FIELD & FEEDLOT



ISU EXTENSION—NORTHWEST REGIONS JANUARY 2010 ISSUE

Extension Web Sites

Ag Decision Maker
http://www.extension.iastate.edu/agdm/
Beef Center
http://www.iowabeefcenter.org/
Manure Management
http://www.agronext.iastate.edu/immag/
Pork Center
http://www.ipic.iastate.edu/
ISU Extension Dairy Team
http://www.extension.iastate.edu/DairyTeam/

Focus on Dairy Calves: Follow Updated Colostrum Management and Calf Feeding Guidelines

By Chris Mondak , ISU Extension Dairy Extension Educator

Doing the very best you can with calf care and feeding pays off in terms of healthier calves and more productive cows in the lactation herd. Speaking at the Replacement Heifer Seminar at the AABP vet conference in September 2009, Dr. Godden, University of Minnesota, cited colostrum management as an area of opportunity to improve calf health. She summarized the key principles in an easy-to-remember scheme: Quality - Quantity - Quickness - Cleanliness - Monitoring.

- **Quality - Goal: 50g/L IgG** - Good quality colostrum contains IgG antibody levels at greater or equal to 50g/liter. Use a colostrometer to evaluate the quality. If it measures in the GREEN range, it has 50g/L IgG.
- **Pasteurize Waste Milk and Colostrum to Improve Calf Health and Survivability**
  A field study (2005) by Dr. Godden involving 439 calves compared growth weights and health in calves fed 1 gallon pasteurized waste milk daily vs. calves fed 20:20 milk replacement (1 lb powder). On average, the calves in each group weighed about 88 lbs, and the calves were weaned at 46-47 days.

Calves fed the pasteurized waste milk had better gain and health:

- Better Average Daily Gain (+.29 lbs)
- Better Health- fewer treatments for pneumonia and scours
- Better survival-fewer deaths, especially in the winter months.

Batch pasteurization of colostrum studies indicate significant reduction in salmonella, mycoplasma bovis, E. coli, listeria, and M. paratuberculosis (Johnes Disease pathogen) exposure to calves.

- **Quantity – Goal: 10% of calf's body weight**. Even if the colostrum is good, you must feed the proper amount so that the calf will ingest 100 grams IgG in the first feeding. Feed 10% of calf's body weight at the 1st feeding. Example: for a Holstein weighing around 90 lbs at birth (43 kg), it should receive 3.8 Liters (4 qts). Godden cited research by Faber (2005) that showed a significant difference in 1st & 2nd lactation milk production in those cows fed 4 Liters colostrum at birth compared to those fed only 2 Liters at birth. So, for larger calves (Holsteins and Brown Swiss), get a gallon in.
- **Quickness - Goal: Feed colostrum within 1-2 hours of birth**. This may be given via tube or bottle, or a combination-feed most by bottle, and give the rest via tube.
- **Cleanliness** - High bacteria counts in colostrum can cause calf sickness AND can block the absorption of antibodies from calf's digestive system. Refrigerate fresh colostrum in a small container to allow rapid cooling – colostrum in buckets does not cool down and allows rapid growth of bacteria.
- **Monitoring** – Work with your vet to set up a way to stay on track with colostrum management principles: Routinely check colostrum bacteria levels, and check serum total protein levels in calves to make sure they are getting adequate IgG antibodies. Work by Tyler says that total protein in calf serum of 5.0g/dl indicates serum IgG of 10mg/ml. Your goal should be to see over 90% of calves with total protein greater or equal to 5.0g/dl.

For more information, or to request a herd walk-through assessment of your herd and calf management operation, contact Chris Mondak at 712-737-4230 or cmondak@iastate.edu.

Grain Drying Review

By Kris Kohl, ISU Extension Ag Engineering Specialist

The 2009 crop year ended up about 400 growing degree days below average as of October 1st. The good news is that we have a big corn crop and the bad news is that it is very wet.

Now is a good time to evaluate how well our drying and handling systems performed and what changes we should make in the future.

