ISU Extension View

News from ISU Extension to Iowa Dairy Producers

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Remodeling Your Dairy

Over the past several years ISU Extension has put forth a concerted effort to assist dairy families remodel operations. Through "low-cost" parlor tours, facility assessments and financial planning, many dairy producers are looking forward to a positive future in dairying.

It is very important to realize that remodeling your operation can be cost-effective in the long run and need not be expensive. To think that many operations can build a very labor efficient parlor for the cost of a new or used pickup truck is still a radical idea. However, many producers are proving it can be done.

So, we encourage you to take advantage of the parlor tours in the upcoming week. We can be as competitive as anywhere in the country producing milk.

Dale Thoreson / Larry Tranel
ISU Extension Field Specialists
Dairy/Beef and Forages, NE Iowa

Check out the ISU Extension Dairy Parlor Tours

Stop by as many farms as your schedule permits. Learn about parlor performance, cow flow, impact on the dairy farmer's health, costs to build and much more.

March 22, 2004
10:30am Our host will be Larry Maiers. Take Hwy 20 into Earlville to stop sign, left (west) on D22 about 1 mile to 260th Avenue, take right to 1928 260th Ave (2nd place). **12:30pm** Our hosts will be Rick, Ann and Randy Cook. From Hwy 20, take 136 South of Dyersville, 2nd gravel road (Rockville) to right to 32733 Rockville Road.

March 23
10:30am Host will be Jeff and Collen Lawler, take Y21 North of Peosta, to 18655 Old Highway Road. **12:30pm** Our hosts will be Kevin and Elaine Johnson. From 151 South (South of Peosta 8-10 miles), turn right just past the church to 2878 Fairway Road, 1st farm on right.

March 25
10:30am Lloyd Nolt. 3419 Orchard Lane, Osage. 641-732-1413 Directions: From Osage go East on Hwy 9/218 1 mile, South on T42 1½ mile, East on Orchard Lane ¼ mile. On South side.
1:00pm Jim and Eleanor Hageman, 1459 State Hwy 150, Calmar. 563-534-7985. From Calmar go South 1 ½ mile on Hwy 150. On West side of road.
2:30pm Tom and Jenny Melcher. 1411 111th Ave, Postville. 563-567-8135. From Postville go West ¼ mile on Hwy 18/52, Northwest on Hwy 521 ½ mile, North on 107 Avenue 3 miles, West on Maple Valley Road ¾ mile and North on 111th Avenue ¼ mile. On West side of road.

March 26
10:30am Verlyn Fink, 24632 120th St. Parkersburg. 319-346-1927. From Parkersburg go South 3 miles on Hwy 14, East 1 ¾ miles on D17. South side of road.
1:00pm Ron Strottman, 2220 Piedmont, Readlyn. 319-279-3997. From Tripoli go 5 ½ miles south on V43. On west side.
2:30pm David Paul. 14282 120th St., Maynard. From Maynard go 2 miles North on W25, East ½ mile. On North side.

Please Join Us in our effort to "Remodel the Iowa Dairy Industry".

IOWA STATE UNIVERSITY
University Extension

Helping you become your best.

ISU Extension DAIRY TEAM
"Bringing Profits to Life"

NE Iowa Dairy Extension Field Specialists

Dairy/Beef and Forages
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- *Dr. Lee Kilmer*
- *Dr. Leo Timms*

Extension programs are available to all without regard to race, color, national origin, religion, sex, age or disability.

Inside This Issue:

Midwest Milking Parlor Users Can Become More Efficient

Adapted from Jennifer Kuening, UW-Extension

Midwest dairy farmers who use milking parlors spend more time and money milking fewer cows than producers in the rest of the US, according to Doug Reinemann, UW-Extension, milking equipment specialist. "The Midwest has a lot of catching up to do if we want to stay in the ballgame," Reinemann said.

Reinemann cited results of the 2003 Dairy Wage Survey, conducted by the University of California-Davis that show the Midwest lags behind the West, Southeast and Northeast in labor efficiency (the number of cows milked per person) and economic efficiency (the cost of milking each cow).

