

IOWA STATE UNIVERSITY

Extension and Outreach

CROP NOTES for October 8, 2019 – 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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WEATHER

Weekend Predictions of a 28F Killing Frost

A portion of NW Iowa will very likely experience a killing frost this weekend (Friday-Sunday) with temperatures of 28F or less. This can affect corn, soybeans and warm-season annual forages (*i.e.* sorghums and millets).

What will happen in NE Iowa? National Weather Service (NWS) predicts nothing lower than 32F, but AccuWeather is less optimistic. If we make it through this weekend in good condition, the next killing frost threat is not predicted until around Oct. 27.

<u>FRIDAY-SUNDAY</u> <u>NIGHT LOWS</u>	<u>NWS</u>	<u>ACCUWEATHER</u>
LIME SPRINGS	32	27
ST ANSGAR	32	29

CRESCO	32	28
DECORAH	33	29
WAUKON	34	29
CHARLES CITY	33	29
WEST UNION	32	29
ELKADER	34	30
WAVERLY	34	31
OELWEIN	33	30
WATERLOO	35	33
INDEPENDENCE	34	31
MANCHESTER	34	30
DUBUQUE	36	30

Corn and Soybeans

A partial frost that kills some leaf area has the same effect on yield reductions as insect feeding, foliar fungicide lesions, and hail damage. Reduced leaf area from any of these factors reduces photosynthesis and grain fill. We often use hail defoliation charts to help estimate frosted leaf area and potential yield reduction. Yield losses are negligible if frost occurs when corn grain moisture is below 35%. Otherwise, yield loss is assumed to be directly proportional to the stage of maturity and the amount of leaf tissue killed. The hail defoliation charts in the Corn and Soybean Loss Adjustment Standards Handbooks provide a good estimate of potential yield loss.

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.

ESTIMATED % CORN YIELD LOSS DUE TO DEFOLIATION AT VARIOUS GROWTH STAGES.

STAGE OF GROWTH	<i>Percent leaf area destroyed</i>				
	20	40	60	80	100
	<i>Yield loss (%)</i>				
DOUGH	2	8	17	29	41
DENT (R5)	0	4	10	17	23
BLACK LAYER (R6)	0	0	0	0	0

For your reference:

- Here is a recent blog “Harvest Consideration For Frost Killed Corn”

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

- Here is a brief publication with tips on corn and soybean management of a premature frosted crop. *i.e.* tips with green-beans and light-test corn, available at: <https://store.extension.iastate.edu/product/5140>

Sorghum-sudan Forages

How to deal with frost will depend on when it occurs, severity of the frost, the feedstuff and how the feedstuff will be offered to the animal. 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 re-grow. 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 or so 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, wait 5-7 days after the frost to chop it. Delay feeding silage for at least 8 weeks after ensiling. Testing the feed to determine prussic acid potential prior to feeding is advised.

Alfalfa and Frost

An alfalfa killing frost is around 24-25F. That will not happen this weekend and is predicted to not happen in northeast Iowa until early November. 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.

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-ija/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. and 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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