



Louisiana

Dairy Digest

Your Herd Management Resource

EXTENSION PROGRAMS
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4-H Youth Programs

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Dairy Market News

Current Milk Prices

The USDA Milk Market Administrator reported on July 17th that the Uniform Blend Price (UBP) on 3.5% butterfat milk for the Southeast Milk Marketing Order (Federal Order 7) for June 2006 was \$12.90. This price was unchanged from the May 2006 UBP. This marks the first time in 7 months that the UBP in FO 7 did not decrease from one month to another. Class 1 utilization in FO 7 was 56.35% up 1.87% from May 2006 and 0.80% higher than June 2005.

The USDA Milk Market Administrator reported on July 21st that the Class I mover for August milk will be \$10.97/cwt, down \$0.37 from July and down \$3.47 from a year ago. Therefore, the Advanced Class 1 price for August 2006 would be \$14.37 which includes additions for transportation costs. This price was a decline of \$0.37 from the July Advanced Class 1 price; however it was the same as the May 2006 price and \$0.22 higher than the June 2006 price.

Milk Income Loss Contract (MILCX) payment for June was \$0.9996 per cwt and the MILC payments for July 2006 will be \$0.7990 per cwt. The MILCX payment for August will be \$0.9248.

Milk Production

It now appears that the tremendous growth in national milk output seen during the past 12 months is finally beginning to fade. USDA estimates that U.S. milk production in May was 2.4% higher than May 2005 and 3.5% higher than April 2006. However, May 2006 output was only 0.1% higher than April 2006 on a daily average basis. The slowdown in milk output per cow is being attributed to extremely hot weather across the country as well as rainy conditions in the Midwest and Northeast.

While the number of milk cows in the national dairy herd has grown, farmers have begun to increase culling rates due to reduced dairy farm profitability and slaughtered 13,000 more head during May 2006 (177,000 head) compared to May 2005 (164,000 head). Nationally, there were 103,000 more cows being milked in May 2006 compared to May 2005. The Western states of California, Idaho, and New Mexico once again contributed the bulk of this growth adding 107,000 head to their herds.

U.S. Producers culled 180,800 cows last month, up 16,200 head (+9.8%) from a year ago. In the first half of the year, 1.11 million cows were culled, up 0.5% from 2005's very low pace. Dairymen are sending more cows to slaughter, but the number of replacements available is at an 11-year high, according to USDA reports released Friday. The biannual "Cattle" report showed dairymen had 3.8 million replacement heifers on hand on July 1, up from 3.7 million a year ago, and the most since 1995. In addition, the ratio of replacement heifers to the entire herd was 41.5%, the most since 1994. This leaves a large crop of heifers waiting in the wings to join the milking string.



Dairy Product Prices and Futures Prices

Dairy product prices declined 2-4% percent during June. The Chicago Mercantile Exchange (CME) reported that 40-pound block cheese prices fell \$0.025 per lb to \$1.1725 per lb over the past four weeks while 500-pound barrel cheese prices tumbled by \$0.045 per lb to \$1.1650 per lb during the same four weeks. Grade AA butter prices decreased by \$0.0175 per lb during May while Grade A nonfat dry milk (NDM) price fell by \$0.0175 per lb for the first time since late January. According to USDA, commercial American cheese inventories reached 596.5 million lbs. on June 30, just shy of the most ever for the halfway point of the year; privately held butter stocks declined in June for the first time since 1999; and inventories on June 30 were 228.4, down 1.3 million lbs. from May 31.

The table below displays Chicago Mercantile Exchange (CME) futures contract prices for the upcoming three months and shows milk prices have weakened somewhat over the past four weeks. The glimmer of hope that milk prices would improve steadily during late summer and early fall has fallen to the continuing escalation of milk supplies. Despite this gloomy news, Class III milk prices are projected to stabilize and rise almost nine percent from the reported June price of \$11.29 to the September futures contract settlement price of \$12.30 on July 5. So, traders believe that Class III milk prices will remain about 15 to 25% above the government milk price support level of \$9.90 per cwt.

CME Dairy Futures Contract Prices	June 6 Settlement Prices	July 5 Settlement Prices	Percent Change June 6 to July 5
<u>Class III Milk Futures</u>	— \$/cwt —	— \$/cwt —	
July Contract	\$11.75	\$11.18	-4.9%
August Contract	\$12.20	\$11.69	-4.2%
September Contract	\$12.48	\$12.30	-1.4%
<u>Butter Futures (Cash)</u>	— \$/lb —	— \$/lb —	
July Contract	\$1.2000	\$1.1600	-3.3%
August Contract	\$1.2200	\$1.1775	-3.5%
September Contract	\$1.2575	\$1.2225	-2.8%

LSU Dairy Science Club and Students Recognized at National Meeting

Several members of the LSU Dairy Science Club, along with advisor Dr. Cathy Williams, attended the American Dairy Science Association – American Society of Animal Science annual meetings in Minneapolis, Minnesota on July 8-13, 2006. The students attended the meetings as members of the American Dairy Science Association-Student Affiliate Division (ADSA-SAD). The primary objectives of the ADSA-SAD are to develop leadership and promote scholarship among students interested in the dairy industry, and to encourage students toward careers in dairy science. Student delegates representing 15 dairy science clubs from across the nation were present for the meetings.

Students participated in several events such as a dairy quiz bowl, business meetings, scientific paper presentations, chapter competitions, a career symposium, and an awards banquet. Students also had the opportunity to attend symposia, oral sessions and poster sessions on scientific research presented by the professional members of ADSA

Several club members participated in research presentation competitions. Mark Konzelman, Kentwood, La presented a paper on use of copper sulfate in preventing foot rot in dairy cattle. Abby Greenbaum, New Orleans, La presented a paper on the effects of low fat dairy foods in preventing colon cancer and Melissa Brown, Jennings, La presented the results of her original research on ice cream containing ingredients to promote weight loss.

