuque IA. This year's focus is on market outlooks for livestock, grains and dairy, along with the issues of the farm technology, farm stress and tax laws affecting agriculture. The list of nationally recognized presenters includes:

- Dr. Mark Stephenson, UW Madison, UW-Extension: "Dairy Marketing and Risk Management Update"
- Dr. Larry Tranel, ISU Extension and Outreach: "Farm Mental Health and Grief"
- Doug Johnson, Moody's Analytics: "Convergence of the Big Three: Ag Economy, Ag Technology and Ag Experience"
- Kristine Tidgren, Center for Ag Law & Taxation: "New Tax Law and Legal Issues of Concern"
- Dr. Chad Hart, ISU Extension and Outreach: "Land, Grain & Livestock-Marketing and Risk Management"

This seminar has proven itself in assisting lenders and farm financial advisors in helping farmers manage that risk. For more information, go to:

https://www.extension.iastate.edu/dairyteam/files/events/files/ag_lenders_2019_flyer_and_registration.pdf The cost of the program is \$100 per person by Oct. 14. To register, contact Larry Tranel at ISU Extension in Dubuque County at 563-583-6496 or e-mail tranel@iastate.edu

Nov. 5-6, 49th Annual North Central Extension – Industry Soil Fertility Conference, Des Moines

Learn more about current soil fertility issues and research being conducted at universities across the North Central United States. The conference will include invited presentations from university and industry leaders, research reports from university soil fertility researchers, and posters outlining research by graduate students at universities across the North Central region. For all information about the conference, including registration and hotel arrangements, go to: <https://northcentralfertility.com/>

Nov. & Dec., Farm Bill programs to be Scheduled, many locations across Iowa

Coming in Nov. & Dec. across the state are Farm Bill programs to cover the decisions involved in election and enrollment in the 2018 Farm Bill. As sites dates and locations are finalized this page will be updated: <https://www.extension.iastate.edu/agdm/info/meetings.html>

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