AGnewsletter

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April 2009

www.extension.iastate.edu/washington

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Calculate or obtain cost of production at the Ag Decision Maker web site - www.extension.iastate.edu/agdm/

New Requirements Related to Commercial Pesticide Application

As the 2009 pesticide application season approaches pesticide applicators need to be aware of some changes to pesticide record-keeping requirements and the Iowa Bee Rule. The changes put forth by the Iowa Department of Agriculture and Land Stewardship took effect on Jan. 22, 2009.

New requirement

Commercial applicators must now include the time a pesticide application begins and ends. This additional recordkeeping item was added to the list under section 21-45.26(3) Record-keeping requirements of the Iowa Administrative Code.

Iowa Bee Rule changes

The previous Iowa Bee Rule that has been in effect for nearly 30 years was rescinded and replaced. The new rule has two components.

• One part pertains to beekeepers' responsibilities and requires them to register their apiaries on the sensitive crops registry if they want to protect their bees from pesticide exposure. Registration expires Dec. 31 of each year and may be renewed the following year.

• The second part of the new Iowa Bee Rule applies to commercial applicators and reads as follows:

Between 8 a.m. and 6 p.m., a commercial applicator shall not apply to blooming crops pesticides labeled as toxic to bees when the commercial applicator is located within one mile of a registered apiary. A commercial applicator shall be responsible for maintaining the one-mile distance from apiaries that are registered and listed on the sensitive crop registry on the first day of each month.

The labeling statement that identifies a pesticide as toxic to bees can be found under the "Environmental Hazards" section of the pesticide label.

Cold Injury to Alfalfa and Forage Crops

Most of Iowa alfalfa fields have broken winter dormancy. A few early April nights with temperatures in the low 20 degrees F or below will pose a risk of cold injury to alfalfa and other forage species. Low temperatures, whether visible frost is present or not, may affect the growth of both established forage plants and newly emerged seedlings.
Cold injury risk is reduced where snow or ice cover is protecting the new growth from low air temperatures. This issue is complicated by temperatures that are not uniform in and around the forage plants. Reported air temperature is measured a few feet above bare or grass covered soil surface. Plant tissue temperature is influenced by leaf surface color, density of the plant canopy, air movement within the canopy, the temperature of the soil, and more subtle conditions. The air within the forage canopy is likely 'layered', meaning the temperature at the top of the canopy is colder than the temperature at the soil surface, and below the soil surface in the taproot and crown area. This makes simple statements about the influence of the reported temperature misleading. To complicate things even more, leaf tolerance to frost varies somewhat among varieties and individual plants, and is not always related to winter hardiness of the variety.

Established Stands
Well established, developing forage plants have lost their winter cold hardiness. Exposed tissue is susceptible to cold temperature injury. Several hours of 24 to 25 degrees F temperature, or lower, will damage leaf tissue and may seriously damage buds and growing points. If recovered plants are several inches tall, low 20s air temperatures will likely damage one to several sets of trifoliate leaves exposed at the top of the canopy. The buds and growing stem tips are somewhat more protected and often continue to grow normally. One of the most difficult decisions in alfalfa scouting is whether these temperature ranges have damaged the crown/taproot tissue.

New Forage Seedings At emergence, alfalfa and most winter hardy forage grass and legume seedlings have good cold tolerance. But, spring cold snaps can hurt new seedings too. I tend to agree with the article from Oregon that states; "For alfalfa, at second trifoliate leaf stage (and older) seedlings become more susceptible to cold injury and may be killed by four or more hours at 26 ^{0}F or lower temperatures. Alfalfa seeded with a companion crop survives lower temperatures and longer exposure times before showing frost damage."

Where does that leave us? There will likely be leaf tissue damage in some parts of the state where overnight temperatures go lower than 25 to 26 ^{0}F for several hours. Slope position, soil temperature, companion crop of oats, wind, snow cover, all will influence what has occurred in a particular field or part of a field. It is too early to determine whether crown and taproot damage has occurred.