Members of the club were also very successful in representing Louisiana on the national level. Bridget Lyons, Church Point, La, was recognized as the 2006 National Outstanding Dairy Science Student and Mark Konzelman was elected President of the ADSA-SAD for 2006-2007. Dr. Cathy Williams will be serving as 3rd Year Advisor for the ADSA-SAD during 2006-2007. The LSU Dairy Science Club was also recognized as the 3rd place winner in the overall chapter contest during the awards luncheon.

In addition to these successes, the LSU Dairy Science Club has represented LSU and the Louisiana dairy industry extremely well at national meetings during the past few years. Since 2000, the LSU Dairy Science Club has had three national winners in the ADSA-SAD Outstanding Dairy Science Student competition (Ian Norris, New Iberia, La; Justin Roberts, Kentwood, La; and Bridget Lyons, Church Point, La), three national ADSA-SAD presidents (Ian Norris, New Iberia, La; Rebekah Blades, Kentwood, La; and Mark Konzelman, Kentwood, La) and one national officer every year.

These are remarkable achievements considering the LSU Dairy Science Club averages around 20-30 members per year, while several of the dairy science clubs with which they are competing may have as many as 150 members. It is a strong testament of the quality of the undergraduate education programs in dairy science at LSU and of the remarkable talent and dedication of the dairy science students. Congratulations to all these students and Dr. Williams for their outstanding representation at the national ADSA-SAD meetings!

Get Ready for Late Summer and Fall Calving

Dr. Gary M. Hay, Dr. Charles F. Hutchison and Dr. Cathy C. Williams

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July may not seem like the appropriate time to think about calving season on Louisiana dairies, but actually it is the ideal time. Much of your financial success as a Louisiana dairy farmer during the coming year will be determined by how well your cows perform during the first few weeks and months of their upcoming lactations. Much of your future success in the next 2-4 years will be determined by the crop of heifer calves hitting the ground this fall. Waiting until your cows start calving or your calves start hitting the ground means you won't have the opportunity to get your operation geared toward maximizing their potential success. So, July is the perfect time to start thinking about getting your dairy enterprise ready for the late summer and early fall calving season.

DRY COW MANGEMENT

The dry cow program on most farms used to consist of drying cows off around 60 days before calving and putting them on the 'back forty' to fend for themselves until they calved. On some farms the cows were put in a pasture closer to the house about 20 to 30 days prior to calving so they could be watched a little closer and usually fed a little grain and given some hay. Today, we understand the dry cow program is actually the beginning of the next lactation. The way cows are handled and fed during the dry period has a tremendous impact on the upcoming lactation. Dry cow management is critical to the financial success of a dairy enterprise.

The dry cow period can be divided into two parts. The first part often called 'early dry' or 'far-off' dry cows refer to the cows from the time they are dried off until about 21 to 14 days prior to the expected due date. The last part often called 'close-up', 'maternity' or 'pre-fresh' cows refer to the cows from about 21 or 14 days until the expected due date. Some general recommendations concerning the dry cow program are:

- Cows should be dried off abruptly. Do not milk a cow every other milking or every other day for a few days prior to drying off. This places more stress on the mammary glands and can increase the chances of getting a new intramammary infection.
- Numerous research trials over the past thirty years have shown that each \$1 invested in dry cow treatment will yield anywhere from \$10 to \$20 in additional profits by lowering the level of both clinical and sub-clinical mastitis as well as somatic cell counts (SCC) in early lactation. Lower levels of early lactation mastitis and SCC translate directly into higher first lactation milk production and more net income.
- Every quarter of every cow should be treated with an approved dry cow therapy product and then each teat should be dipped with an approved teat dip. Dry treating all four quarters of all cows has been shown to be the most economically effective program for preventing new intramammary infections. Even though some of the quarters may not be infected at the time the cow is dried off, many quarters can be exposed to microorganisms during the dry period and result in new intramammary infections prior to calving.
- Recent studies have also shown that dry treating reduces early lactation intramammary infections and SCC in first calf heifers. Dry treating heifers is especially effective at reducing *Staphylococcus Aureus* infections present in heifers at the time of calving. Reducing the number and severity of early lactation *Staphylococcus Aureus* infections in heifers can reduce the number of blind quarters at calving and reduce the rate of culling in heifers due to either blind quarters or reduced first lactation production.
- Using proper procedures when dry treating cows or heifers is critically important for an effective dry treatment program. The first step is to clean any organic matter such as mud or manure off the teats. Second, disinfect the teat ends by scrubbing thoroughly with an alcohol pad or cotton balls soaked in alcohol. Third, carefully insert a single use dry treatment tube into each teat end using the partial insertion technique (no more than ¼ to ½ inch into the teat). Be careful not to touch the teat end or the treatment tube prior to inserting the tube into the teat in order to avoid contamination with bacteria and/or other microorganisms. After the medication has been inserted into the teat, dip the teat with a commercially available teat dip in order to reduce the number of organisms which may linger on the teat end.