In the Midwest, people using milking parlors milk 68 cows an hour on average. The rate is almost double at 132 cows an hour in the West. In the Southeast, parlors milk 96 cows an hour. In the Northeast, they milk 93 cows an hour. The real differences in efficiency stand out, however, when you look at how many cows one person can milk in an hour. Workers in the Midwest, at 31 cows per person per hour trail well behind workers in the West (57 cows and hour), Southeast (60 cows an hour) and Northeast (46 cows an hour).

While the labor cost is more per hour to run a parlor in the West ($23) than in the Midwest ($19), Southeast ($15) or Northeast ($17), the cost for each cow milked is almost twice as high in the Midwest as in the West. The cost of labor to milk each cow is 4.3 cents in the Midwest, 3.9 cents in the Northeast, 2.6 cents in the Southeast and 2.3 cents in the West.

The study also showed that hourly wages for milkers are the lowest in the Midwest and the average number of cows milked less than half of the number in the West. Several interesting points emerge from these numbers.

- Milking parlors in the Midwest are "overpopulated" compared with other regions and the efficiency of our milking parlors is behind every other region in the country.
- The Midwest lags behind other regions in wages for milkers.
- The productivity of labor in the Midwest is only about half of that in the West and Southeast and 2/3 of that in the Northeast.
- The cost of milking a cow in the Midwest is the highest of all dairy regions and almost double that of the West.

Reinemann has some advice for dairy producers who hope to increase their efficiency and productivity:

- Don't put an extra person in the pit. Adding a second or third worker to a parlor smaller than a double 12 or so is never a good economic move because the number of cows milked per hour never increases proportionately to the added labor cost.
- Build reasonably sized parlors. The economic optimum for herds up to about 600 cows is a double eight.
- Finally, pay good workers a decent wage. Inspire excellence and reward. It pays off.

Remodeling Dairy Parlors Simple

By Larry Tranel, ISU Extension Dairy Field Specialist

Dairy producers are often surprised to hear that for very little money ($2,000 - $10,000) we can easily increase their milking parlor capacity by over 60% simply by changing the angle from a herringbone to a parabone (65-70 degree angle) design.

As long as there is 17 feet of width or greater, many herringbones are easily adapted from 5 on a side to 7 to 9 on a side and many double sixes can be made in double 9-10's.

To figure how many cows your old herringbone could handle, simply come back from exit wall 4-5' and measure the possible pit length. Subtract 2' which determines the turning angle and divide the remainder by 27-28" per cow. This will give you the number of cows you could have on each side.

If you can get 2-4 more cows per side, consider how that might improve your milking time versus the cost of doing the remodel. Most parlor remodels can pay back with labor savings in less than a year and can improve ergonomics as well.

For more information or if you would like myself or Dale Thoreson to visit your dairy parlor to consider your remodeling, simply give us a call at 563-583-6496 or 319-267-2707, respectively.

DRY PERIOD LENGTH: HOW SHORT IS LONG ENOUGH *by Dr. Leo Timms*

Research and field evidence over the years has substantiated that a dry period or resting (non lactating) period was essential to achieve maximum milk production during the next lactation. Many of the early studies substantiated that 45-60 dry was optimal for milk production. However, many of these studies were retrospective in nature, with very few observations regarding short and long dry period lengths, and many of these were associated with health problems or conditions and/ or low production. **Recently, a set of planned animal trials where an appropriate number of healthy animals were grouped and assigned randomly to defined dry period lengths were conducted to assess the impact of dry period length on milk production, milk composition, nutrition, and animal health (cow and calf).** The objective of this article is to summarize the information from these planned animal trials that assess the effects of dry period length on animal performance and profitability.

Milk production or yield

Retrospective studies

Early trials and retrospective evaluations regarding the impact of dry period length on milk production used mostly DHIA data comparing milk production at different dry period lengths. **Twelve studies from 1936 – 1996 used variations of this technique. They resulted in relative yields of 82.5 – 98.8%, with most studies comparing basically less than 30 days (most studies close to 30 days though) to roughly > 50 days**. Many cows with short dry periods were associated with lactations started with abortions, twins, miscalculated breeding dates, and seasonal effects of heat on gestation length, while many long periods with low production and early dry off.