Management Suggestions
The only management suggestion at the moment is to wait a week to see what the damage is.

New seedings – Seedlings that were frozen so that all trifoliate leaves are discolored and dying will not regrow. If new seedings were permanently damaged, consider re-seeding as soon as possible. Keep the good areas and drill into thin or damaged areas. Tillage may not be necessary. If you think that a cereal grain companion crop, still present, will be too competitive or will impede the reseeding, then tillage may be required.

Established stands – If regrowth shows frost/freeze damage, wait a week to ten days then dig some random plants. Check whether remaining crown buds are still firm and intact. Split the taproots. Healthy taproots are creamy-white in color, with a firm texture. Freeze-injured taproots will begin to be watery, tan/brown in color and beginning to soften.
If cold injury to established stands was light, only affecting some of the early top growth, determine if the growing point of the stems have been damaged. If there was only leaf damage and the stem tip is recovering normally, follow your normal harvest plans. If the stem tips are permanently damaged, let the plant produce more branches and harvest a week or so later than normal – relative to the development of the new branches. Cold injured plants may recover more slowly than normal and should be given an extra week or two during one of the early summer regrowth cycles to recover their physiological vigor. If there has been widespread, severe cold injury, consider replanting a new alfalfa stand in an adjacent field.
Stephen K. Barnhart is a professor of agronomy

Corn Nitrogen Rate Calculator

Nitrogen (N) Response Trials Added
The Iowa Nitrogen (N) response trial database was updated March 24, 2009. Response trials were added from 2008 research and several trials from older research were removed. There are now 176 trials for corn following soybean and 78 trials for corn following corn. Being able to easily update the database with recent data is one of the many advantages to this dynamic approach for corn N rate guidelines. Having new response trial data allows rapid updating with changing hybrid genetics, rotations and climatic conditions.

With the updated database, calculated N rates have changed only slightly from last fall. The table below gives the N rate at the maximum return to N (MRTN) and the profitable N rate range from the updated calculator for several N:corn grain price ratios. You can work with any price of N and corn you wish when running the calculator. Output information includes the N rate at the MRTN, the profitable N rate range, the net return to N application, the percent of maximum yield, and the selected N fertilizer product rate and cost.

What is the Corn Nitrogen Rate Calculator?
The Corn Nitrogen Rate Calculator Web tool is a resource that aids N rate decisions for corn production and is helpful in determining the effect of fertilizer and corn price on application rates. The method for calculating suggested N rates is based on a regional (Corn Belt) approach to N rate guidelines. Details on the approach are provided in the regional publication Concepts and Rationale for Regional Nitrogen Rate Guidelines for Corn. This approach and the Corn Nitrogen Rate Calculator are now being used by seven Corn Belt states: Iowa, Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; with Michigan and Ohio being added this year.

Nitrogen rate guidelines in Iowa for different N and corn grain prices.

Price Ratio[1]	Corn Following Soybean		Corn Following Corn	
	Rate[2]	Range[3]	Rate[2]	Range[3]
$/lb:$/bu	lb N/acre			
0.05	145	131 - 162	199	182 - 213
0.10	125	113 - 139	177	164 - 190
0.15	112	101 - 123	159	147 - 172
0.20	99	99 - 111	146	136 - 157

[1] Price per lb N divided by the expected corn price. For example, N at $0.40/lb N and corn at $4.00/bu is a 0.10 price ratio. Corn held at $4.00/bu for all price ratios.

[2] Rate is the lb N/acre that provides the Maximum Return To N (MRTN). All rates are based on results from the *Corn N Rate Calculator* as of March 24, 2009 (http://extension.agron.iastate.edu/soilfertility/nrate.aspx).

[3] Range is the range of profitable N rates that provides a similar economic return to N (within $1.00/acre of the MRTN).