- One major objective of the dry cow program should be to maintain body condition. Score your cows at dry off and monitor condition score through out the dry period. Make dry cow ration adjustments as needed.
- Cows drying off with a condition score of 4 or greater should **NOT** be put on a diet during the dry period to reduce body condition. This will only increase the probability of the cow having calving problems and metabolic disorders after calving.
- Use two dry cow groups – a far-off and close-up group. Dry matter intake drops as the cow approaches calving. Therefore, the diet of the close-up dry cow has to be more nutrient dense in order to meet the cow's requirements. Also, certain feed additives are recommended only for close-up diets, since feeding them during the entire dry period may not be economically feasible or the effects of the additive will not work if fed the entire dry period.
- Do not feed the milking cow grain mix to the dry cows. The mineral and vitamin levels are not adequate and there could be too much sodium and potassium in the grain mix if it contains sodium bicarbonate and heat stress packs that contain extra potassium. High sodium levels have been associated with increased udder edema. Also, the energy and protein levels in the grain mix could be too low or too high to meet the dry cow's nutrient requirements.
- Make sure the dry cow grain mix complements the forage you are feeding. Just because the feed tag is labeled dry cow feed and recommends feeding 5-6 lb per head per day does not mean you are meeting the nutrient requirements of the dry cow. Get a forage sample analyzed and balance a ration for the dry cows.
- Corn silage can be fed successfully to dry cows. However, corn silage should only make up a maximum of 50% of the forage dry matter in the total ration dry matter. Corn silage works quite well in a balanced diet and is a high quality forage that has a fairly low potassium level.
- Avoid feeding high potassium feedstuffs in the dry cow diet, particularly the close-up diet. Diets with a high potassium level have been associated with a higher incidence of milk fever. The potassium level of the diet probably has more of an effect on causing milk fever than calcium and phosphorus levels and calcium to phosphorus ratio.
- All feedstuffs in the milking cow ration with the exception of minerals and additives that are high in sodium and potassium should be included in the close-up diet to allow the rumen and microorganisms to start adjusting to the lactating cow diet.
- Feeding anionic salts or commercial products with anionic type properties in the close-up diet will help prevent clinical cases of milk fever and will help alleviate sub clinical hypocalcemia. The addition of anionic salts in the diet will require you to raise the calcium level in the diet to a minimum of 150grams per head per day.
- Feeding a minimum of 1,000 IU of Vitamin E in the dry cow ration has been shown to help improve the immune status of the cow and in some cases has been associated with reducing the incidence of retained placentas and reducing SCC.

Following these general recommendations should result in cows calving with fewer metabolic problems such as dystocia, retained placentas, milk fever, ketosis, displaced abomasums and lower clinical and sub clinical mastitis (high somatic cell counts). The cows should also go on feed faster and have higher early lactation milk production. This should result in more milk production during the lactation, lower medication and vet bills and lower culling rates during early lactation. Extensive research over the past 20 years has shown that each 1 pound increase in early lactation peak milk yield (the highest daily milk production occurring during the first 60 days of lactation) adds around 200 pounds to the total lactation production. For example, an additional 5 pounds of peak milk yield will produce an additional 1,000 pounds of milk during the lactation. At \$14.00 per cwt, this is worth \$140 per cow or \$14,000 in extra income for a 100 cow dairy.

EARLY NEWBORN CALF CARE

In addition to dry cow management, calf management during and shortly after calving contributes significantly to the health, survival rates and future growth rates of calves. With heifer calves worth \$300-\$500 and replacement heifers selling for \$1,800-\$2,200, losing 10-20% of young calves due to preventable disease problems can also cost you a lot of money very quickly.

Raising healthy calves begins at birth. In order for calves to get a good start in life, proper management of the cow and the calving environment is necessary. Stress should be minimized and exposure to infectious diseases limited. This can be achieved with good housing, sanitation, and controlling possible disease carriers such as people, animals, and equipment. The maternity area should be as clean and dry. If maternity pens are available, they should be well-bedded and draft free. The calf should be removed from its dam as soon as possible after birth. The longer a calf remains with the cow in the calving area, the greater the risk of exposure to infectious disease causing organisms.

The calf's navel should be dipped after birth and again 12 hours later with strong tincture of iodine (at least 7%) to prevent bacteria from entering the open umbilical cord and to help seal and dry the cord. Once removed from the dam, the calf should be placed in a separate clean, dry, well-ventilated, and draft-free area such as a hutch or calf barn. Calves should not come in contact with cows or other calves. Avoid placing a wet newborn calf outside in cold weather (yes, even in Louisiana) until it dries completely and receives colostrum.

After the immediate care has been given at calving, colostrum must be fed to the calf. A sound colostrum management program is essential in raising healthy dairy calves. Colostrum is the first and most important feed given to a newborn calf. It is the primary source of nutrients for the calf and also provides essential and irreplaceable antibodies. True colostrum is obtained from the first milking only, while milk from later milkings is inferior to colostrum in nutritional and immunological value. Colostrum allows the calf to achieve immediate immune protection from diseases until its own immune system can produce antibodies at about 4 weeks of age. The three essential factors to consider in colostrum feeding and management are quality, quantity, and time. The colostrum should be fed as soon as possible after birth, preferably within 1 to 3 hours. If the calf won't drink, use an esophageal feeder to make sure the colostrum is consumed. Follow up with another feeding of colostrum about 12 hours later. The calf's ability to absorb the antibodies declines within hours after birth, and by 24 hours the intestine is closed to absorption. Colostrum should be fed at 12 to 15% of the calf's body weight. On average a calf should receive 3 to 4 quarts at the first feeding, and an equal amount should be provided for a total of 6 to 8 quarts in the first 25 hours of life. Fresh colostrum from the dam is best, provided it is of good quality. It is a good idea to keep some good quality colostrum in the freezer as "insurance". Quality can be checked with a colostrometer if available or by visual observation. Do not feed colostrum from cows that leaked prior to calving or colostrum that is thin, watery, or bloody. After adequate colostrum has been provided, calves can be fed transition milk or milk replacer beginning at the third or fourth feeding.

The calves are the future lactating cows on the farm, so ensuring their health and well-being is vital to the dairy operation. Following these simple procedures at the time of birth will help them get a healthy start in life.