Controlled or planned animal trials

Since 2000, 5 animal studies, (all conducted in US) with modern cows and management, have compared 30- and -60 day dry periods with 2 of these studies including a group(s) with no dry period prior to parturition. In these studies, **30 day dry periods were associated with 0 – 3.6% lower milk production compared to 60 days dry**. **Animals with no dry period were associated with 11.2 – 14.9% lower milk production compared to 60 days dry. Notably, the 0 – 3.6% reduction in milk yield occurring during the subsequent lactation had been recovered from the previous lactation through the additional 30 days of milk with the 30 day dry period.** Cows > 2nd lactation with no dry period and administered BST continuously (every 14 days) had a 3.8% milk reduction compared to 60 d dry. **First lactation animals going through their first dry period were associated with production losses in subsequent lactation of 25% (0 d dry), 20% (0 d dry + cont. BST), and 7% (30 d dry) compared to 60 days dry.** This may result from differences in mammary tissue growth and differentiation, or just the metabolic and nutrient needs for body growth as well as lactation, but emphasizes a point that this group should be treated separately and appropriately.

Milk composition

There have been very little difference shown in milk composition (fat, protein). Some studies have shown significantly higher protein % in 30 and 0 vs 60 d dry, but this probably results from a decrease milk volume in those groups.

Milk quality (somatic cell counts)

Studies comparing 30 – 60 d dry have shown no or slightly higher SCC with 30 d dry with no associated increases in clinical mastitis. Animals with no dry period compared to 30 / 60 days have significantly higher SCC, with no associated increase in clinical mastitis. Lack of a dry period eliminates the potential to use dry cow antibiotic therapy to cure existing lactation infections. DCT can be utilized with a 30 d dry period with increased attention to post calving milk screening for antibiotics, and added attention to meat withdrawl times.

Dry matter intake Studies have shown no effect or decreased DMI pre and postpartum associated with 60 d dry compared to 30 and 0. This possibly resulted from the 0 and 30 d animals being on a continual high diet plane, where the 60 d dry were administered a far off dry cow ration.

Body Condition Score and Body Weight Changes

Most studies show no differences in BCS or BW prepartum, but a few see lower BCS and BW (more loss) postpartum in 30 and 60 vs 0 d dry. This is associated with the increased milk production in these groups (30 / 60) compared to 0 d dry.

Animal Health/ Reproduction

Most studies show no differences in metabolic and infectious diseases associated with varying dry period lengths. However, most studies have limited numbers. The Wisconsin study showed higher NEFA, BHBA, and liver triglycerides postpartum in 30 and 60 d dry animals compared to 0 d dry, probably associated with significantly higher milk production and lower DMI. There were no difference in reproduction between 0, 30, and 60 in the Arizona trial (small numbers statistically). The Wisconsin study showed significantly better reproduction in animals with 0 d dry compared to 60 d dry. These animals also gave 12 lbs less milk with higher DMI.

Calf Birth Weight / Colostrum Quality

There were no differences in calf birth weight across dry period lengths / trials. A reduction up to 40-50% of IgG, from dams with 0 d dry compared to 30 / 60 d dry, has been shown.

In Summary, Results substantiate a dry period is necessary. Animals with no dry period result in significantly lower milk production, IgG in colostrums, and higher SCC. Results show a slight milk decline in 30 vs 60 d dry in the new lactation, but this was compensated by 30+ days milk in previous lactation. **A dry period length of 40-45 days may be proper for many herds.** Attention should be paid to precise breeding records, pregnancy diagnosis, and shorter gestations during heat stress when considering < 40 d dry. A shorter dry period (~35-40 d) may make it possible to feed one ration across the dry period. **Animals entering their 1st dry period need 45-60 d dry**. (A full length paper is available).

Avoid the "Three Manure Meals" by Removing Calves Immediately after Birth **adapted from Fond du Lac County, WI**

Dr. Sheila McGuirk reported at the Midwest Herd Health Conference that 40% of dairy farms cannot supply an adequate number of replacements from their own herd. The main reason cited in a USDA 2002 study showed preweaned heifer calf mortality at 8.5% and another 2% by calving.

