



Western Dairy News

for the West, about the West, from the West

Defending the nation's milk supply

by Dr. Ellen Jordan
Professor & Extension Dairy Specialist,
Texas A&M University System

Dairy farm workers provide the first line of defense in keeping cows healthy and content. As part of our educational effort with the National Center for Foreign Animal and Zoonotic Disease Defense, three training modules for English and Spanish speaking employees were developed. Each module consists of a PowerPoint presentation and fact sheet. Both are provided in English and Spanish versions. These modules are available for you to download at: <http://texasdairymatters.org>.

The modules target three distinct groups of employees: the general worker, the milking center staff, and the animal health team. A summary of the three modules follows.

Biosecurity for dairy workers

An important part of defending our nation's milk supply is biosecurity, defined as managing the herd to prevent the introduction and spread of infectious diseases. Biosecurity is the term that includes all the steps taken to prevent infectious diseases from affecting a herd of animals and the people who care for them.

There are four basic goals for any farm's biosecurity program:

1. Prevent the spread of disease, both onto the farm and between animals on the farm.
2. Improve animal welfare by keeping the animals healthy.
3. Identify the disease early if it gets on the farm.
4. Protect the safety of the food supply.

To accomplish these goals workers must understand how diseases spread. They do so in two ways: directly and indirectly. Direct transfer of disease occurs when one animal gives it to another. Indirect transfer happens when some type of equipment or

other object that is contaminated with the disease-causing organism carries the disease to another animal. Some examples of disease carrying objects include boots, coveralls, needles, syringes, obstetrical chains, skid steers, tractors and loaders.

To prevent the spread of disease requires training employees to keep all equipment clean. Common disinfectants include Nolvasan solution, household bleach (1 part bleach to 10 parts water), and chlorhexidine. Each farm owner should work with their veterinarian to determine the best disinfectant for particular areas.

Always follow set procedures when cleaning trailers, tractors, etc.

- Start by removing loose dirt, hay, manure, etc.
 - Remove mats whenever possible, because they trap debris.
 - Start at the front ceiling and work your way to the back.
 - Work from the top to the bottom.
 - Pay particular attention to wheel wells and the undercarriage.
 - Don't forget the gates in trailers and tailgates in pickups.
 - Leave disinfectant on for 20 to 30 minutes before rinsing.
 - In trucks, clean and disinfect pedals and mats as well.
 - After cleaning, allow the vehicle to dry and then put away supplies.
- Although specific procedures for providing the best animal care vary for different areas of the dairy, always provide a clean, low stress environment. Stress reduces an animal's ability to fight disease. Although vaccination programs differ from farm-to-farm, they help keep animals healthy. Administer vaccines correctly, including giving the right amount or dose, using the correct route of administration (intramuscular or subcutaneous), and in the right location.

Whether you are moving animals to and from

the parlor or caring for baby calves, always handle animals gently and calmly.

By practicing basic biosecurity steps, workers help keep animals on the farm healthy. They also reduce the risk of taking diseases home to their own animals, minimizing the risk that they or someone in their family may get sick. And finally, practicing basic biosecurity procedures helps keep the dairy producer in business.

The basic clinical exam:

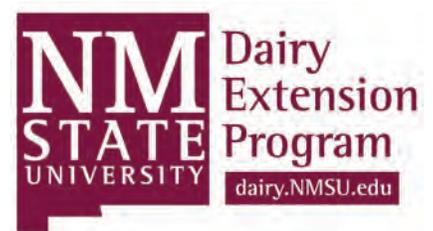
Finding and treating sick animals early is the key to maintaining a safe, nutritious food supply. On dairies, this begins with a basic physical exam of the cow. Frequently a staff member, trained by the herd veterinarian, identifies cows that appear abnormal and conducts a basic exam. The goals of a physical exam program include:

1. Identify sick cows early.
2. Treat sick cows early.
3. Prevent spread of diseases.
4. Protect the food supply.
5. Improve animal welfare.

To conduct a basic physical exam, workers must first learn the normal characteristics of a cow. For example, normal heart rate is 60 to 70 beats per minute, respiration rate is 30 breaths per minute, temperature is 101.5° to 102°F; and rumen contractions are once or twice per minute. For daily monitoring, they should focus on four main areas: temperature, appetite, uterine discharge (particularly fresh cows), and hydration status.

Develop a systematic approach to check the following items: attitude, appetite, general appearance, hydration, temperature, feet and legs, udder, uterus, heart rate, lungs, rumen and manure. Once identified, record the disease diagnosis and treatment for each cow. At a minimum include the date, cow identification, symptoms, diagnosis and treatment in written records. If a treatment protocol re-

Western Dairy News is a collaborative effort of Dairy Specialists from:



Knowledge to Go Places

Extension Service



quires antibiotics, follow the withdrawal times for both meat and milk.

Employees must be encouraged to complete a physical exam rather than stop after identifying the first symptoms in order to accurately diagnose the problem. All normal and abnormal signs found during the exam help with determining an accurate diagnosis. Follow the treatment indicated in the dairy's protocols for each specific illness. In the event of no response to treatment, contact the herd veterinarian or supervisor immediately.

Keeping cows healthy goes beyond routine physical exams. Proper nutrition throughout the animal's life is needed to maintain her immune system. Nutrition from the close-up period immediately before calving through early lactation is particularly important.

Providing early assistance with calving, if needed, is critical. In addition, providing a clean, comfortable environment also helps minimize disease. Keeping cows standing for at least 30 minutes after milking by providing fresh feed can reduce mastitis by allowing time for their teat sphincter muscles to close.