We live in an ever changing world. This is especially true in the dairy industry. Ever increasing costs for feed, medications, fuel, fertilizer, insurance and other costs combined with relatively stagnant milk prices, make it critical for dairy farmers to adapt their business and management practices to stay profitable.

Adopting well-researched and well-documented management practices for managing dry cows, fresh cows and newborn calves can help your dairy enterprise stay profitable.

Unfortunately, sticking with traditional management practices simply because we are comfortable with them may not be conducive to the long term financial health of your dairy enterprise.

Are you ready for calving season? For more information on any of the management topics listed above, contact your county agent or the LSU School of Animal Sciences at 225-578-4411.

4-H University Dairy Cattle Judging Contest

The dairy cattle judging contest at 4-H University (formerly 4-H Short Course) was held on Wednesday, June 21, 2006 at the LSU Teaching, Extension and Research farm on the campus in Baton Rouge. The winning team was from Lafourche Parish and the team members were Jordan Head, April Gaudet and Brandi Folse. The high individual in the contest was Jordan Head from the first place team and the high individual not on the winning team was Jeremy Landry from Assumption Parish. The team from Lafourche along with Jeremy Landry will compete in October at the National 4-H Dairy Cattle Judging Contest in Madison, Wisconsin. The following is a list of the top ten teams and individuals.

<u>Rank</u>	<u>High Team</u>	<u>Rank</u>	<u>High Individual</u>	<u>Parish Team</u>
1	Lafourche 1	1	Jordan Head	Lafourche 1
2	Jeff Davis 1	2	April Gaudet	Lafourche 1
3	Assumption 1	3	Brandi Folse	Lafourche 1
4	Jeff. Davis 2	4	Jeremy Landry	Assumption 2
5	Washington	5	Randee Decker	Tangipahoa
6	Desoto	6	Kyhylee Miller	Jeff Davis 2
7	Lafourche 2	7	Meghan Guillory	Jeff Davis 1
8	East Baton Rouge	8	Fairrun James	Assumption 1
9	Livingston	9	Callie Anyan	Winn
10	Evangeline	10	Kallie Dronet	Jeff Davis 1

Jersey Heifer Sale Hill Farm Research Station

A public auction will be held to sell fifteen registered Jersey heifers intended for 4-H and FFA project animals at the Hill Farm Research Station on August 12, 2006 beginning at 11:00 a.m. Animals and /or registration papers may be viewed beginning at 9:30 a.m. The Hill Farm Research Station is located south of Homer, Louisiana at the intersection of LA 9 and US 79. Additional information can be obtained by contacting Dr. Allen Nipper at 318-927-2578. Auctioneer will be Jim Towns (license #526-06), 245 Goodwill Road, Minden, Louisiana. Other items concerning the sale are:

1. Youth agents in each Parish have a list of the heifers with birthdates and information concerning the dam, sire and MGS.
2. A situation may arise where an animal will have to be removed before the sale and no replacement will be added.
3. Each Louisiana 4-H or FFA member will be limited to purchasing a maximum of two animals so more 4-H and FFA members have an opportunity to purchase a heifer.
4. Registration papers and animals will only be available for viewing beginning at 9:30 a.m. the day of the sale. In order to be fair to all potential bidders, this is the only time the heifers and Hill Farm records can be viewed.
5. Heifers are not halter broke and as such will be sold in a random order.
6. Once a heifer is struck off as sold, she belongs to, and is the buyer's responsibility.
7. Heifers purchased will not be removed until the end of the sale and must be removed from the Hill Farm immediately after the sale.
8. **Personal checks** will be the only form of payment accepted.
9. A minimum bid will be established for each heifer and if that amount is not reached, the heifer will not be sold.
10. All 4-H and FFA members will have another opportunity to purchase some additional animals at the complete dispersal sale of the herd. A final date for that sale has not been set, but the most likely date will be in late October or early November.

Upcoming Dairy Events

August 12, Jersey Project Calf Sale for LA 4-H & FFA members - Hill Farm Research Station, Homer, LA

August 14-18, PCDART for Windows workshops for Dairy Producers, Dairy Consultants and DHIA Technicians,

Contact the Louisiana DHIA office at 225-578-6099 for more information

September 26, Dairy Selection Show in Baton Rouge for Dairy Educational Awards trip

September 26 - October 1, Dairy Educational Awards Trip – Memphis, TN

October 2, National 4-H Dairy Cattle Judging Contest - Madison, WI

October 3 – 7, World Dairy Expo – Madison, WI

October 13, Mississippi State Fair Open Dairy Show - Jackson, MS

October 21, Washington Parish Fair Open Dairy Show - Franklinton, LA

October 31, Southeast Research Station Field Day – Franklinton, LA

November 11, Dixieland Holstein Show – Tylertown, MS

November 4, State Fair of Louisiana Open Dairy Show – Shreveport, LA

November 5, State Fair of Louisiana Junior Dairy Show – Shreveport, LA

Dry Cow Udder Health Management

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Udder health management of the dry cow can have a tremendous impact on lactational performance just like nutritional management of the dry cow. Recent studies have shown that 4.5 – 5.5 times more environmental pathogen intra-mammary infections (IMI) occur during the dry period than during lactation. A recent study using DNA fingerprinting determined that 52% of clinical coliform mastitis detected during the first 100 days of lactation was due to those quarters being initially infected with the same strain of bacteria during the dry period. Another study showed that 50.5% of new environmental streptococci IMI occurred during the dry period. The highest risk of IMI during the dry period is the first three weeks after dry off and the last two weeks before calving.

