



Louisiana

Dairy Digest

Your Herd Management Resource

EXTENSION PROGRAMS

Agriculture
Economic/Community Development
Environment/Natural Resources
Families/Nutrition/Health
4-H Youth Programs

Dairy Specialists:

Dr. Gary Hay
Dr. Charles Hutchison
225-578-2214

November - December 2002

Dairy Herd Improvement

Joe Trabeaux
Mark Williams
225-578-6099

Biosecurity on a Dairy Farm

Gary M. Hay and Charles F. Hutchison, Dairy Specialists
Department of Dairy Science, LSU AgCenter

Biosecurity refers to protecting the health of livestock by preventing the transmission of diseases or contaminants that could jeopardize the health of your animals. Any disease, chemical, poison or other contaminant that could jeopardize the health of animals is a threat to the economic viability of the farm and the welfare of the owner/operators. Some of the best investments you can make are taking common sense precautions to protect the health of your animals.

Infectious diseases are caused by many different types of living organisms. Most infectious organisms are microscopic in size and cannot be seen. We usually can't tell whether something is carrying an infectious organism simply by looking at it. We must assume that any animal or object that enters the farm is a potential carrier of infectious disease.

Infectious diseases can be spread in a number of ways. Some are spread by direct contact with infected animals such as purchased animals, insects, wildlife or vermin. Others can be spread by indirect contact with objects that carry the organisms such as milking equipment, purchased feed or other supplies, visitor's shoes or clothing, delivery vehicles and even the wind.

Unsanitary conditions on the farm can also lead to the spread of disease causing organisms. Many of the most common disease causing organisms occur naturally throughout the environment. Without the ideal growing conditions, most organisms only occur in such small numbers that they do not pose a serious threat to normal, healthy animals. However, in unsanitary conditions organisms can multiply to the point where they can overwhelm the immune systems of even healthy animals.

Many products and chemicals commonly used on a dairy farm such as fertilizers, pesticides, fuels, lubricants, cleaners and sanitizers can also be toxic to animals. Even one mistake in handling or storing such products can cause extreme suffering and death of animals as well as severe economic losses for the owner/operator.

What can I do to ensure the biosecurity of my farm?

Without a doubt, it is physically and economically impossible to completely eliminate all the risks that can potentially damage the health of animals on a farm. But, there are several common sense precautions which will reduce the risk of injuring animals on your farm. The first step is to develop a biosecurity plan for your farm that includes three basic components:

1. Identifying and Controlling Risks

- Anticipate risks to your operation and minimize them. Don't wait for something unfortunate to happen.
- Identify areas or activities where problems might occur. Do a visual inspection of your operation and determine potential problem areas or activities.
- Prioritize potential problems. For example, storing fertilizer or chemicals even temporarily where animals can come into contact with them is potentially a serious threat. Dealing with this type of problem should be on your priority list.
- Consult with outside experts when developing your plan. Your veterinarian, extension agent, university scientists and state Department of Agriculture personnel can help you locate potential problem areas and they can also offer suggestions to reduce your risk.
- Plan how to deal with potential problems. Once a risk has been identified, a solution to minimize the risk should be undertaken.



- Update your plan regularly. Don't take for granted once you have done this one time that the risk from potential hazards will remain unchanged.

2. Education and Training

- Train your employees, suppliers and customers on the importance of biosecurity. Screen potential employees for past training and experience with biosecurity.
- Have suppliers and other persons entering the farm routinely disinfect their shoes or provide plastic disposal boots to those whose shoes cannot be disinfected.
- Limit access to critical areas of the farm by outside visitors.
- Limit farm entry points and develop a system to identify visitors. This is the only way to gain control of who enters the farm, determine whether or not they have followed good biosecurity practices such as disinfecting their shoes and control what areas of the farm they can access.

3. Monitoring and Securing Potential Hazards

- Secure any hazardous materials, energy and water sources.
- Make sure fences are in good repair to prevent animals from entering unsafe areas and/or coming into contact with unsecured animals from neighboring farms.
- Routinely monitor employee activities to make sure they are following safe and sanitary procedures.
- Routinely monitor recommended procedures to make sure you are using the most up-to-date practices to ensure animal health.
- Routinely monitor visitors to make sure they are following farm policies on biosecurity.