Resources for N Rate Decisions
The Corn Nitrogen Rate Calculator Web tool is located at http://extension.agron.iastate.edu/soilfertility/nrate.aspx

The regional publication Regional Nitrogen Rate Guidelines for Corn, PM 2015, can be ordered through any ISU extension county office, on the Web through the extension online store , or by calling (515) 294-5247. An electronic copy of the publication is available at www.extension.iastate.edu/Publications/2015.pdf

ISU Agronomy Extension Soil Fertility Web site http://extension.agron.iastate.edu/soilfertility/
John Sawyer, professor with research and extension responsibilities in soil fertility/nutrient management.

Iowa & Illinois to Host National Value-Added Agriculture Conference

The 11th annual National Value-added Agriculture Conference is set for June 2 to 4 at the Stoney Creek Inn and Conference Center in Moline, Ill.

"This conference is a 'must' for any public service provider or economic development agent that recognizes the importance of a strong rural economy," said Ray Hansen, program director, Value Added Agriculture Program, Iowa State University Extension. The conference will feature three tracks: local foods, agritourism, and business development. Integrated into the breakout sessions will be a focus on feasibility work as speakers provide a look at management, technical feasibility, finances, markets and more.

Conference keynote speakers include Gary Zimmer, Mary Holz-Clause, Sara Wyant, David Dahlquist and Michael Perry. Zimmer is a Wisconsin farmer and author dedicated to the biology of agriculture and continual soil improvement. Holz-Clause is interim assistant vice president for extension and outreach at Iowa State University and co-director of the Agricultural Marketing Resource Center. Wyant is president of Agri-Pulse Communications, a communications firm covering farm and rural policy issues from Capitol Hill. Dahlquist is a nationally recognized public artist and design consultant from RDG Planning & Design firm in Des Moines, Iowa. Perry is a Wisconsin humorist and author. His essays have been heard on NPR's *All Things Considered* and he has produced segments for a public television show.

Conference participants also will have an opportunity to ride the mighty Mississippi River on the Celebration Belle. Registration is $150 and includes conference materials, the opening night reception, refreshments, lunches and the concluding dinner on board the Celebration Belle riverboat.

To register or for more information, visit http://nvaa2009.homestead.com/. The conference is sponsored by the Value Added Agriculture Program at Iowa State University Extension, University of Illinois Extension, the Agricultural Marketing Resource Center and the National Food Industry Market Maker.

Get the Facts on Selling & Buying Manure in Iowa

Selling and Buying Manure in Iowa, a fact sheet developed by members of the Iowa Manure Management Action Group (IMMAG) is now available. This fact sheet is the 10th fact sheet in the series and is written to assist producers in Iowa who want to sell or buy animal manure. The series of fact sheets, including the newly released Selling and Buying Manure in Iowa, is available at http://www.agronext.iastate.edu/immag/pubsimms.html.

"This valuable tool comes at a time when more farmers are considering the application of manure as an alternative to high priced commercial fertilizers this fall," said Angela Rieck-Hinz, Iowa State University Extension program specialist. "The fact sheet discusses selling regulated and non-regulated manure sources as well as things to consider when buying manure."

Because of the many rules associated with manure management as regulated by either the Department of Natural Resources or the Iowa Department of Agriculture and Land Stewardship, IMMAG members identified topics they felt the state's crop and livestock producers needed as a resource. In addition to buying and selling manure, topics have included land application, winter manure application, crop availability of manure nutrients and financial resources for livestock operations.

IMMAG members and contributors to the fact sheet series include the Natural Resources Conservation Service, Iowa Department of Natural Resources, Iowa Pork Producers Association, Iowa Cattlemen's Association, Iowa Turkey Federation, Iowa Poultry Association, Iowa State Dairy Association, Conservation Districts of Iowa, Iowa Corn Growers Association, Iowa Soybean Association, the Coalition to Support Iowa's Farmers, Agribusiness Association of Iowa, Iowa Commercial Nutrient Applicators Association, Iowa Farm Bureau Federation, Iowa Department of Agriculture and Land Stewardship, Iowa Environmental Council, Iowa Pork Industry Center, Iowa Beef Center, ISU Extension and the ISU College of Agriculture and Life Sciences. The fact sheets are available through IMMAG's Web site at http://extension.agron.iastate.edu/immag/pubsimms.html. IMMAG members also distribute the fact sheets through their respective newsletters, magazines, producer mailings and the media. Copies can be printed from the IMMAG Web site.