Several factors contribute to the higher risk of IMI during these critical times of the dry period. Exposure of the teat end to environmental bacteria is one of the factors that can result in IMI during the dry period and early lactation. The bacterial population found in the bedding material can closely reflect the bacterial population on the teat skin of cows. Many producers consider pasture to be a “clean” environment in which bacterial exposure to teat ends is minimal, but areas of high cow density such as under the shade of a tree can have bacterial numbers that exceed those of confinement housing. Total bacterial numbers higher than one million per gram of bedding have been associated with an increased risk of clinical mastitis during lactation and likely would increase the risk of IMI during the dry period. Cleaner cows have reduced teat end bacterial exposure and reduced IMI resulting in lower SCC. Dry cows with dirty udders, lower rear legs and bellies are probably at a greater risk of IMI. Mastitis can develop when exposure to mastitis pathogens overwhelms the immune system of the udder. Termination of milking practices (such as fore stripping and predipping) allows increased growth and exposure to bacteria on teat skin and in the streak canal. The streak canal becomes shorter after milking is terminated and the development of a physical barrier to infection (the keratin plug in the streak canal) is not immediate. Getting complete closure of the teat end and keratin plug formation at the end of lactation is critical to prevent new IMI during the early dry period. Studies from both New Zealand and North America have demonstrated that the keratin plug had not formed to result in complete closure of the teat end in 40%, 30% and 24% of dry cows by 2, 4 and 6 weeks after dry off, respectively. The level of daily milk production before drying off significantly influenced time until complete closure. A greater percentage of cows producing more than 46 lbs experienced delayed teat end closure compared with those producing less than 46 lbs. Cows in which teat end closure was delayed were almost twice as likely to develop a new IMI during the dry period. Gradual dry off of higher producing cows may help reduce delayed teat end closure.

Using research based management strategies and practices during the dry cow period will help minimize the risk of IMI during the dry period and into the next lactation. The use of long acting antibiotic dry cow therapy (DCT) is one of the most important management practices to use during the dry period. Dry cow therapy has been shown to eliminate up to 80% of existing infections at dry off and prevent up to 80% of new infections during the dry period. Failure to provide dry cow therapy could result in at least 8-12% of quarters that do not receive dry cow therapy to become infected during the dry period. Most of these infections will not become evident until the next lactation. Therefore, a management decision to save money by stopping dry cow therapy at dry off will end up costing much more in lost milk production and treatment cost in the subsequent lactation. Keeping the dry cows as clean as possible by providing portable shade and/or fencing off areas that become extremely muddy and dirty will help minimize the risk of developing an IMI. Nutrition management is also important in maintaining a health and active immune system that can help fight off potential infections.

Some cows enter the dry period with a chronic mastitis infection such as *Staph aureus* and despite good management practices including DCT the cure rates are still low for some of these mastitis pathogens during the dry period. Producers and researchers over the years have experimented with additional intra-mammary treatments and systemic antibiotics to try to increase the cure rate of these infections. One study compared the use of a single dry cow treatment using benzathine cloxacillin to the use of 3 different treatment times (dry off, 7-days post-dry off and 14-days post-dry off) with the same product. There was no significant effect of the use of multiple dry cow treatments on the rate of new intra-mammary infections or the cure rate of existing infections. At least two-studies have examined the use of systemic antibiotics in cows chronically infected with *Staph aureus*. One study compared the use of intra-mammary dry cow therapy (300 mg cephapirin benzathine) to the same product plus 11mg/kg of oxytetracycline given intramuscular on day 7, 8, 9 and 10 after dry off. The cure rate at 60-days post-calving was not significantly different (21.2% and 22.5%) between the groups but this group of cows was older and had long-term chronic infections.

A more recent study compared the use of intra-mammary cephalixin benzathine to two subcutaneous injections of tilmicosin (5 mg/kg) given at dry off and 4 days later. The cure rate for intra-mammary treatment with cephalixin was considerably higher at 78% as compared to the cure rate for subcutaneous tilmicosin at 9%. The vast majority of studies do not currently support the use of additional therapies at dry off.

Even with good management practices and DCT dry cows can still develop an IMI during the dry period. Both internal and external teat sealants have been suggested as methods to keep environmental bacteria from entering teats during the dry period. Pfizer has recently introduced an internal teat sealant (Orbeseal®) that is infused through the teat orifice at dry off and persists until calving when it is stripped out of the teat end. The product is composed of bismuth subnitrate in a paraffin base. Orbeseal contains no antibiotics, is insoluble in milk and has no residue or food safety risk. Orbeseal acts as a physical barrier to prevent bacterial penetration of the teat orifice. The product is labeled for use in conjunction with dry cow antibiotic therapy. Orbeseal is distributed by Pfizer Animal Health and cost per infusion tube is about \$1.86 with cost per cow at approximately \$7.45. In one study Orbeseal® was used in conjunction with a dry cow antibiotic versus dry cow antibiotic alone, the results indicated that the quarters treated with Orbeseal® were 27% less likely to develop a new IMI between dry off and 1-3 DIM and 30% less likely to have an IMI present at 1-3 DIM. In another study, Orbeseal was compared to no dry cow therapy. A total of 197 cows were infused with Orbeseal and a control group of 204 cows received no dry cow therapy. However, only cows that had a SCC of <200,000 cells/ml and no history of clinical mastitis were used in the trial. Orbeseal treated cows had no clinical cases of mastitis during the dry period compared to 3% of the control cows. Also, the rate of new subclinical infections detected at calving was lowered for the cows treated with Orbeseal 12% versus 45% of control cows. During the fall of 2005 a research verification project was conducted at the LSU Dairy Teaching, Extension and Research farm using Orbeseal on dry cows. A total of 23 multiparous Holstein cows were randomly assigned to a treatment group of Orbeseal plus quartermaster DCT at dry off or quartermaster DCT at dry off based on parity, expected calving date and previous lactation 305d ME Milk production. Monthly DHIA data was used for milk production and SCC data. The cows treated with Orbeseal and Quartermaster were lower in SCC for the first two DHI test after calving. Both summit milk and peak milk was higher for the cows treated with Orbeseal and quartermaster. The combined use of internal teat sealants with dry cow antibiotics may further reduce new infections during the dry period. If an internal sealant can reduce clinical mastitis infections in early lactation by 4% the product would be cost effective not to mention the reduction of subclinical IMI during the dry period and early lactation resulting in lower SCC and potential for increased milk production.