How can I minimize the risk of spreading disease throughout my herd?

- Follow a vaccination program recommended by your veterinarian for all animals on your farm.
- Determine the health history of livestock and their source farm BEFORE you purchase them.
- Segregate purchased or outside animals as well as returning animals (show animals, custom raised heifers, etc.) for at least 21 days before returning them to contact with other animals in the herd. Carefully monitor the health of segregated animals.
- Have animals tested by your veterinarian for potential health problems before purchasing them. One major health problem many people overlook is contagious mastitis such as mastitis caused by *Streptococcus agalactiae* or *Staphylococcus aureus*. Milk any purchased animals AFTER your herd has been milked until you are positive they are not a source of contagious mastitis. If you have any question about the health of purchased milking animals, have them tested for contagious mastitis BEFORE placing them in the milking herd. Failure to have purchased animals tested can very easily lead to spread of the disease into healthy animals resulting in the loss of numerous healthy animals.
- Prevent contact with other livestock through fencelines, transport vehicles, sales, shows, fairs, etc.
- Control animal contact with stray cats and dogs.
- Implement practices to limit contact with wildlife, including deer, waterfowl and birds.
- Implement control measures for mosquitoes, flies, birds and rodents. Any type of unsanitary conditions, even if farm animals do not have direct access to them, can become biosecurity hazards.
- Implement an integrated pest management program to control other insects and parasites which could damage the health of your animals.
- Purchased feeds can be a potential source of disease causing organisms and contaminants. Purchase feeds from sources using quality control measures to minimize the risk of fecal, organic and/or chemical contamination.
- Make sure purchased feeds do not contain protein derived from ruminant tissues.
- Make sure any delivery vehicles arriving on the farm are relatively clean.
- Park and unload delivery vehicles as far away from animals as possible.

These are just a few suggestions to help improve the biosecurity on your farm. Most of these suggestions are inexpensive, common sense practices that are relatively easy to implement and will greatly reduce the biosecurity risk on your farm. Biosecurity is one of the best investments you can make to protect the health of your animals and the welfare of your family.

MYCOPLASMA MASTITIS

Gary M. Hay, Dairy Specialist

Department of Dairy Science, LSU AgCenter

Mastitis is a well-recognized and costly disease of dairy cattle. Most dairy producers are well acquainted with contagious forms of mastitis such as mastitis caused by *Streptococcus agalactiae* and *Staphylococcus aureus*. Another form of contagious mastitis, known as *Mycoplasma mastitis* has recently been discovered in at least one dairy herd in Louisiana.

Mycoplasma mastitis was first reported in a U.S. dairy herd in Connecticut in 1961. Since then it has been reported in all parts of the U.S. *Mycoplasma mastitis* was once thought to be a problem only for large western dairy herds, but more recently has become a major problem in many parts of the country.

What is *Mycoplasma mastitis*?

Mycoplasma are a class of bacteria that can actually cause a number of different problems in cattle. Different species of *Mycoplasma* organisms are frequently associated with respiratory infections, reproductive infections and mammary gland infections in cattle. Mastitis-causing *Mycoplasma* organisms are even commonly found in the mucous membranes of the respiratory tract and urogenital tracts of healthy cows. Stresses such as calving, transportation, other diseases and external trauma may weaken the animal's immune system and allow the organisms to enter other body tissues such as the mammary gland, causing clinical mastitis.

Is *Mycoplasma mastitis* contagious and how is it spread from one cow to another?

Yes, *Mycoplasma mastitis* is highly contagious. *Mycoplasma* infections can easily spread to uninfected cows through direct contact such as coughing, nasal discharges, urogenital discharge, etc. *Mycoplasma* can even be spread through blood-to-blood contact such as using needles on multiple cows.

