

Iowa State University Extension Information for Southeast Iowa

By Jim Fawcett, ISU Extension Field Agronomist

4265 Oak Crest Hill Rd. SE

Iowa City, IA 52246

319-337-2145

October 8, 2009

FIRST FALL FREEZE

Fortunately it looks like the fall freeze will be coming later than normal this year, which should allow most corn and soybean fields in the area to mature. Most of the concerns around the first killing frost will be in managing sudangrass and sorghum-sudan hybrids, and there are also concerns about managing alfalfa around the time of the first freeze. Some things to consider:

Alfalfa

Alfalfa usually requires 24 F to completely kill its top-growth. Temperatures a few degrees above 24 degrees F will cause visible damage, but the plant will continue to grow using the remaining leaf area. To optimize plant development and its over-wintering ability, allow the plant to grow until a killing frost or mid-October; whichever comes first. If no killing frost occurs by mid-October and a harvest is desired, harvest the forage. The short daylengths and cold fall temperatures will minimize the use of root reserves prior to the "soon-to-come" killing frost.

There is an old, persistent false-hood around that alfalfa becomes toxic following a frost. Alfalfa does NOT contain any "toxic" compounds that arise from exposure to frost. However, alfalfa can cause bloat, and immediately after a frost, alfalfa's bloat potential is higher than normal. An over-simplified and brief explanation for this is: Bloat is largely caused by a rapid release of soluble proteins into the rumen. Alfalfa has considerable amounts of soluble proteins. As cattle eat alfalfa, their chewing action breaks up plant cells and slowly releases the soluble proteins into the rumen. If the cattle eat recently frosted alfalfa, they eat already-broken cells from the frost which rapidly releases soluble proteins which increases the chance of bloat. Once the frosted parts of the plant dry, alfalfa's bloat potential is back to normal.

Sudangrass and Sorghum-Sudan Hybrids

These crops require 28 F for a killing frost, however even a "light" frost requires special management. Prussic acid accumulates in the frosted tissue within a few hours after thawing and wilting. A "light" frost may damage just the tops of plants. If this occurs, delay grazing or harvest a few days after frost to allow the prussic acid to dissipate from the plant tops. Livestock can be returned to frost injured sudangrass (18 inches or taller) and sorghum-sudan (28 inches or taller) after 5 to 7 days.

Sometimes a "light" frost enhances development of young shoots from the base of the plants. If this occurs, delay sending livestock to graze this forage since these new shoots would be high in prussic acid. Ideally, wait for the new shoots to get to a proper grazing height (sudangrass 18 inches or taller and sorghum-sudan 28 inches or taller), but more than likely a complete killing frost will occur before that would happen. Once a complete killing frost occurs, wait until the frosted tissue is drying out (usually about 10 days) before grazing or harvest.

If haying the forage, the curing process decreases the prussic acid content as much as 75%, which removes the feeding concern. However, haying these forages this late in the season is nearly impossible because of poor dry-down conditions. If green-chopping the forage, chop only as much forage as the cattle will consume in 4 to 5 hours. Never green-chop the forage and let it sit on the wagon overnight. If ensiling, harvest at proper moisture for your storage structure to ensure good fermentation. Good fermentation takes a minimum of 4 weeks. The fermentation process will reduce the prussic acid content. Since immature plants can contain higher prussic acid levels, leave this forage ferment for at least 8 weeks before feeding. Never allow horses to graze sorghums or sudangrass at any time. See Steve Barnhart's recent article in the ICM News for more information at

<http://www.extension.iastate.edu/CropNews/2009/1005barnhart.htm>.

CORN

Corn Ear Rots

Although corn harvest is just getting underway, I've seen a lot of Fusarium and Diplodia ear rot again this fall, which could cause some storage and marketing problems. If in scouting corn fields, more than 10% of the ears have more than 25% of the ear covered with mold, it's recommended to harvest as soon as possible and dry the corn down to 15% to prevent the mold from spreading further and potentially producing mycotoxins. For more information on scouting for mold, including pictures, see Alison Robertson's ICM News article at

<http://www.extension.iastate.edu/CropNews/2009/1002robertson.htm>.

Drying & Storage Concerns

With the late maturing crop, corn will dry down more slowly in the field than normal, which will likely increase drying costs this fall. Greg Brenneman, ISU Extension Ag Engineer, reports that it takes 15 to 20 Growing Degree Days (GDDs) to drop corn about one percentage point of moisture. With normal weather, we can expect early October corn dry-down of 0.5 to 0.75% per day and decreasing in late October to less than 0.33% per day. Based on these drying rates, corn matured to black layer on October 1 is expected to drop into the low 20% moisture range by late October, and will require additional drying for long-term storage or sale. At least LP prices have come down from last fall.

FOR YOUR CALENDAR

Integrated Crop Management Conference – Ames, December 2-3

Choose from over 40 workshops featuring the latest crop production information from experts around the Midwest. The 2008 conference sold out early with over 900 attending. Registration information will be available soon at <http://www.aep.iastate.edu/icm/homepage.html>.

Ag Chem Dealer Update – Iowa City, December 14

The Ag Chemical Dealer Updates deliver the latest crop production recommendations, news and information directly from Iowa State University Extension. Each location features updates on weed, insect, crop disease and soil nutrient management brought to you by ISU experts. Meetings help prepare seed, chemical, and fertilizer dealers, crop consultants, farm managers and agronomists for the challenges of the upcoming crop production year. CCA credits available. Each meeting includes continuing instructional credits for Commercial Pesticide Applicator recertification in categories 1A (weeds), 1B (insects), 1C (diseases), and 10 (research and demonstration) for 2008. Registration information for all Ag Chem Dealer Updates, including the Waterloo location, will be posted at <http://www.aep.iastate.edu/acu/homepage.html> by the end of October.

Crop Advantage Series – Cedar Rapids, January 21

Craig Johnson, long time meteorologist, will be one of the featured speakers at this year's conference discussing global warming – is it real or mainly hype? Choose from many workshops on pest management, soil fertility, crop production and marketing. CCA credits will be available.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964.