Synching Estrus Cycles Easier With New Advancements

Advances in synchronizing the beef cow's estrus cycle continue to move forward, and the Iowa Beef Center at Iowa State University has worked to bring these latest efforts to cattle producers. More than three decades ago, all producers had to work with were synchronization systems involving feed-based progesterone products and prostaglandin. Today, researchers from the Beef Reproduction Task Force continue to do research trials and develop new and better systems for synchronizing the heat cycle of the beef heifer and cow.

"These new synchronization systems have led to better artificial insemination (AI) pregnancy rates and less or no labor necessary for heat detection," said Daryl Strohbehn, Iowa Beef Center beef specialist. At the January Applied Reproductive Strategies in Beef Cattle meeting in Colorado, the task force introduced a new fixed-time AI protocol called the "5-day CO-Synch + CIDR" for beef cows. This system, pioneered at Ohio State University, is an eight-day program that involves the use of a gonadotropin-releasing hormone injection at the beginning, the CIDR implant for five days and two injections of prostaglandin eight hours apart after CIDR removal. Seventy-two hours after CIDR removal and the first prostaglandin injection, cows are fixed-time inseminated in conjunction with a gonadotropin-releasing hormone injection.

"This new 5-day CIDR program is exciting because it gives producers a fixed-time AI option for cows that can be completed in just nine days with very good AI pregnancy rates," Strohbehn said. Successful results have been observed with the "5-day CO-Synch + CIDR" program in cows with a range of 55 to 80 synchronized pregnancy rates in 1162 cows. Applying synchronization systems successfully has been a challenge to many producers; the most significant problem has been getting the dates and timing of the injections and implants done correctly. To assist producers with this problem, the Iowa Beef Center at Iowa State University has provided the beef industry with the spreadsheet software program called "Estrus Synchronization Planner."

A newly updated 2009 version of the software, product number ESTRUS 0001, contains the most recent recommended protocols and is available from the ISU Extension online store. Cost of the CD is $25 plus shipping and handling. To learn more, go to the Extension online store at www.extension.iastate.edu/store/. The Iowa Beef Center at Iowa State University in Ames, Iowa, was established in 1996 with the goal of supporting the growth and vitality of the beef cattle industry. It serves as the university's extension program to cattle producers and is comprised of faculty and staff from ISU Extension and the colleges of agriculture and life sciences and veterinary medicine. Together, the Iowa Beef Center's members work to develop and deliver the latest in research-based information regarding the beef cattle industry. For more information about the Iowa Beef Center, visit www.iowabeefcenter.org.

Forage/Bedding Prices

Recent auctions in east central and southeast Iowa have resulted in the following forage/bedding prices:
Walcott (EC IA) 2nd Sat Dec-Mar; Noon Feb 14 09 Sale Alfalfa: (SmSq $165-185/T; (LgSq $120/T Jan); LgRd $125-160/T Feb) Mixed: (SmSq $180-200/T; LgSq $205/T; LgRd $95-145/T Feb) Grass: (SmSq $105-125/T; LgSq $80/T; (LgRd $100-120/T Jan) Feb_ Straw: (SmSq $-3.00/bale Feb) Cornstalks: (LgRd $40/T Jan) **Keosauqua** (SE IA) Sat 11:30A Alfalfa: SmSq $2.25-3.25/bale Grass : SmSq $1.75-2.50/bale Straw: SmSq $2.00-2.50/b ale **Kalona** (SE IA) 1st Thurs, Yr-round 11:30AM (& 3rd Thurs Oct-winter) Alfalfa" SmSq $4.10-5.20/bale; LgSq $32-54/b, $97.50-155/T; LgRd $38-54/b Mixed Leg/Gr: (LgRd $49-72.50/bale Feb) Grass: SmSq $4.10/bale; LgRd $26-34/bale Cornstalks (LgRd $35-39/bale Feb)