The most common cow-to-cow transmission of mastitis-causing *Mycoplasma* organisms occurs during the milking process through teat cups and hands. *Mycoplasma* is spread from infected cows onto teat cups or milkers' hands. It is then spread from the teat cups or milkers' hand to uninfected cows by improper milking procedures. *Mycoplasma* can also be spread by poor mastitis treatment procedures. Failure to clean and sanitize the teat ends properly before administering mastitis treatments may actually spread *Mycoplasma* from infected cows to uninfected cows.

How can *Mycoplasma mastitis* get into my herd?

The primary method of spreading *Mycoplasma* from one herd to another is through purchased animals.

What are the clinical signs of *Mycoplasma mastitis*?

Cows of all ages and stages of lactation are susceptible to *Mycoplasma mastitis*; however, early lactation cows seem to exhibit more severe symptoms due to the increased udder edema and stress. The characteristic signs of *Mycoplasma mastitis* in lactating cows are:

1. An increase in severe clinical cases in the herd that respond poorly or not at all to treatment.
2. One or more severe cases of mastitis that exhibit a dramatic drop off or cessation in milk production; in many cases milk production never recovers.
3. More than one quarter is involved in the infection; sometimes all four quarters are involved.
4. Abnormal udder secretions that may vary from watery milk with a few clots to a colostrum-like material. Chronically infected cows may show a tannish secretion with sandy or flaky sediments that resembles cooked cereal in a whey-like fluid. These secretions may become purulent and last for several weeks.
5. Some cows, and especially young calves, may exhibit swelling and stiffness in one or more joints.

How do I treat for *Mycoplasma mastitis*?

There are no known effective treatments for *Mycoplasma mastitis* since the organism does not respond to antibiotic therapy. Once a cow is infected, the only way to eliminate the potential for the cow to spread the disease is to cull her.

How do I know if I have Mycoplasma mastitis in my herd?

If your herd has one or more cows exhibiting mastitis with the symptoms described above, you may or may not have Mycoplasma mastitis in your herd; the only way to be absolutely sure is to run an identification culture from milk samples. Bulk tank cultures have been shown to be useful but not entirely exact in identifying the degree of Mycoplasma infection in a herd. The only way to be reasonably sure is to culture milk samples from cows suspected of carrying the disease.

Prevention of Mycoplasma mastitis

By far the most economical way to deal with Mycoplasma mastitis is prevention. The first step to preventing the disease is not to bring it into your herd. Any time you purchase cows, they should be quarantined from the milking herd for at least 21 days or until you can be sure they do not have mastitis. Milk any purchased cows AFTER the rest of the cows in the milking herd until you determine the purchased cows are not infected. While this may seem like an unnecessary expense, it only takes one purchased cow with Mycoplasma mastitis to cost you several thousand dollars to clean up a bad situation. This can even quickly put a farm into bankruptcy. If you purchase any cows you suspect may have Mycoplasma mastitis, contact your local county agent to ask about getting the cow tested for Mycoplasma.

Making sure you and your employees are following proper procedures for good milking hygiene is also critical to prevent the spread of Mycoplasma and other forms of contagious mastitis. First of all, clean and dry the teats before milking. Use single service towels, do not use towels on more than one animal. This is a sure way to spread contagious mastitis. Don't forestrip milk into your hands. Using latex gloves to milk will also help prevent the spread of contagious mastitis. Pre-dip and post-dip teats in a 0.5% or 1.0% commercial iodine teat dip. Don't use sanitizers and disinfectants such as UdderWash and Clorox as teat dips. When treating cows for clinical mastitis, make sure you scrub the teat ends thoroughly with alcohol before treating, then only partially (1/4" to 1/2") insert the tip on the mastitis treatment tube into the teat end. Any of these steps you leave out or compromise on will increase the chances of spreading contagious mastitis in your herd.

Mycoplasma mastitis is something to take very seriously.

