

CROP NOTES for April 9, 2020 – Cold Weather for the Next Week

Iowa State University Extension Information for Northeast Iowa

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<http://www.extension.iastate.edu/winneshiek/page/crop-notes-brian-lang>

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COLD WEATHER FOR THE NEXT WEEK

What does this mean for:

- Spring planted oats
- Spring planted alfalfa
- Established alfalfa stands
- Winter wheat (rye & triticale)?

EVENTS

- Breeding Management Webinar Series
- Dairy Calf and Heifer Association (DCHA) Annual Conference

COLD WEATHER FOR THE NEXT WEEK

USDA Climate Hub Mid-April Cold Event

In the next 9 days in northeast Iowa, from April 9 (Thursday night) to April 17 (Friday night), climatologists predict nighttime lows for most of those days to be below freezing.

Location	Predicted nightly low air temperatures (F)								
	Thur Apr 9	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri Apr 17
Decorah (Hwy 9)	27	36	38	27	23	21	26	28	31
West Union (Hwy 18)	27	36	38	26	22	21	27	28	31
Strawberry Pt (Hwy 3)	27	36	39	27	24	23	27	28	31
Manchester (Hwy 20)	27	38	41	29	25	24	27	28	31
Cedar Rapids (Hwy 30)	27	40	44	31	27	26	28	32	35

Spring Planted Oats

Even if any March planted oats have emerged by now, the main growing point is still below ground.

Spring Planted Alfalfa

Newly planted alfalfa that may have emerged by now actually has very good frost tolerance due to two main factors. One is their close proximity to the soil and the soil's radiant heat relative to the colder air temperatures. The other is that seedlings (cotyledon stage) have a rather high concentration of solutes (sugars and other compounds) in the cells that help lower its freezing point. However, once seedlings reach the 2nd trifoliate leaf stage they are more susceptible and a few hours at 26 F could kill them. If new seedlings are frost damaged, they will first appear to wilt and then die over the next 3 to 5 days. As long as at least one set of leaves escapes damage, the plant should recovery. Unless mortality is absolutely obvious, wait a week after the frost and count living plants per square foot. If more than 20 plants per square foot remain, the stand will survive in good shape. If there are less than 15 plants per square foot, consider interseeding more alfalfa into the stand.

Overwintered Established Alfalfa

If you have a good stand now, you will still have a good stand after this cold spell. Overwintering alfalfa has broken dormancy and lost its winter cold hardiness. It has visible shoot growth in fields in northeast Iowa, and certainly more growth in fields farther south. The general rule of thumb is if stand height in the field is less than 10 inches, no matter how hard it is hit by frost just leave it alone. Regrowth will come from below the frost-killed part of the shoots. For light frost damage, expect to see white leaf edges, and then leaves will later turn somewhat tan in color (Photos 1 and 2). New shoots in close proximity to the crown are quite cold tolerant. As the shoots lengthen, they are more susceptible to cold injury. Taller frosted shoots may wilt (goose-neck) as in Photo 3. Photo 4 shows more significant frost damage, but with recovery of new shoot growth from 10 days later. Again, the stands will recover, but those with more significant frost damage will set back the first crop harvest date by a week or more. There will also be some variability in damage across fields due to slope position and valleys.



Photo 1. Light frost damage.



Photo 2. Heavier frost damage.



Photo 3. Taller shoots hit by frost may wilt with the tops of the shoots killed. New growth will start below the killed area.



Photo 4. Significant frost injury killed much of the above ground shoots, but new growth is coming from the base of the plant.

Winter Wheat (rye & triticale)

The University of Nebraska wrote an article in 2013 describing spring frost effects on winter wheat. Effects on winter rye and triticale would be similar. Attached is their 5 page article, or find their 11 page publication at <http://extensionpublications.unl.edu/assets/pdf/ec132.pdf> For winter cereals, cold tolerance is very good through tillering stage. Once plants reach jointing stage, they are quite susceptible to mid-20's temperatures. Also playing a role is soil moisture (greater concern with dry soils), stand density (greater concern with thinner stands), topography (cold air settles in low spots), wind (more concern with still conditions), and length of time of low temperature exposure.

Jointing stage is when main growing point moves above ground. If you feel the stem, the growing point has a bit of a swelling to it. Or dig some plants and slice them open as in the photos below to determine the stage of development in your field (Photos from Kansas State University).



Photo 5. Growing point is still below ground.

Growing point has moved above ground. Jointing stage.



Photo 6. Growing point has moved above ground. Jointing stage.

EVENTS

Breeding Management Webinar Series

All webinars run from Noon to 1:00 PM. The following dates and topics will be presented:

- April 14, Nutrition's Role in Reproduction
- April 16, Using Reproductive Technology to Move Up the Breeding Season
- April 21, Focusing on Bull Power
- April 23, Heterosis: Capturing the Benefit

Find more information about the FREE webinars and registration at:

<http://www.iowabeefcenter.org/BreedingManagementSeries.html>

Dairy Calf and Heifer Association (DCHA) Annual Conference

Previously scheduled for April 7-9 in Madison, WI is rescheduled for April 8-9 in a virtual format.

DCHA Annual Conference registrants received a full conference registration refund for the in-person event.

To register for the DCHA virtual conference, go to: <https://calfandheifer.org/events//details/dcha-2020-virtual-conference-11>

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