

# Field and Feedlot



Northwest Area Extension

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## Learning More about Nitrogen for Corn

by Joel DeJong, ISU Extension Crop Field Specialist

Nitrogen management is always a tough problem. If we use too much, we waste money and potentially harm the environment. If we use too little, then we can often cause significant yield losses. Also, not all fields respond the same. How do we manage for the best return with least risk in this situation? A new publication is available through ISU Extension that explores a recently developed regional Corn Belt approach to nitrogen rate guidelines. I think this can help explain what replicated research shows about determining the proper N rate for corn fields is and also help us calculate the "odds" for making these decisions.

*Concepts and Rationale for Regional Nitrogen Rate Guidelines for Corn* was developed jointly by soil fertility specialists from the University of Illinois, Iowa State University (ISU), the University of Minnesota, The Ohio State University, Purdue University, and the University of Wisconsin. Using recent nitrogen (N) rate trial data from multiple states, this publication illustrates a suggested approach for developing corn N rate guidelines. The approach uses an economic evaluation of N application rates, called the maximum return to N (MRTN). The goal of the regional effort was not to develop one N rate recommendation for the region, but rather to explain the science behind corn N use and fertilization requirements, and develop an approach to N guidelines that could provide more consistency between states. To read this publication on the web, go to this web site:

<http://www.extension.iastate.edu/Publications/PM2015.pdf>.

Although this publication is targeted for agronomists, crop consultants and agency personnel, I think crop producers should also find it interesting, if they really want to learn more about N management. The timing of this publication is important because of the uncertainty in appropriate rates due to historically high N prices. While economic return to N application has been a part of N rate recommendations, this publication brings a timely focus back to that question.

The publication primarily deals with N use in corn following soybean and continuous corn. The publication also addresses the question of determining N rates with ever-increasing corn yields. Instead of relying on yield goal, this publication outlines an approach that uses yield increase to N application and determines maximum economic return. Nitrogen application rate is critical because it improves corn yield dramatically, but also is one of the largest corn production expenses.

Another outcome of the regional effort is a Web-based tool called the *Corn Nitrogen Rate Calculator*. Producers in Illinois, Iowa, Minnesota and Wisconsin can use this tool to calculate the MRTN rate, profitable N rate range, net return, percentage of maximum yield, and other information directly from N response trial databases for each of the respective states. The calculator is located at:  
<http://extension.agron.iastate.edu/soilfertility/nrate.aspx>.

## Handling Drought-Stressed Corn

by Beth Ellen Doran, ISU Extension Beef Field Specialist

For most northwest Iowa producers, drought was most severe when corn was pollinating. Pastures are extremely short and even with recent rains, partial recovery of pastures could take six weeks.

So what are the feed options for beef producers? Drought-stressed corn can be grazed or used for forage – either as green chop or silage. **However, it is important to test the forage for nitrate content!** All ISU Extension Beef Field Specialists have a quick test for the presence of nitrates. If you would like to schedule a time to test some corn plants, I encourage you to contact your Extension Beef Field Specialist. This test will not indicate the level of nitrates in the corn plant. You will need to submit samples to a commercial testing lab to determine the nitrate level.

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In two northwest Iowa drought meetings on August 1, 48 samples were tested for the presence of nitrates. Plants with no ears ran about 90% positive for nitrates; whereas, 70 to 75% of those with ears were positive for nitrates. Plant height did not seem to make much of a difference at this point. The level of nitrates in these plants was not determined.

If you are harvesting corn for green chop, there are some things you can do to reduce the potential for nitrates. Raise the cutter bar as high as possible. Gradually introduce animals to green chop. Use other feeds that are low in nitrate as part of the ration. Feed green chop in small quantities throughout the day rather than one large daily quantity. Do not let green chop forage set on a wagon overnight. Feed 2-3 pounds of grain with high nitrate feeds. Nitrate levels tend to increase for 2 to 3 days following a rain, so take extra precautions during this time period. As plants mature, nitrate levels decline, animals become more acclimated and the chances of nitrate toxicity decrease with time.

Drought-stressed corn that is to be cut for silage should be harvested at the correct moisture level. The tendency will be to harvest too soon, resulting in silage with excess moisture, poor fermentation and reduced feed value. Normal harvest indicators such as kernel milk line and black layer may not apply in stressed corn. Producers may test for moisture using the heat lamp or microwave methods.

The optimal moisture level will depend on the method of storage, but is the same for drought-stressed and normal corn. Recommended moisture levels are as follows: 65-70% in horizontal silos (trenches and bunkers); 60-70% in bags; 60-65% in upright stave silos, and 50-60% in upright oxygen limiting silos. During the fermentation process, 40-60% of the nitrates may be eliminated. However, it is still important to test for nitrate level to know what you are feeding and how to best feed it.

Keep in mind that various nitrogen oxide gases produced during the ensiling process are highly toxic to humans and livestock. For the first three to four weeks after ensiling, do not enter a silo without first running the blower for 15-30 minutes.

For more information on drought management, check out these websites:  
<http://www.extension.iastate.edu/DisasterRecovery/drought.htm>

<http://www.iowabeefcenter.org/content/drought.htm>

## **Managing A Safe Work Environment**

by Jerry Weiss, ISU Extension Swine Field Specialist

Agriculture is one of the most hazardous occupations in the United States. A majority of all agricultural accidents involves some type of machinery or equipment. On pork operations, however, most occur during animal/human interaction.