Mycoplasma mastitis is not a disease to take lightly. The fact that it is highly contagious and causes a devastating form of severe mastitis means that it can cause economic havoc in a dairy herd very rapidly. It can cause a significant drop in milk production in a large number of cows, especially fresh cows, in a matter of weeks or even days. Since there is no way to treat the disease, infected animals need to be culled from the herd as quickly as possible to prevent the infection from spreading. This means losing a lot of money in a hurry from lost milk production and having to cull a large number of cows. Fortunately, following good prevention techniques such as quarantining purchased animals and using good milking hygiene can easily and inexpensively prevent outbreaks of the disease. Don't take chances with your livelihood; use these common sense techniques to prevent Mycoplasma mastitis from impacting your herd.

Effects of Feeding Milk Replacer Once Versus Twice Daily on Glucose Metabolism, Growth and Starter Intake in Holstein and Jersey Calves

C. C. Stanley, C. C. Williams, Graduate Student and Professor
Department of Dairy Science, LSU AgCenter

In most feeding systems calves are fed milk replacer (MR) in two equal feedings per day. Once daily feeding systems can be used, but careful management is vital to their success. Previous research has shown that feeding milk replacer once daily reduces labor without affecting health, weight gain, or starter consumption of calves. In addition to milk replacer, conventionally raised dairy calves are also fed calf starter which has been shown to promote both physical and functional rumen development. Two studies were conducted at the LSU Dairy Science Research and Teaching Farm in Baton Rouge, LA to determine if feeding calves a large volume of MR once daily would have adverse effects on growth rates and starter intake as well as glucose metabolism.

Experiment 1 included 18 Holstein heifer calves born and housed at the LSU Dairy Science Research and Teaching Farm in Baton Rouge, LA. Experiment 2 included 15 Jersey heifer calves were and housed at the Hill Farm Research Station in Homer, LA. In both experiments, calves were fed colostrum and then a commercial MR twice daily during the first week of life. The MR (Nursetrate NT-P; Moormans, Inc., Quincy, IL) contained 22% CP and 15% crude fat and was medicated (220g oxytetracycline and 485g neomycin base per metric ton). Milk replacer powder was reconstituted to 15% dry matter and fed at a rate 10% of initial body weight in either one or two equal feedings per day. Calves were also fed a commercial calf starter. Calves began their treatment at 1-wk of age. Calves assigned to Treatment 1 continued to receive MR twice

assigned to Treatment 2 were fed the same amount of MR powder in one daily feeding. At 5-wk of age, the total volume of reconstituted MR offered was reduced by 50% for all calves. Calves were abruptly weaned at 6-wk of age. All calves were weighed at birth and once weekly from weeks 1 to 8. Jugular blood was collected during weeks 1 to 6 and week 8 of age from all calves immediately prior to and at 30, 60, 90, 120, and 180-min after the a.m. feeding. Plasma was analyzed for glucose, insulin, and fatty acid concentrations. Feeding calves MR once daily or twice daily did not affect starter consumption or weight gain. No differences were detected in weaning or end of trial weights between the two treatments.

Feeding calves MR once daily also did not negatively affect glucose metabolism. Overall, MR feeding frequency did not affect plasma fatty acids, glucose, or insulin concentrations or urinary glucose concentrations. Plasma glucose concentrations were higher in Holstein calves than in Jersey calves, but plasma fatty acid concentrations were greater in Jersey than in Holstein calves. Plasma concentrations of insulin appeared to be similar for the two breeds. These data indicate that there may be evidence of metabolic differences between Holstein and Jersey calves, but both breeds of calves performed as well on once daily feeding as on twice daily feeding programs.

Table 1. Starter intake and body weights of calves fed milk replacer (MR) once (1x) or twice (2x) daily.