Another potential method of reducing new IMI during the dry period is the use of a dry cow teat dip formulated to serve as an external sealant. There is some research evidence suggesting moderate success in reducing new infections with environmental pathogens using an external polyether-polymethane teat sealant. A critical factor in successfully using external sealants is proper teat preparation to promote adherence of the sealant. The teat should first be cleaned and treated with an approved dry cow intra-mammary antibiotic product. Then the teat should be scrubbed with an alcohol pad and allowed to dry. Finally, the sealant should be applied and the cow should remain standing until the product is thoroughly dry. Even when the proper application procedure is followed, adherence of external sealants rarely exceeds 5 days. The cost of these teat dip external sealants is about \$1.00 per application. One of the major drawbacks is the teat dip needs to be applied several times during the dry period for the maximum effectiveness to be achieved. This fall another research verification project will be conducted at the LSU Dairy Teaching, Extension and Research farm using multiparous Holstein cows to test the effectiveness of Orbeseal with DCT, an external sealant teat dip with DCT and DCT alone on SCC during early lactation, clinical mastitis during early lactation and milk production.

Preventing IMI in First Calf Heifers

Dr. Charles F. Hutchison

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Previous research conducted at the Hill Farm Research Station, LSU Dairy Teaching, Extension and Research farm and the University of Tennessee has shown dry treating replacement heifers at 30, 45 or 60 days prior to the expected calving dates has resulted in less clinical mastitis at calving, fewer subclinical IMI at calving, lower SCC in early lactation and in some cases improved milk production. Bacteriological data from these trials has shown a reduction in both contagious and environmental pathogens between the time of treatment and a few days after freshening.

What would be the effect of dry treating heifers 21 days prior to the expected calving date? Some producers wait until 21 days to put the replacement heifers into the close-up lot particularly if they are feeding an anionic salt type diet in the close-up lot. If waiting to 21 days before the expected due date to dry treat the replacement heifers is just as effective as 30, 45, or 60 days then that is one less time the heifers have to be worked.

In order to get the answer to this question, a demonstration project was conducted at the LSU Teaching, Extension and Research farm during the fall of 2005 and spring of 2006. The objectives of this demonstration project were: determine the length of time post calving that heifers had antibiotic residues, bacteriological effect of treating at this time and milk production and SCC during early lactation. A total of 14 Holsteins and 4 Holstein/Jersey crossbred nulliparous heifers were treated with Quartermaster at 21 days prior to the expected calving date. Before treatment quarter samples were taken for bacteriological culturing at the Hill Farm Research Station Mastitis Laboratory. A Delvo-P test was conducted starting at fifth milking post calving and continued until milk was clear of antibiotics. Quarter samples were taken on day 7 post calving for bacteriological cultures. Milk production and SCC data was obtained from the monthly DHI test results. The actual calving dates of the 18 heifers were an average of 22.33 days after dry treatment with quartermaster. The milk from all 18 heifers was clear of antibiotic residues on the 7th milking post calving. Below is the bacteriological culture results for 14 heifers (56 quarters) both pre and post calving.

Calving Status	— Number of Quarters (percentage) infected —		
	Non-contagious Staph Species	Strep Species	Staph Aureus
Pre	14 (25%)	3 (5.36%)	4 (7.14%)
Post	1 (1.79%)	1 (1.79%)	0 (0.0%)

Milk production was very good for the 18 heifers with peak milk at 90.4 lb and summit milk at 84.9 lb. The SCC (x 1000) for the 18 heifers during the first 4 DHI test days (TD) were: (TD1) – 333, TD2 – 438, TD3 – 371 and TD4 – 198. The counts for these heifers were higher than some of the heifer's SCC in previous research trials. There may have been some other environmental factors that lead to the higher than expected SCC counts in early lactation.

Dry treating replacement heifers at 21 days prior to the expected calving date is another management practice that can be used to reduce the number of times heifers have to be handled particularly in the late summer and early fall when heat stress is still a factor. Dry treating replacement heifers at 21 days prior to the expected calving date can be done without the loss of milk due to extended antibiotic residues and the treatment was effective in eliminating contagious mastitis pathogens and reducing the prevalence of environmental mastitis pathogens. However, if dry treating heifers prior to calving, ALWAYS test their milk using an antibiotic detection test such as a Delvo-P test prior to placing the milk in your bulk tank for sale.

Another research verification trial will be conducted this fall at the LSU Teaching, Extension and Research farm on treating replacement heifers 21 days prior to the expected calving date with or without an external barrier type dry cow teat dip.