Dr. McGuirk believes the key to preventing early calf health problems is immediate removal of calves from their mothers. The longer the calf stays with her mother, the greater chance she has to receive the three manure meals before adequate colostrums is ingested with life-protective antibodies.

The risk of manure meals comes:

1) when the calf is born
2) when the calf seeks to suckle
3) during the suckling process

Calves try to stand immediately after birth. As they attempt to stand, they often fall nose first in the maternity bedding. Dr. McGuirk says it only takes a pea-sized amount of manure for the calf to contract Johnes. Other harmful pathogens include E-coli, salmonella and cryptosporidium.

Within 90 minutes of birth, the calf will begin to seek a teat to suckle. The calf often starts to seek a teat on the underside of the mother's belly and/or on the side of the rear legs. In many cases, these areas are contaminated with manure. Finally, the calf reaches a teat and gets its third potential manure meal before adequate colostrum is consumed for protection.

Another reason to remove the calf from the mother is inadequate high quality colostrum consumption within 24 hours of birth. In the USDA study, 43.9% of the calves were not separated from their mothers, of which 23.1% received all their colostrum by nursing. It was further reported that 61.8% of the calves received less than the four quarts required for passive immunity. Often the suckling calf does not consume four quarts with the desired four hours after birth.

The best colostrum for passive immunity is right after birth. If colostrum is harvested 6 hours or longer after birth, it becomes more diluted as the mother starts to secrete normal milk.

THE MOST IMPORTANT ASPECT of feeding colostrum is **VOLUME! A minimum of 3 quarts are recommended for Jerseys, Guernseys and Ayrshires , while 4 quarts are recommended for Hosteins and Brown Swiss.**

To determine adequate colostrums or antibody passive transfer, it is recommended to periodically blood test 12 calves. The serum protein concentration test from blood samples can be conducted as soon as six hours after feeding colostrums, but no later than one week of age. Typically 2 of the 12 calves will fall below the required 5.5 gm/dL if serum protein concentration. That's normal! However, if three out of 12 (25%) or more fall below the cut point 5.5 gm/dL, then you have a problem.

In summary, dairy producers need to move calves from their mothers immediately after calving. Now, how do we get calves moved? It's going to be different on every dairy farm, depending on size and number of people working in the calving area. The most important thing is to make it a top priority!

Whether it Be With Your Finances, Friends, Faith, Family or the Farm:

The Most Important Thing

Is to Keep the Most Important Thing

The MOST IMPORTANT THING!

Did you know… ***http://***www.edu/milkquality/

--Clinical mastitis is increased 1.87 times as the percentage of dirty stalls increase.

--74% of clinical coliform mastitis is prevented by cleaning manure from stalls.

--Food borne pathogens are recovered from 27% of bulk tank samples.

Milk Production and Population

by Robert Tigner, ISU Extension Farm Management Specialist, NE Iowa

One of the more interesting analyses of US milk production was recently completed by the Central Order Milk Market Administrator. The analysis compared milk production and population geographically for the lower 48 states. The market administrator used time zones, county population numbers from the US Census Bureau and monthly consumption of dairy products in the analysis.

Part of the reason the analysis used time zones is the wide differences in population in the time zones. Second the Rocky Mountains, located in the western part of the Mountain time zone, are generally recognized as a major barrier to economical east-west milk and dairy product movement.

Annual per capita US milk consumption, beverage milk and manufactured dairy products, is approximately 600 pounds, or 50 pounds monthly. Per capita milk marketings in excess of 50 pounds monthly can be considered surplus for a time zone. Table I below presents monthly milk marketings, per capita, for two months, May and December and compares these months for two different years. May is usually a seasonally high milk production month and December a seasonally high consumption month.

Table I. Monthly Per Capita Milk Marketings, in Pounds

Time	May		December	
Zone	5/96	5/01	12/97	12/02
Pacific	63.4	76.7	65.2	75.7
Mountain	74.9	84.5	75	94
Central	57.5	54.3	53.9	51.3
Eastern	29.7	30.3	28.7	29.1

Source: FMMA, Central Order.

The most obvious inference from Table I does not produce enough milk to meet its needs. Approximately 40% of its dairy product consumption must come from other time zones. The Eastern time zone has 48% of the US population and 30% of US milk production. Second the Central time zone is not producing enough milk to meet its needs and meet the shortfall of the Eastern time zone.