Drying the corn – We have two options for drying the corn-low temperature, often called natural air, where we dry the corn at a temperature of less than 50°F where the bacteria are not active. The other option is high temperature which is in excess of 120°**.** Drying temperatures between 70° and 120° can cause corn to spoil faster than it dries. This drying temperature range is a "no man" zone that is best to avoid.

Low temperature drying tips: The rate of drying is determined by the flow rate of the air and the amount of moisture to remove. Natural air in a normal fall will dry the corn to 14.5% moisture which is about perfect for keeping it until July. The amount of moisture to be removed can be determined by subtracting the starting moisture from 14.5%. So, if we start with 21% corn, there is 6.5 points of moisture that need to be removed from each bushel. A natural air bin will remove 5 to 8 bushel points per hour per horsepower. So, in our example of removing 6.5 points, it will dry 0.77 to 1.23 bushels per hr per hp. The key is that we have only about 30 days before the corn on top of the bin is spoiled. Table 1 shows the drying rate for a typical 10 hp fan on a drying bin during October and November.

Table 1. **Drying Rate for a 10 horsepower fan on natural air bin.**

Moisture content of corn	Bushel points to remove	Bushels dried per day	Maximum wet bushels in bin
16	1.5	800	24,000
18	3.5	343	10,290
20	5.5	264	7,920
22	7.5	160	4,800

Assumes 1000cfm per hp

In December, when the high temperatures drop below 40°F, the drying rate drops to less than half the rates in Table 1. At this point, the corn in the bin should be less than 18% and cooled below freezing. Then turn off the fan and wait until spring to finish drying it. Remember to check wet corn weekly to make sure it is staying cold. Resume drying when the high temperatures are reaching 50°F.

While natural air works most years, you can see that in a very wet year, only one fill of the bin is allowed in a season and it may require 2 or 3 shallow layers to prevent overfilling when it is above 20%. Iowa State University does not recommend using natural air on corn over 22% because it is so easy to overfill the bin and end up with a mess.

High temperature drying – High temperature drying is done at temperatures greater than 120°F. At these temperatures, the corn will dry to 5% moisture or less unless we do something to prevent it. The methods of preventing it are to stir it, lifting the 15% corn to the top, preventing it from over drying. Continuous flow dryers move the corn before it is over dried. Using very shallow batches (less than 4 ft) like roof dryers, the process is stopped before the corn is over dried. High temperature drying at 120°F will remove 50 bushel points per hour per horse power and at 160°F, 80 bushel points per hour per horse power. Table 2 shows the rates of drying with these two temperatures.

Table 2. **Drying Rate for a 10 horsepower fan on heated air bin.**

Moisture content of corn	Bushel points to remove to 14.5%	Bushels dried per day at 120°F	Bushels dried per day at 160°F
16	1.5	8,000	12,800
18	3.5	3,430	5,488
20	5.5	2,640	4,224
22	7.5	1,600	2,560

Assumes 1000cfm per hp

Heated air drying needs to get done in about 5 days to prevent spoiling. Lowering drying temperature does not save on drying costs. While fewer gallons of LP are used per hour at lower temperatures, as seen in Table 2, fewer bushels will be dried per hour at lower temperatures. The efficiency of the dryer can actually go up slightly with a higher drying temperature.

Cool all grain to 40°F or less for winter storage. This will help prevent moisture migration within the grain that can cause surface spoilage. Molds, fungi, and insect activity are all significantly slowed at temperatures below 40°F. Grain can be cooled well below freezing and will keep fine. Large differences in temperature between the south facing bin wall and the very cold grain can cause moisture to migrate to the top of the Northeast part of the bin. Warming in the spring to 30 to 40 degrees is recommended to reduce this problem. It is important to warm the corn up above the dew point temperature prior to selling or it will often have a false high moisture reading in the elevator.

MWPS-13 Grain Drying and Storage Handbook
MWPS-22 Low Temperature and Solar Grain Drying Handbook.

Meetings Feature Feedlot, Cow-Calf and Climate Change

By Beth Ellen Doran, ISU Extension Beef Program Specialist

Feedlot Forum 2010 - The beef industry faces key issues – high feed costs, animal welfare and lower fed cattle prices. These are the focus of a co-sponsored feedlot meeting on January 19. The meeting, beginning 8:45 a.m. at the Corporate Center in Sioux Center, also features the District One Iowa Cattlemen's Association (ICA) meeting, a trade show displaying the latest cattle products and services, and a steak dinner!

