University of California Cooperative Extension





San Bernardino County

SOUTHERN CALIFORNIA DAIRY TALK

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777 East Rialto Avenue Website: http://cesanbernardino.ucdavis.edu

San Bernardino, Ca. 92415 E-mail: ngpeterson.ucdavis.edu

Phone: (909) 387-2171 Fax: (909) 387-3306

**Protect your Heard From Johne's Disease**

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Johne's Disease is a disease that is hard to deal with because it is a disease which progresses very slowly and only has visible symptoms, diarrhea and weight loss, as a part of the terminal portions of the disease just prior to death. Animals generally become infected shortly after birth, but the visible signs do not appear for 3-5 years following the initial infection. During this time, the Johne's bacteria invade the cells lining the small intestine. In response to this invasion, the cells mount an immune response to attack the bacteria. The result is that the intestine cell lining becomes thicken and no longer able to efficiently absorb essential nutrients from the gut into the body. In this stage of the disease, the animal has a good appetite but continues to become skinny because it can't absorb the nutrients it is eating.

A second big challenge is with diagnostics. Like most bacterial diseases, it is possible to culture the bacteria and to do blood tests that indicate exposure to the bacteria. The appropriate sample for culture is feces or manure. As the disease progresses, the amount of Johne's bacteria shed in the feces increases and therefore the chances of finding the Johne's bacteria in the feces increases. The downside of culture is that it takes up to 15 weeks before the results are known. Under the typical California management systems, a dairyman is bringing 2 year old heifer replacements into the herd. Many of these calves have been to a calf ranch at some point in their lives. If infected, these 2 year olds many be shedding so few bacteria in their feces that they can not be detected by culture. However, as the clinical signs of diarrhea begin to appear, it is very ease to detect by culture as the amount shed is very high.

Johne's Disease is a difficult disease to control, however, many of the management strategies which dairymen should use to control other bacterial and viral diseases can be used to reduce the economic impact of Johne's Disease. Infected animal can be detected, however, it is important to keep the limitations of each diagnostic test in mind so that the results of testing can be optimized. To learn more about Johne's Disease, there is an online course that can be accessed at <http://vetmedce.org/index.pl?id=110337> There is an English and Spanish module available and for dairy producers they may even pay you a hundred dollars or so, if you’re willing to take a pre and post test and be available for a phone call to see how you felt about the training.

**Beginning To Control Johne's Disease In Your Dairy Herd**

John Kirk, DVM, MPVM

Extension Veterinarian, School of Veterinary Medicine  
University of California Davis, Tulare, CA.

As you begin to think about Johne's Disease in your dairy herd, keep in mind that this disease can be prevented and controlled by understanding how it is spread and how it affects cows. Half-heart attempts at control will generally fail, so begin with a total commitment of energy and time. First and foremost, Johne's is a bacterial disease that is spread from infected cows to other cows and young calves in the manure. Additional spread can take place through the colostrum or milk. So you must start by thinking about spread through the manure.

Reduce spread of Johne's bacteria in manure

Step 1: Reduce the exposure of newborn calves to manure that may contain the bacteria.

* Calve in a clean dry maternity area. If you are wondering whether it is clean and dry enough, kneel down in the bedding. If your knee comes up wet and covered with manure, the maternity pen needs some work. Frequent cleaning and replacement of bedding is the key.
* Remove the newborn calf from the dam before it has a chance to nurse or even attempt to nurse. Don’t let the calf ingest milk from a manure-covered teat or from other parts of the dam. Ingesting manure greatly increases the risk of Johne's transfer.
* Avoid keeping older cows with diarrhea and weight loss in common maternity pens, as they are the high-risk cows for shedding the Johne's bacteria. Manure from cows with Johne's contains zillions of infective bacteria.
* Have a separate maternity pen and another hospital pen to reduce exposure to newborn calves.

 Step 2: Provide clean feed for young stock and mature animals.

* Do not feed potentially contaminated feed from adult cows, including refused feed, to young stock. The risk of infection is greatest in the youngest animals meaning that a smaller dose of Johne's bacteria will infect a young calf compared to a yearling.
* Use separate equipment to handle feed and manure. The same tractor should not be used to scrap a cow alley and then be used to push up feed. Manure is the source of infection.
* Reduce to a minimum the crossing of cow alleys and feed alley with vehicles. Again, moving manure from one place to another is the same as moving the Johne's bacteria from one place to another.
* Keep adult cows and young stock in separate pastures. Provide separate sources of feed and water.

 Step 3: Provide clean water for young and mature animals.

* Supply clean water to all animals.
* Use trough and individual Waterers.
* Restrict run-off from pens or corrals particularly run-offs from adult animals that may enter locations where young stock is housed.

 Step 4: Keep manure from mature stock from contacting the young stock.

* Raise young stock in separate areas from older animals to prevent exposure of young animals to the potential of Johne's bacteria in the old stock manure.
* Prevent manure run-off from mature animals from reaching the young stock. Remember manure and water both run downhill, so put the young stock uphill from the older animals.

The next area for consideration is the spread of Johne's Disease through the colostrum and milk. By following these steps, you will also be reducing the risk of several other calf-hood diseases.

Reduce spread of Johne's bacteria by colostrum and milk management.

Step 1: Feed "low risk" colostrum.

* Use only colostrum from healthy cows that were negative on a recent Johne's test.
* Give the calf only colostrum from its dam…. no pooling. Pooling will increase the chances of infecting many calves from a single infected dam.
* Save colostrum from "low risk" cows by freezing or refrigerating.
* Consider using colostrum supplements particularly if your herd is highly infected.

 Step 2: Feed "low risk" milk.

* Feed a milk replacer instead of unknown status milk.
* Pasteurize milk or use milk from only cows with recent negative Johne's test.
* Thoroughly clean the udder and teats before collection of milk for calf feeding.

The final area of consideration is the management of infected cows to reduce the chances of spreading infection to other herd-mates and young stock. Again, many of these suggestions should be included in any herd biosecurity program.

Reduce infections by management of infected cows.

Step 1: Identify and remove clinical and late stage animals as soon as possible.

* Watch for and confirm the diagnosis of Johne's-suspects early.
* Test-positive cows should be culled or at the very least segregated from the maternity areas and young stock.
* Colostrum from test-positive cows should not be fed to any calves.
* Calves born to test-positive cows are at higher risk for Johne's disease so consideration should be given to selling them rather than keeping them for herd replacements.

 Step 2: Test to manage subclinical infections and define your herd status.

* Test a portion of the herd to determine the herd status. Testing as few as 30 adult cows can give an accurate prediction of the level of herd infection.
* Cull, segregate or manage the test-positive animals to reduce exposure to other animals in the herd, particularly the young stock.
* Develop a plan with your veterinarian for testing of adult cows on a regular basis.

 Step 3: Be aware of the risk when adding new animals to the herd.

* Ask your veterinarian about the risk from adding cows with Johne's, salmonella, Strep ag, Staph aureus, BVD, mycoplasmas and hair heel warts.
* Consider pre-testing animals before bringing them into your herd.
* Isolate all newly arrived animals before mixing them with your herd. Delay mixing until you have tested for high-risk diseases such as Johne's.

This may seem like an overwhelming list of things to do just to control Johne's Disease. By working with your veterinarian, you can break the list down to parts that can be managed. Over time you can develop a plan that will greatly reduce the risk of Johne's Disease in your herd. Ask your veterinarian to start working on a plan today.

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Nyles G. Peterson

Dairy Advisor