A second inference from the table is that the Mountain and Pacific time zones are producing large amounts of excess milk for their populations needs and this excess has increased since 1996. The least populated time zone is the Mountain with 6% of the contiguous US population and 12% of the December 2002 contiguous US milk production. The Pacific time zone had 26% of milk marketings with 16% of the contiguous US population for the same month. For December 2002, these two time zones marketed 81 pounds of milk per capita, 31 pounds in excess of their needs, for a total of 2 billion pounds.

Reducing Ammonia Nitrogen in Milking Center Wastewater and Feedlot Runoff ***by Dr. Dan Meyer***

Normally ammonia nitrogen in feedlot runoff can be over 100 milligrams per liter (mg/L) according to Dan Meyer, ISU Ag Engineer field specialist in Fayette. The problem is even in low amounts ammonia nitrogen can kill fish.

Recently released research data over a five year period on Iowa State University's 380 head beef research farm shows reductions of 81% in ammonia nitrogen in their feedlot runoff by utilizing a diked grass filter with tile lines beneath it (a manure solids settling basin preceded the diked filter. The incoming manure from the settling basin was 109 mg/L and the outgoing liquid from the tile lines was about 21 mg/L.

Iowa State University Beef Center used a diked grass filter area of 120 feet by 350 feet with 3 foot dikes. The 3 foot high dikes correspond to holding a 25 year-24 hour storm event on the feedlot. This translates to 20% of the area of the feedlot. (The previously recommended feedlot runoff control design was a 1 square foot of feedlot area to 1 square foot of grass filter after a solids settling basin). The diked grass filter holds all the runoff until it soaks into the ground. The ISU unit has three 4 inch tiles lines underneath the diked grass filter which are about 40 ft on center.

The soil removes phosphorus and nitrogen and converts ammonia to nitrate which is much safer for fish. The total phosphorus drop through the diked grass filter was 77%.

This same concept can be used on dairy milking center wastewater especially where a parlor is involved. Since nothing happens in winter which could be for five months the diked grass filter could hold it. Normally figure about 25 square feet of grass filter per dairy cow. This translates to a usage of ¼ inch per day across the whole filter. This system could really help if several hundred feet of grass waterway isn't available before the wastewater reaches a creek. The ideal system would be for the wastewater to go through the diked grass filter and then flow through an additional length of grass filter.

There is a revised Farm A Syst bulletin called "Assessing Your Milking Center Wastewater Management" that was recently put together and is available through Farm Bureau or from the Fayette County Extension office.

One item that would be helpful is to have the grass established in the filter before draining or pumping liquids into it. Grass helps remove the nitrogen and phosphorus nutrients. The solids settling basin for a feedlot should be 1/30 the size of the feedlot. Include roof area if that drains through the settling basin too. Many times the feedlot if concrete surfaced can be used for the solids settling basin. DNR requires a distance of 100 feet for deep wells and 200 feet for shallow wells to a settling basin and the same should be true for a grass filter. Your county office has bulletin PM 1909 for designing settling basins for open feedlots and bulletin PM 1919 for vegetative filter strips for open feedlot runoff treatment.

Producer Profile: Darryl and Teresa Keehner—"Long Day Lighting is Money in the Bank"

Darryl and Teresa Keehner, from Guttenberg in Clayton County have an average of 52 cows milking throughout the year. Late last year they called ISU Extension to advise them on installing long day lighting in their stall barn where cows are exposed to 10-20 foot candles of light for 16-18 hours per day. Darryl and Teresa thought it sounded like easy money. And, they now confirm it was as they spent $2,700 to install long day lighting and gained over 6 pounds of daily milk per cow in the bulk tank.

The additional milk was also compared to production a year ago with similar days in milk.

		Herd Daily	
Cows	42	52	80.77%
Increase	6	252	lbs
Milk Price	$13.15	$33.14	
DMI	3	lbs/cow/day	
Cost DM	$0.07	$8.82	
Net Gain		$24.32	
Annual Gain		$8,876.07	
Investment		$2,700.00	
Return/investment		3.287433	328%

Even if only 80% of the gain was given (over 42 cows) to the long day lighting due to increase in electrical cost or other factors, a 6 pound increase on 42 cows equals 252 pounds per day at $13.15 equaled income of $33.14 per day more income.