"Feed Management: Bunker to Bunk" will focus on ways to control feed cost through improved storage and bunk delivery. "Hoops and Mono-Slopes" will feature cattle performance in the deep-bedded facilities and how management affects animal comfort. Rounding out the morning topics is "Using Crush Margin to Implement Risk Management." Crush margin is the difference between fed cattle revenue and the cost of feeder cattle and corn. It is a tool producers can use to determine when to place a hedge.

During the noon hour, sponsors will visit about new products and services. Bruce Berven, executive director, and Kent Pruismann, president of the Iowa Cattlemen's Association, will provide an update on state ICA programs and member issues. Rounding out the day's program will be "Market Outlook for Cattle and Grains" by Troy Applehans, market analyst for Cattle Fax.

Registration ($20/person) is due January 14 and includes a $10 beef certificate for all participants.

Doing Business in an Information-Based Marketplace – Most cow-calf producers would like receive more income for the calves they produce. A special meeting addressing adding to calf value will be offered at two locations in NW Iowa:

- Feb. 3, 1-4 p.m. – Fire Station, Moville
- Feb. 4, 9:30 a.m.–12:30 p.m. – Security State Bank, Sutherland

The program features ways producers can add value through changes in management and marketing. Topics include:

- Health protocols including vaccine recommendations, killed versus live vaccines, and handling compromised cattle
- Increasing calf value through new genetics and process verified programs
- Backgrounding considerations, budgets and rations
- Summary of national and local auction market surveys revealing what factors add to calf value

Registration for the cow-calf meeting is due three days prior to the workshop. If pre-registered by this date, the cost is $20; late registration is $30. Registration fees will be accepted in advance or at the door. The cow-calf meetings are co-sponsored by American National Bank at Moville and Security State Bank at Sutherland.

Climate Change Webcast

Climate change is a hot topic. ISU Extension will hold a webcast to discuss legislation that has been introduced and possible implications for agriculture. The webcast is February 1, from 7:00 to 9:00 p.m., at selected ISU County Extension Offices. Participants should contact their local County Extension Office to determine a viewing site.

While abstract to some people and hotly debated by others, regulation and/or legislation of greenhouse gases will make the issue much more tangible to Iowans in the future. A U.S. Supreme Court ruling last spring granted EPA the authority to regulate greenhouse gases. The House and Senate have both introduced legislation on how climate change will be addressed, which could come to a vote this spring.

Contact Information: For more information on any of these meetings, contact Beth Doran, ISU Extension Beef Program Specialist, at 712-737-4230 or doranb@iastate.edu

Swine Producers Risk Management Sponsored by RMA

By Dave Stender, ISU Extension Swine Program Specialist

Risk management has taken on a new level of importance for swine producers these days as markets have seen unprecedented swings over the last couple years. We have seen corn prices in the $7+/bu range and $2+/bu within months. Hog prices have also fluctuated wildly over the last couple years. We have seen hogs sell in the 80's and in the 40's within a short timeframe. This fall, we had $50/cwt prices in August, a typically high priced period, and now $60+/cwt hogs in December, a time when hog prices are usually pressured.

Now is the time to review your knowledge regarding risk management tools. An educational workshop is being offered at 3 locations in NW Iowa - in Newell (Feb. 11 at 10 a.m.); Sheldon (Feb. 11 at 4 p.m.); and Algona (Feb. 12 at 10 a.m.).

This will be a hands-on computer model simulation workshop. Participants will make decisions about buying corn and selling market hogs based on crop and livestock reports. These decisions will be in the computer simulation for a typical marketing year. Those in the workshop will be able to see how the risk management tools work in simulated markets.

The workshop is designed to be a fun learning environment where participants compete against each other for superior risk management strategies based on real crop and livestock reports from a historical year.

The workshop will not be at a beginner level; however, there is a tutorial available online to review the basic principles of using hedging, options, Livestock Gross Margin and Livestock Risk Protection insurance.

For more information, contact your county Extension Office or call Dave Stender at 712-261-0225.