TOP HERDS BY TEST DAY ENERGY CORRECTED MILK (ALL COWS)

NAME	BR	DATE	COWS	DIM	ECM	MILK	FAT%	PRO%	SCC	RHA
LSU DAIRY	H	5/15	78	206	75.7	81.9	3.3	3.1	321	23753
CLIFFORD CHAMPLIN	H	4/29	219	159	72.5	73.5	3.5	3.0	430	21684
LADD BLADES	H	5/8	224	190	66.2	65.2	3.7	2.9	299	19933
LOUISIANA TECH DAIRY	H	5/16	41	203	65.7	73.3	3.0	2.8	498	22371
KIRBY VARNADO	H	4/11	101	179	64.3	71.3	3.6	3.0	357	21053
J PAUL ALFORD	H	5/1	114	178	63.7	64.9	3.3	3.1	437	17118
SE LA EXP STATION	H	5/20	214	200	62.6	65.8	3.4	3.1	273	21084
GALEN NIGHTINGALE	H	5/17	76	248	62.6	69.1	3.2	3.0	501	20261
C JOHNSON & W LITWILLER	H	5/18	100	290	62.3	63.8	3.5	3.0	438	19531
O B MITCHELL	H	5/7	48	215	60.9	56.5	4.4	3.2	445	17770
BROWN DAIRY FARM	H	4/25	195	222	60.0	62.9	3.5	3.0	213	18848
UDDER FRESH	H	5/18	101	228	58.2	62.2	3.2	3.2	287	17959
CIRCLE G FARMS	H	5/15	156	214	56.8	62.6	3.5	2.9	246	17789
LEESFIELD DAIRY FARM	H	5/16	97	216	53.4	59.0	3.2	3.0	489	16991
TO-BEV FARMS	H	5/9	169	233	51.1	57.4	3.0	3.0	273	17604
KARIE AND BRAD BLADES	H	5/2	167	293	51.1	54.4	3.4	3.2	.	17169
RUSSELLAND RUSTY CREEL	H	5/9	92	214	50.8	55.4	3.6	3.1	292	16678
DUSTY SCHILLING	H	4/28	103	228	49.7	54.2	3.1	3.0	446	16586
MARVIN FLETCHER	H	5/15	172	230	49.4	55.9	3.6	3.0	606	17096
JOHN FAUNCE JR DAIRY	H	5/2	234	220	49.0	49.4	3.6	3.0	.	17878
MARK WASKOM	H	4/30	85	227	47.8	56.6	3.5	3.1	481	16261
LOUISIANA TECH DAIRY	J	5/16	44	214	44.7	52.6	3.9	3.4	749	16237
BRENT & LAURIE DUNCAN	H	5/17	264	206	44.7	51.0	3.0	2.8	138	16437
HOLLIS BANKSTON & SONS	H	4/26	93	231	43.2	48.1	3.7	3.0	375	16821
HILL FARM RESEARCH STATION	J	5/23	54	178	42.2	42.7	3.5	3.2	449	16129

TOP HERDS BY TEST DAY ENERGY CORRECTED MILK (ALL COWS)

NAME	BR	DATE	COWS	DIM	ECM	MILK	FAT%	PRO%	SCC	RHA
LSU DAIRY	H	6/13	76	DIM	68.4	74.3	3.6	2.9	322	23800
CLIFFORD CHAMPLIN	H	6/17	216	209	63.5	62.8	3.6	3.0	376	21773
LADD BLADES	H	6/9	224	222	61.8	61.1	3.6	3.0	338	20097
SE LA EXP STATION	H	6/21	209	220	57.6	62.2	3.6	3.1	409	20994
BROWN DAIRY FARM	H	6/28	187	264	56.6	59.9	3.6	3.1	372	18870
KIRBY VARNADO	H	6/8	100	192	54.0	59.6	3.3	3.0	552	20940
LEESFIELD DAIRY FARM	H	5/16	97	216	53.4	59.0	3.2	3.0	489	16991
O B MITCHELL	H	6/19	50	232	53.3	51.8	4.1	3.0	955	17708
HILL FARM RESEARCH STATION	J	6/14	52	159	53.3	46.0	4.7	3.4	467	15955
J PAUL ALFORD	H	6/7	117	210	51.5	51.7	3.6	2.9	380	17198
LOUISIANA TECH DAIRY	H	6/13	41	229	51.3	58.2	3.1	2.8	363	22651
TO-BEV FARMS	H	5/9	169	233	51.1	57.4	3.0	3.0	273	17604
BRENT & LAURIE DUNCAN	H	6/22	262	240	48.7	52.0	3.5	3.0	297	16511
C JOHNSON & W LITWILLER	H	6/27	93	324	48.2	49.9	3.5	3.0	405	19360
UDDER FRESH	H	6/26	101	254	47.4	50.3	3.5	3.1	369	18181
GALEN NIGHTINGALE	H	6/27	72	267	46.7	54.5	3.2	3.0	463	20215
RUSSELLAND RUSTY CREEL	H	6/23	97	228	46.1	51.0	3.8	2.9	294	16758
CIRCLE G FARMS	H	6/19	156	231	45.9	52.8	3.4	3.0	234	17993
DARREL VARNADO	J	6/29	75	241	44.1	44.3	4.4	3.3	305	14986
MARK WASKOM	H	5/31	82	233	43.6	48.6	3.7	3.0	552	15951
MARVIN FLETCHER	H	6/14	172	248	43.2	51.7	3.6	3.0	425	17110
KARIE AND BRAD BLADES	H	6/6	163	308	43.1	48.1	3.4	3.0	.	17087
JOHN FAUNCE JR DAIRY	H	6/6	233	229	40.4	45.8	3.4	3.0	.	17660
LOUISIANA TECH DAIRY	J	6/13	44	230	38.6	45.5	4.1	3.4	650	16277
RODNEY HOLDEN	H	6/13	50	251	36.2	40.6	3.7	3.0	393	16189

TOP HERDS BY TEST DAY WEIGHTED AVERAGE SCC (MILKING COWS)