Routine evaluation of cows in a herd with a basic physical exam helps identify sick animals early so they can be treated. When treatment is needed, follow herd specific protocols and carefully adhere to the label for meat and milk withdrawal periods.

Abnormal symptoms that could indicate a new disease in the herd should be reported to the herd owner, veterinarian or manager immediately. They could be a foreign or emerging disease. Rapid identification is the key to preventing spread of these diseases.

Defending milk supply in the parlor

Key steps for employees in the parlor to create a line of defense for the milk supply are covered in the third module. When everyone in the parlor works together they can achieve four goals to provide a safe, abundant milk supply for consumers.

The first is to harvest the highest quality product possible. The five steps to harvesting high quality products include:

1. Using proper, sanitary milking procedures.
2. Maintaining the milking equipment.
3. Dipping all teats after milking.
4. Detecting and treating cows with mastitis, as needed, during lactation and at dry off.
5. Culling cows with chronic mastitis.

Employees are encouraged to wear gloves during milking to limit spreading bacteria from cow to cow, cow to equipment to cow, or even from cow to worker. Bare hands provide many cracks and crevices for bacteria to hide. Gloves create a much smoother surface that is easier to clean. Even gloved hands can carry bacteria, so they require frequent washing as well.

The second goal in defending the milk supply is to take good care of the cows and identify those that are sick. Whenever employees move cattle, slow and easy works best. They should take time to look for abnormalities in behavior and appearance when moving cows to and from the parlor.

Once in the parlor, employees should be taught to identify cows with mastitis. When stripping out foremilk, employees should look for clots or any change in milk appearance. When handling the udder, milkers should check for hard or "hot" spots that may indicate an infection. Making sure that all quarters have milked out evenly is important. If incomplete milkout occurs, check for mastitis in the quarter that has residual milk.

Milking center employees should also be trained to look beyond mastitis for other signs of illness. Some of the common questions they should answer include:



- Are there lame cows?
- Are some cows slow to come to the parlor or to leave?
- Do they see lesions or blisters on any teats, udders or mouths?
- Are cows more restless in the milking parlor?

If anything appears abnormal, employees are encouraged to tell the manager, because all of these signs could indicate a herd health problem.

Most herds have vaccination programs designed to protect cows against many common diseases. Early detection of any disease by milking center employees can prevent its spread and minimize the impact on the herd.

The third goal for milking center workers, as well as everyone on the dairy, is to produce meat and milk that are free of antibiotics. Although not all workers may be administering antibiotics to animals, it is critical that everyone understands that they are used to both treat and prevent diseases in food animals.

Antibiotics are necessary for the treatment of disease in animals and everyone on the farm needs to work together to insure that they do not enter the food supply. Thus, milking center employees need to know how to identify cows that have been treated for mastitis.

A common employee question addressed is, "What is the difference between an antibiotic residue and antibiotic resistance?"

Antibiotic residue is a detectable amount of antibiotics in either the meat, milk or both after using antibiotics to treat cows and calves for mastitis, pneumonia, metritis, diarrhea or other

diseases. Antibiotic resistance is when an antimicrobial substance is no longer effective in killing or inhibiting the growth of bacteria that once was susceptible to it. Antibiotic resistance has been an issue since the discovery of antibiotics.

There are several concerns with antibiotic use: **Food safety.** Is there an antibiotic residue in milk, meat, eggs, etc.? This is important because some people have allergic reactions to antibiotics.

Public perception that many bacteria which cause illnesses in humans are becoming resistant to antibiotics.

Growing concern that antibiotics used in livestock have created part of the resistance problem, whether it is true or not.

A second common question addressed is, "What are the consequences of residues in meat or milk?"

At the slaughter plant a carcass that tests positive for antibiotics is condemned and discarded. If a milk tank tests positive for an antibiotic residue, the milk is discarded. Either way the producer does not get paid. The violation is also reported to USDA or FDA and for meat residues there is a residue violator list posted on the internet. Depending upon the number of violations and the antibiotics identified, producers could lose their ability to sell milk or cows for beef.

During 2009, over 99.9 percent of all milk tanker trucks tested negative for antibiotics. On the meat side, the results aren't perfect either. The total number of animals slaughtered was not reported by FSIS (Food Safety Inspection Service), but over half of the cattle that were found in violation during one week in 2010 were dairy cows. In addition, veal calves represented over a third of all animals on the positive residue list that week.

Milking center workers play a key role in reducing the risk of residues. By reading and following directions whenever they treat an animal, recording the treatment, marking the cow, and following both meat and milk withdrawal times, residues can be prevented and the potential for resistance can be minimized.

The final goal addressed for parlor workers is to ensure biosecurity on the farm to protect the herd, themselves and their family from disease.

Summary

These three educational modules can serve as an introduction to biosecurity, the basic physical exam, and defending the food supply in the parlor. Each producer will need to supplement the educational program with additional information customized to their own operation. Providing training for employees creates another layer of security for our agriculture products.

Western Dairy News is published as a service to people interested in the health and welfare of the Western dairy industry. Archives of this publication may be found at:
<http://animalscience-extension.tamu.edu/dairy/wdn.html>

For further information contact:
 Dr. Ragan Adams, Editor
 ILM, CSU-VTH
 300 W. Drake Road
 Fort Collins, CO 80523
 970-297-0371
 radams@lamar.colostate.edu

Material published in Western Dairy News is not subject to copyright. Permission is therefore granted to reproduce articles, although acknowledgement of the source is requested.

Cooperative Extension programs are available to all without discrimination.