	<u>Holstein Calves</u>			<u>Jersey Calves</u>	
	<u>2X MR</u>	<u>1X MR</u>		<u>2X MR</u>	<u>1X MR</u>
Birth Weight (lb)		88.20	78.50	59.00	59.00
Weaning Weight (lb)	114.20	116.90		73.00	68.60
Weight at 12 weeks (lb)	140.00	140.90		82.50	81.10
Starter intake (lb/day)	1.70	1.70		1.10	1.10
Starter intake (% of body weight)	1.36	1.44		1.56	1.53

Blast on Ryegrass

Ed Twidwell and Brad Venuto, Forage Specialists
LSU Agricultural Center

Blast on ryegrass is a fungal disease which has been seen on a widespread basis this fall in southeast Louisiana and southern Mississippi. The symptoms of blast are round to oval lesions with a gray center on the leaf blades. The lesions often merge, extending the width of the leaf blades and killing the leaf from the point to the leaf tip. The most probable cause of blast this fall is the warm, wet and humid conditions that were present in mid-to-late October. Infection of this disease occurs when plants are exposed to 24 hours or more of continued leaf wetness. If a large number of plants in a given field become infected, the field will take on a gray appearance.

This disease has the potential to kill or severely damage young seedlings. Producers may have to reseed some areas in which seedlings have been killed. On ryegrass that has 3 to 6 inches of growth on it, it would probably be alright to lightly graze if the plants have blast on them. This would remove the old, dead leaves and allow some sunlight to penetrate the ryegrass canopy. The plants should recover fairly well from a light grazing. There are no labeled fungicides for control of blast on ryegrass. The best cure for this disease will be plenty of dry, cool weather and sunshine. Call you county agent if you suspect you have blast on your ryegrass.

THIRTEENTH ANNUAL MISSISSIPPI/LOUISIANA DAIRY MANAGEMENT CONFERENCE

December 5, 2002

**Percy Quin State Park Convention Center
McComb, Mississippi**

(Six miles South of McComb, Exit 13 off I-55)

9:00 AM Registration and View Commercial Exhibits

9:30 AM Program

Tunnel Ventilation: An Option for Dairy Producers in the Southeast

- ◆ *Dr. Terry Smith, Research & Teaching Professor*
- ◆ *Mississippi State University Animal and Dairy Sciences Department*

Dr. Smith is one of the lead researchers coordinating a heat stress project at the MSU Holly Springs Research Station using tunnel ventilation and evaporative cooling. After two summers of using a specially designed barn, Dr. Smith will be presenting the results of their study.

Management Tools to Lower Herd Somatic Cell Counts, Promote Milk Quality, Maximize Yield, and Enhance Profits to the Producer

- ◆ *Dr. Steve Nickerson, Head, Dairy Science Department*
- ◆ *Virginia Tech, Blacksburg, Virginia*

Producer Response Panel Will Follow This Presentation

Dr. Nickerson is internationally known for his research efforts with mastitis, much of which was conducted at the North LA Hill Farm in Homer, LA. Currently he is serving as the Dairy Science Department Head at VPI. Dr. Nickerson will discuss ways to maximize income by lowering somatic cell counts and qualifying for milk quality bonuses.

Making Tunnel Ventilation Work on Commercial Dairy Farms

- ◆ *Mr. Bill Swift, Herdsman/Manager, North Florida Holsteins*
- ◆ *Bell, Florida*

Mr. Swift is the manager of North Florida Holsteins, a 3500 cow dairy in North central Florida. Recently Mr. Swift has overseen the conversion of two traditional freestall barns into tunnel ventilation barns. He will relate his experiences with cooling dairy cows in the Southeast.

➤ Mr. Swift's presentation is being sponsored by Monsanto Dairy Business.

Please make plans to attend. Lunch will be served at the conclusion of the program, sponsored by the commercial exhibitors and sponsors of the conference. For further information, contact Wesley Farmer at (601) 835-3460 or Dr. Charlie Hutchison at (225) 578-2214.