NAME	BR	DATE	COWS	DIM	ECM	MILK	FAT%	PRO%	SCC	RHA
BRENT & LAURIE DUNCAN	H	5/17	264	206	44.7	51.0	3.0	2.8	138	16437
NED SIMMONS	H	4/21	186	174	48.3	49.2	3.7	3.2	198	13813
BROWN DAIRY FARM	H	4/25	195	222	60.0	62.9	3.5	3.0	213	18848
BANKSTONS UDDERWISE DAIRY	H	4/18	58	189	41.1	49.4	3.2	2.9	222	12969
ROBERT HUTCHINSON JR	H	4/23	119	185	16.5	54.1	.	.	244	14386
CIRCLE G FARMS	H	5/15	156	214	56.8	62.6	3.5	2.9	246	17789
SE LA EXP STATION	H	5/20	214	200	62.6	65.8	3.4	3.1	273	21084
TO-BEV FARMS	H	5/9	169	233	51.1	57.4	3.0	3.0	273	17604
PHILLIP ROBERTS	H	4/26	301	158	46.0	49.8	3.5	3.1	275	15017
NOLAN D ALFORD	H	5/4	120	171	50.6	56.6	3.2	3.0	280	14284
RUSSELL AND RUSTY CREEL	H	5/9	92	214	50.8	55.4	3.6	3.1	292	16678
LADD BLADES	H	5/8	224	190	66.2	65.2	3.7	2.9	299	19933
PINE GROVE FARMS	H	5/12	102	224	60.9	60.8	3.6	3.0	301	.
ANDY HERRING	H	4/24	301	198	49.7	56.3	3.0	3.1	318	.
LSU DAIRY	H	5/15	78	206	75.7	81.9	3.3	3.1	321	23753
MARLYNN FARMS	B	5/1	135	193	48.4	54.3	3.1	3.1	343	14431
ROBERT A. & STEPHEN A. FORNEA	H	4/30	91	232	42.4	48.4	3.5	3.1	346	15327
HILL FARM RESEARCH STATION	J	5/23	118	206	46.9	45.7	4.3	3.3	347	13998
JAMES ROGERS	H	4/26	90	211	12.6	42.5	.	.	350	13548
HOLLIS BANKSTON & SONS	H	4/26	93	231	43.2	48.1	3.7	3.0	375	16821
CLIFFORD CHAMPLIN	H	4/29	219	159	72.5	73.5	3.5	3.0	430	21684
M & B DAIRY FARM INC.	H	5/18	137	195	34.2	42.5	3.1	2.9	434	14731
CHARNEL BAILEY	H	5/8	246	189	14.9	47.4	.	.	434	14017
J PAUL ALFORD	H	5/1	114	178	63.7	64.9	3.3	3.1	437	17118
C JOHNSON & W LITWILLER	H	5/18	100	290	62.3	63.8	3.5	3.0	438	19531

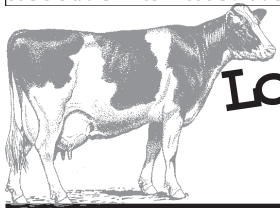
TOP HERDS BY TEST DAY WEIGHTED AVERAGE SCC (MILKING COWS)

NAME	BR	DATE	COWS	DIM	ECM	MILK	FAT%	PRO%	SCC	RHA
BANKSTONS UDDERWISE DAIRY	H	6/16	56	184	30.4	44.1	3.3	2.8	121	13046
NED SIMMONS	H	6/6	178	196	40.4	43.4	3.8	3.2	157	13949
ROBERT HUTCHINSON JR	H	5/30	106	213	14.3	45.8	.	.	199	14562
PHILLIP ROBERTS	H	6/8	298	181	41.4	47.1	3.2	3.0	201	14770
CIRCLE G FARMS	H	6/19	161	231	45.9	52.8	3.4	3.0	234	17993
ROYCE SALLEY	H	6/19	266	200	37.3	41.4	3.6	3.0	265	12986
TO-BEV FARMS	H	5/9	191	233	51.1	57.4	3.0	3.0	273	17604
JACKSON BRUMFIELD	H	6/10	65	186	10.3	43.4	.	.	277	11991
JAMES ROGERS	H	5/31	85	237	10.8	37.5	.	.	282	13428
RUSSELL AND RUSTY CREEL	H	6/23	106	228	46.1	51.0	3.8	2.9	294	16758
BRENT & LAURIE DUNCAN	H	6/22	264	240	48.7	52.0	3.5	3.0	297	16511
DARREL VARNADO	J	6/29	76	241	44.1	44.3	4.4	3.3	305	14986
M & B DAIRY FARM INC.	H	6/19	143	214	30.4	38.6	2.9	2.9	316	14465
LSU DAIRY	H	6/13	80	227	68.4	74.3	3.6	2.9	322	23800
FIVE R FARM	H	5/29	208	281	31.9	34.5	3.7	3.4	327	11024
LADD BLADES	H	6/9	227	222	61.8	61.1	3.6	3.0	338	20097
ROBERT & STEPHEN FORNEA	H	4/30	272	232	42.4	48.4	3.5	3.1	346	15327
LOUISIANA TECH DAIRY	H	6/13	46	229	51.3	58.2	3.1	2.8	363	22651
UDDER FRESH	H	6/26	101	254	47.4	50.3	3.5	3.1	369	18114
BROWN DAIRY FARM	H	6/28	195	264	56.6	59.9	3.6	3.1	372	18870
CLIFFORD CHAMPLIN	H	6/17	223	209	63.5	62.8	3.6	3.0	376	21773
J PAUL ALFORD	X	6/7	113	210	51.5	51.7	3.6	2.9	380	17198
RODNEY HOLDEN	H	6/13	128	235	34.7	41.0	3.7	2.9	386	15220
CLINTON STEVENS	H	6/7	127	252	42.5	48.0	3.3	3.2	393	15824
C JOHNSON & W LITWILLER	H	6/27	104	324	48.2	49.9	3.5	3.0	405	19360

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