People don't often think about what they might lose if they are injured, or how an injury might affect their life and the lives of those around them. If you're injured on the job, you can lose time and income while recovering. Medical and rehabilitation bills can pile up. You can lose the ability to function — temporarily or permanently - as you did before the accident. And no matter what your role is in the swine operation, be it owner/operator or the owner and manager of several or more employees, injuries to workers put tremendous physical and financial strains on the business. Worst of all accidents can cost people their lives.

In a safe environment, safety is everyone's concern including family, co-workers, visitors and you. You can protect yourself by simply being aware of your actions and your surroundings. Most injuries occur during routine chores when people get focused on the task and lose sight of the hazards around them.

The National Pork Board through the use of pork check off dollars has developed a Pork Production Safety System program to assist you in setting up a safety program for your operation and for training the employees that work in your production facilities. Some of the topics covered in this program are: avoiding slips, trips and falls; electrical safety; respiratory health and safety; personal protective equipment; lockout/tagout program; pig behavior and characteristics; safe animal handling; power washing and tractor safety; and more.

This program can be delivered in several ways. I would be able to work with you as an instructor, or you could obtain the materials and train yourself and your employees, or it also comes with CD and DVD disc for employees for self training. These materials are also available in Spanish. If you are interested in this program contact me and I will help you set up your safety program. Contact Jerry Weiss, at 712-335-3103, or [weissj@iastate.edu](mailto:weissj@iastate.edu) or contact your county extension office.

## 2006 Iowa State Fair Beef of Merit Results

by Dennis DeWitt, ISU Extension Livestock Field Specialist

The 2006 Beef of Merit Show was the second largest with 69 steers exhibited! This is great! Keep inviting new exhibitors to share your experience next year. The 69 steers averaged 1313 pounds, 3.21 average daily gain, 2.7 yield grade and \$2.62 retail value added per day on feed. Sixteen percent were average choice or higher, 43.5% were low choice, and 4 head were dark cutters. Fifty-nine percent were yield grade 1 & 2.

Fifty three percent of the steers met the Window A grid requirement compared to 76% last year and 13% met the Window B grid requirement, 6% less than 2005. Travis Thomas judged both Windows. The real disadvantage of judging the live show is that in the carcass merit show all steers are eligible for both Windows.

This is only the second time in the history of the Beef of Merit show that the same steer won both the High Cutability Grid and High Quality Grid Market windows. Joe Blankenship, Mills County, showed a red Simmental Angus crossbred steer that weighed 1330 pounds with a 3.79 average daily gain. The beef carcass was a yield grade 2.4 and an Average Choice quality grade. The steer's retail value added during the project year was over \$200 more than the average of the 69 steers in both windows!

Melissa Johnson, Butler County showed the reserve champion, which was the live show champion in Window A the High Cutability Grid Market window. The 1360 pound steer gained 4.07 per day and displayed a low choice yield grade 2 carcass. Josh Abel, Des Moines County showed his black Simmental crossbred steer to the reserve championship in Window B. This steer was the live show reserve champion in the High Quality Grid Market window. The 1365 pound steer gained a whopping 4.32 per day with an average choice yield grade 2.8 carcass.

Over \$4000 in prize money is being paid in premiums. The two champions are awarded \$500 by the Sale of Champions Winner's Circle Club, Vermeer Manufacturing of Pella, Al & Jeanne Conover of Baxter and the Iowa State Fair.

If you want to view the results on the Internet, access them through the Iowa Beef Center webpage at: <http://iowabeefcenter.org>

## Ag Link

by Ron Hook, ISU Extension Farm Management Field Specialist

Ag Link is coming to Northwest Iowa! Ag Link is a tried and tested seminar designed to provide multiple generation farm operations with the information needed to be successful. The seminar is four days packed with information and discussion that will help you discover how to address major issues that can lead to failure in a multiple generation farm business. Included among these issues are: whether an existing operation is large enough to support an additional partner; the basics of estate planning; alternatives for transferring farm assets; strategic planning and business planning.

Ag Link will provide general information necessary to plan entry into existing farm operations. Participants will receive a resource packet with worksheets, exercises and pertinent farm transfer planning information. There will be ample opportunity for those involved to discuss issues related to farm transfer.

The NW Iowa Ag Link seminar is scheduled for November 17-18, 2006 and February 16-17, 2007. The seminar location will be held at the Marina Inn at South Sioux City, NE. Families are encouraged to register members from each generation involved in the operation in order to fully benefit from the program. Registration will be limited to 15 multi-generation families who wish to participate. Look for additional registration details at your local Extension office in the near future.



## Iowa Pork Industry Facts

by Jerry Weiss, ISU Extension Swine Field Specialist

### Iowa Pork Facts

- In 2005, Iowa had 8,900 pig farms
- At any one time, there are approximately 16 million pigs being raised in Iowa.
- Each year, around 25 million hogs are raised in Iowa.
- Each year, around 60 million hogs are raised in the U.S.
- Iowa pork producers raise 25% of the hogs raised in the U.S., making our state #1 in pork production.
- There are approximately five hogs for every one person in Iowa.

Source: Iowa Agriculture Statistics Service [www.nass.usda.gov/ia/](http://www.nass.usda.gov/ia/)