However, feed intakes will increase an estimated 3 lbs per cow per day at $0.07 per pound of dry matter on the 42 cows is $8.82 added feed expense. The net gain is $24.32 per day or $8,876 annually. The annual income divided by the $2,700 investment is a 328% return on investment in first year. Thus, the investment is paid back in 3-4 months which is typical.

Darryl Keehner feels producers are better off making positive gains/investments rather than reducing or cutting expenses out. It's the old saying, you need to spend money to make it as watching expenses isn't enough. The only downfall to the long-day lighting is that Teresa isn't sure when to put the biskets in the oven after the night milking because the lights don't go out when they are done milking. Else, long-day lighting is a "no-brainer" investment that pays big dividends.

Next year the return is expected to be over $8,000 above utility, feed and repair costs on the system. Where else can a dairy invest money for this kind of return.

Extension's only caution is to make sure dry cows are not exposed to long day lighting as cows need time to recharge the system.

Extension dairy field specialists have light meters to assist producers with present footcandlles and to evaluate footcandles after installation.

As Hay Rises in Price, Will You Need to Substitute Other Feeds?

by Dale Thoreson

Hay prices keep inching upward this winter. With a rain drenched first crop and then dry weather limiting 3rd and 4th cutting, some dairy herds are finding their forage supply is running short. Fortunately, most Iowa dairy farms had normal corn yields and many chopped some extra tons of corn silage.

The dairy cow has a wide ability to utilize a variety of forages, both types and amounts. Research at the National Forage Research Center in Prairie duSac, Wisconsin revealed little difference in milk production whether cows were fed one third of their forage needs as haylage and two thirds corn silage or two thirds corn silage and one third haylage. Only straight haylage or corn silage reduced milk production.

Targeting your hay inventory can help stretch supplies and get you more production (milk or growth). High quality hay, over 140 RFV, is best used in early to mid lactation diets and for young 2-3 month old calves. Use 100 RFV hay or less for off dry cows and older yearling heifers. The 110 to 130 RFV hay can be used for late lactation cows, but is best used for 4 – 14 month old heifers.

Some dairy farms may want to use the minimum amount of forage and still keep a healthy cow. This management technique can be very tricky, but again the cow is pretty adaptable. I feel pretty uncomfortable with rations under 19% acid detergent fiber (ADF). It would be a good idea to shake those minimum forage rations on the Penn State particle separator. You should get a maximum of 50-55 on the bottom tray. That should leave enough of the two top trays for effective fiber.

There are some forage substitutes that can be used to effectively reduce forage in the cow's rations. Beet pulp, corn gluten feed, cottonseed, distillers grains, hominy, soy hulls, wheat bran and wheat middlings can all be used to offset some of the forage in a ration. Typically these "high-fiber by-products" can substitute for 10 to 25% of the forage dry matter. Be sure to consult with your nutritionist on the particular by-product(s) you choose for heifer or cow rations.

Finally, those farms that use larger amounts of corn silage than they've used previously need to keep in mind the need for increased protein. For example, if you substitute one pound of dry matter 8.5% protein corn silage for one pound 20% protein alfalfa, it will require an increase of 0.4 lbs. of 40% crude protein supplement and a decrease of 0.4 pounds of shelled corn. If the ration is short one pound of protein below their requirement, cows will reduce milk by 10 lbs. per day.

Extension Crop Update ***by Brian Lang***

SMALL GRAINS Planting

Plant small grains as soon as soil conditions permit. Preference is to seed these crops before mid-April. After mid-April we loss on average 10% yield per week, and after May 1 about 15% per week. The basic trend is the earlier the small grains are planted, the better the test weight and yield. This is in response, on average, to have flowering occur prior to the hot part of summer.