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

NAME	DATE	BR	COWS	DIM	*ECM	FAT%	PRO%	RHA
SE LA EXP STATION	9/17	H	216	230	48.1	3.8	2.9	21717
GALEN NIGHTINGALE	9/24	H	86	229	47.8	3.2	2.9	21353
O B MITCHELL	9/17	X	73	202	46.8	3.8	3.2	20405
FARMER'S DAIRY	9/12	H	53	252	45.2	3.8	3.0	19100
LSU DAIRY	9/14	H	59	291	44.1	4.3	3.1	17131
HALL BURFORD	9/17	H	176	205	43.3	3.5	3.0	20109
RAYMOND SCHMIDT	9/24	H	88	305	43.0	3.2	2.8	17995
MARVIN FLETCHER	9/12	H	175	194	42.3	3.1	2.7	18661
NOLAN D ALFORD	9/4	H	118	205	41.1	3.6	3.0	15995
J PAUL ALFORD	9/11	H	113	227	40.6	4.2	3.1	20411
UDDER FRESH	9/11	H	117	274	40.4	4.0	3.2	17165
CIRCLE G FARMS	9/18	H	142	197	40.3	3.4	3.0	17446
ANDREW R. HERRING	9/19	H	300	201	40.1	3.5	2.9	17677
TO-BEV FARMS	9/17	H	187	235	39.8	3.1	3.0	20108
DUSTY SCHILLING	9/21	H	90	192	39.4	3.6	2.7	18163
LOUISIANA TECH DAIRY	9/6	H	53	250	38.8	2.8	2.7	20745
BOBBY GOINGS	9/24	H	88	253	38.2	3.5	3.1	18073
LADD BLADES	9/25	H	204	221	37.9	3.9	3.3	18967
PHILLIP ROBERTS	8/29	H	144	229	36.9	3.4	3.0	17276
LEESFIELD DAIRY FARM	9/3	H	96	214	35.9	3.4	3.2	17248
JOHN FAUNCE JR DAIRY	9/3	H	227	238	35.7	3.3	3.0	16569
EUGENE ROBERTSON	9/17	H	158	258	35.7	3.4	3.0	21571
DARYL & MARY JO ROBERTSON	9/18	H	78	222	35.0	3.6	2.9	19604
CLINTON STEVENS	9/4	H	136	219	34.8	3.6	3.1	14597
PHILLIP ROBERTS	8/29	X	91	182	34.5	3.8	3.4	15904
MOCKING BIRD DAIRY	8/30	H	76	225	34.4	2.9	2.9	18246
FIVE R FARM	9/16	J	135	219	34.3	4.3	3.5	11564
UDDER FRESH	9/11	H	8	346	34.3	3.9	3.1	17461
LANNY CONERLY	9/23	H	56	245	34.0	3.6	3.3	15477
BILLY ANDREWS	9/12	H	96	285	33.9	3.6	3.4	19916
ROBERT POTTS	9/19	H	165	219	32.9	3.2	2.9	16539
RODNEY HOLDEN	9/4	H	132	199	32.4	3.5	2.8	14088
LANNY CONERLY	9/23	H	143	222	32.1	3.4	3.2	14713
FIVE R FARM	9/16	H	103	275	31.8	3.6	3.1	13703
LOUISIANA TECH DAIRY	9/6	J	44	220	31.4	3.8	3.3	14698
PECAN HILL DAIRY	8/29	H	22	240	30.9	3.8	3.0	15959
BROWN DAIRY FARM	9/17	H	160	275	30.1	3.7	3.3	19327
AVERAGE			119	235	37.8	3.6	3.1	17721

* (Energy Corrected Milk) = (.3246*MILK LBS)+(12.86*FAT LBS)+(7.04*PROTEIN LBS)

LSU AgCenter
Cooperative Extension Service
U.S. Department of Agriculture
Post Office Box 25100
Baton Rouge, LA 70894-5100

OFFICIAL BUSINESS

Penalty for Private Use, \$300



Louisiana

Dairy Digest

Your Herd Management Resource

Contact your county agent
for more information on any
dairy herd management topic.

COOPERATIVE EXTENSION SERVICE

Knapp Hall, LSU Campus
Baton Rouge, Louisiana 70803
Post Office Box 25100
Baton Rouge, Louisiana 70894-5100
(225)578-4141
Fax: (225)578-2478
Website: www.lsuagcenter.com

EXTENSION PROGRAMS

Agriculture and Forestry
Community Leadership
Economic Development
Environmental Sciences
Family and Consumer Sciences
4-H Youth Development
Natural Resources

Dairy Specialist