Small grains germinate just a few degrees above freezing, but development is slow. If plants develop leaves above ground, the leaves may be frosted, but the growing point is protected below. However, if SOIL temperatures fall into the 20's after plants have germinated significant damage can occur. Seeding rates should be about 30 seeds per square foot, which is about 3 bu/A for Oats and 2 bu/A for Barley. Adjust the rate upwards based on % germination and planting conditions. For a reference, see Pm-1497, Small Grain Production for Iowa, http://www.extension.iastate.edu/Publications/PM1497.pdf

For small grains variety trial information, go to:

Iowa, http://www.agron.iastate.edu/icia/YieldTesting3.html
Illinois, http://vt.cropsci.uiuc.edu/
Minnesota, http://www.maes.umn.edu/maespubs/vartrial/vt-cntnt.html
South Dakota, http://plantsci.sdstate.edu/varietytrials/vartrial.html
Wisconsin, http://soybean.agronomy.wisc.edu/res_ext.htm

ALFALFA CROP UPDATE

Planting... Not Till April

While small grains can be planting now, it is considered too risky to plant alfalfa yet. Alfalfa germinates at about 48 degrees F. Soil temperatures listed above are now in the low 40's, but that is for a 4-inch depth. Alfalfa is planted in the upper one-half inch of soil. Current daytime temperatures could cause the upper inch of soil to reach and exceed germination temperatures for alfalfa. Once alfalfa germinates, it doesn't take long for it to emerge its cotyledons above ground, which would then be susceptible to freezing air temperatures. It would probably take temperatures in the low 20's to kill the exposed cotyledons, but if this happens, those plants will not grow back. Most alfalfa plantings are held off until about mid-April. This starts getting on the later end of the planting window to optimize small grain production, but is your priority to grow small grains or alfalfa?

Grass Seedings

Most grass seeds are small enough to flow through the small seed boxes of grain drills, however, smooth bromegrass does not. Bromegrass is usually put in with the oats for establishment. If this is the case, seed the oats shallow (1/4 to 1/2-inch deep) because of the recommended seeding depth for bromegrass. If seeded at typical oat seeding depth (1 to 1.5 inches), the bromegrass is seeded too deep and establishment could be severely limited. The oats can usually still establish okay at the shallow seeding depth. The question is what is the clients priority, to establish oats or bromegrass. Seeding technique -- remember that seed depth (1/4 to 1/2-inch deep) and seed-soil contact are very critical for good establishment. The dryer the soil, the more important the seed-soil contact. Planters should either have press wheels (best), or be followed with a cultipacker (preferred over a harrow) or harrow (better than nothing) to improve seed-soil contact.

Winter Annual Weeds

Every May I get phone calls on outbreaks of weeds in alfalfa fields like Shepherds purse, Field pennycress, and/or Pepperweed. However, by that time there isn't much of anything that we can do about it. These are among the most common winter annual weeds that show up in alfalfa fields. They are not very palatability or high in quality. Winter annuals germinate in the fall, develop a rosette-type growth (like dandelions), overwinter as the rosette, and then bolt (rapid growth of upright stems) in early spring producing seed for next fall. Once these plants bolt, herbicides are not very effective. The time to control these weeds is while alfalfa is still dormant, using herbicides such as Pursuit or Velpar. The only way to know if these weeds are present is to scout the fields. This is not easy since the weed growth at this time is still in the flat rosette stage. Concentrate scouting fields that have exhibited a history of winter annual weed problems. However, realize that most winter annual weed situations are not heavy enough to significantly interfere with yield and quality of the overall forage, so the herbicides are not usually recommended.

INSECT UPDATE

Common Stalk Borer - Consider Method 1 Soon.

Those of you that lose corn plants in the first few rows along grassy field borders may have Common Stalk Borer problems. Go to the following web site for photos of the problem: http://www.ipm.iastate.edu/ipm/icm/1997/4-7-1997/toastsborer.html

Common stalk borer has basically 5 timing periods for management to reduce either "field border" problems, or "in-field" infestations. These are:

Method 1. Burn grassy road ditches, grass-back terraces, etc. to reduce "field border" infestations. The recommended time to burn the grass is when the new grass growth is beginning to spike. This timing is basically around mid-March. This will kill the eggs laid last fall. Actually the grass could have been burned at any time from late fall until now, but spring is the preferred time to minimize exposure to soil erosion. However, if roadside crews have established native plantings in your road ditches, it would be harmful to burn these plantings in fall or spring.

Method 2. Apply insecticide during egg hatch -- 575 to 750 DD (base 41, Jan. 1). We will track degree days and let you know when we approach these numbers. This can target “field border” problems if you missed the opportunity for roadside burn, and it can target “in-field” infestation occurrences discussed under Method 3. The timing of Method 2 usually corresponds to beginning spike stage of first-planted corn. But again, we will track the degree days on Crop Notes.

Method 3. Apply insecticide with "in-field" herbicide

program if perennial grasses and ragweed (populations from last year) are extensive. If larva are in these weeds (quackgrass, wirestem, and giant ragweed) when the weeds are killed with postemergence herbicide, the larva are forced to move out of the weed and into something else (i.e. corn).

Method 4. For "field border" infestations, if no previous method was used, apply insecticide during larvae migration -- 1,100 to 1,400 DD (base 41, Jan. 1). Larva too large for a grass stem, leave the grass at this time to find a larger plant to live in (i.e. corn). Timing an insecticide at this time along the "field border" and the first rows of corn next to the "field border" catches many of the migrating larvae. This usually occurs in mid-June, but we will track the degree days.

Method 5. Moldboard or chisel plow activities bury eggs deep enough in the soil so that many of the hatched larvae do not survive.

How to PEAQ Your Alfalfa Harvest

*******PEAQ harvest for dairy has been May 18-22 during the last several years in Dubuque area.***

Increasing alfalfa **R**elative **F**eed **V**alue (**RFV**) can add tremendous value to the farm enterprise through reductions in purchased feed and increased dry matter intake. Determining when to cut first crop alfalfa is often difficult due to variation of quality relative to flowering stage. University of Wisconsin agronomists developed the PEAQ method for a valid indication of RFV for first cutting.

Predictive **E**quations for **A**lfalfa **Q**uality (**PEAQ**) is a method to predict the forage quality of standing alfalfa. The two equations predict ADF and NDF when the height of the tallest stem is measured and the maturity of the most advanced plant is determined. The equations have been validated in the Midwest and also in other environments from California to New York. It is a reliable indicator to predict the optimum harvest time for alfalfa. This has proved to be very valuable for first-cutting.

Step 1: Choose a representative 2-square-foot area in the field.

Step 2: Determine the most mature stem in the 2-square foot sampling area using the criteria shown in the table at the right.

Step 3: Measure the most mature stem in the 2-square-foot area. Measure it from the soil surface (next to plant crown) to the tip of the stem (NOT to the tip of the highest leaf blade). Straighten the stem for an accurate measure of its length. The tallest stem may not be the most mature stem.

Step 4: Based on the most mature stem and length of the tallest stem, use the chart at the right to determine estimated RFV content of the standing forage.

Step 5: Repeat steps 1 to 4 in five representative areas across the field. Sample more times for fields larger than 30 acres.

--- Stage of Most Mature Stem-----

Height of Tallest Stem (from soil surface to stem tip)	**Late Vegetative (>12") No buds visible**	Bud Stage **1 or more nodes with visible buds. No flowers visible.**	Flower Stage **1 or more nodes with open flower(s)**
- Inches -	RFV	**RFV**	RFV
16	**237**	**225**	**210**
17	**230**	**218**	**204**
18	**224**	**212**	**198**
19	**217**	**207**	**193**
20	**211**	**201**	**188**
21	**205**	**196**	**183**
22	**200**	**190**	**178**
23	**195**	**185**	**174**
24	**190**	**181**	**170**
25	**185**	**176**	**166**
26	**180**	**172**	**162**
27	**175**	**168**	**158**
28	**171**	**164**	**154**
29	**167**	**160**	**151**
30	**163**	**156**	**147**
31	**159**	**152**	**144**
32	**155**	**149**	**140**
33	**152**	**145**	**137**
34	**148**	**142**	**136**
35	**145**	**139**	**131**
36	**142**	**136**	**128**
37	**138**	**133**	**126**
38	**135**	**130**	**123**
39	**132**	**127**	**121**
40	**129**	**124**	**118**
41	**127**	**122**	**115**
42	**124**	**119**	**113**