

Colorado Dairy News

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Johne's Disease at a Crossroad

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Why is there so much fuss about Johne's disease in dairy cows? In the last six years the State of Colorado, as well as most of the other states in this country have developed voluntary bovine Johne's disease control programs modeled after the national program standards. Several commercial companies have developed and marketed tests for rapid identification of infected animals. In 2003 the federal government allocated more than \$20 million to support efforts to control this disease.

About 22% of U.S. dairies have JD infection in 10% or more of their cattle, according to the 1996 NAHMS Dairy survey. The NAHMS study also estimated about a \$220 annual loss of production per cow in the herd when infection rates were that high. Cattle with JD lose weight and develop diarrhea. Their production declines and affected cows will ultimately die from the disease, but they are usually culled prior to death. Decreasing the economic losses associated with JD can improve a dairy's bottom line, but there are many other health problems such as infertility, lameness, mastitis, and calf death that can cost producers as much or more in losses. So why has Johne's disease caught so much attention that it warrants federal spending to assist in its control?

The answer, of course, is that there is ongoing concern that the infectious agent that causes JD in cows (*Mycobacterium avium paratuberculosis*, MAP) may also be part of the cause of a human disease called Crohn's disease. Infections that occur in both humans and animals are called zoonoses. The possibility that JD is a zoonotic disease like TB or brucellosis is a major concern.

Whether Crohn's disease is caused by infection with MAP is an extremely important question that needs to be determined by the human medical community. However, that determination will also have profound effects on the approach to dealing with Johne's disease in livestock. As depicted in the figure below, if Johne's disease is considered to be an animal disease without public health impacts, then control programs will logically follow the course currently being undertaken. Specifically, such control programs are based on the economic importance of the disease to producers, and include voluntary program participation with limited public subsidies. The target of such control efforts would be keeping JD occurrence low enough to minimize its impact on productivity. On the other hand, if the disease is believed to be zoonotic, then aggressive control programs with mandatory testing and substantial public subsidies would be highly likely. Designation as a zoonotic disease would put this animal health problem in the same league as TB, brucellosis, West Nile disease, rabies, or anthrax.

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Vesicular Stomatitis Outbreak in Texas and New Mexico

Vesicular stomatitis (VS), a disease with international implications for animal movement because symptoms mimic those of foot and mouth disease, was confirmed May 19 in three horses in western Texas. On June 4th VS was confirmed in horses on one premise in Carlsbad, New Mexico.

Horses, cattle, pigs, and occasionally sheep, goats, and deer are affected by VS, which causes blisters to form in the animal's mouth, on teats, or along the coronary band of hooves. These blisters result in excessive salivation, lameness, or oozing sores.

Prior livestock VS outbreaks occurred in 1995 (365 ranches infected in New Mexico, Colorado, Arizona, Utah, and Texas), and May 1997 (in Arizona, which eventually led to the infection of 380 ranches in Arizona, Colorado, New Mexico and Utah).

More information on VS may be found in the archives of the Colorado Dairy News on the web at <http://www.combs.colostate.edu/ilm/outreach/cdn/>. Updates on the progression of this outbreak are posted on the web at <http://www.aphis.usda.gov/lpa/issues/vs/vs.html>.

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***Important Dates:
Mark Your Calendar***

June 29, 30, July 01, 2004: Colorado Livestock Convention at Vail, CO Contact: CLA Office @ (970) 378-0500

July 26 – 30, 2004: American Dairy Sciences Association Annual Meeting at St Louis, MO Contact: William Wailes @ w.wailes@colostate.edu

August 18 & 19, 2004: Dairying In Colorado Seminar & Tour Contact: Jennifer Yamada @ (970) 535-9318

August 26 – 28, 2004: Colorado State Fair, Pueblo CO Dairy Show Contact: William Wailes @ w.wailes@colostate.edu



***Integrated
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A Message From Your Extension Dairy Specialist.....

These record-breaking prices won't last forever. Utilize your extra cash wisely, and invest in good basic animal husbandry practices. Long-term investment in the health of your herd is an investment that will pay dividends far into the future. Potential management areas in which to reinvest money to improve cow health include:

Cow Comfort: Have you looked at all aspects of cow (milking & dry) comfort? Free-stalls, bedding materials and surfaces, heat-abatement, water tank capacities, shading area capacities and proper husbandry of the special needs facilities are all critically important.

Diagnostic Problems: Controlling death loss is mandatory. Working closely with your herd veterinarian. Always diagnose the reason animals die and relate this to your management training. Teaching employees on-farm necropsy techniques will improve your understanding of nagging diagnostic problems.

Dry Cows: Have you considered the latest research in dry cow mammary health? Are there opportunities to use sealant products cost effectively? Do your dry cows have the heat-abatement necessary to avoid heat stress? Is your nutrition program meeting all the specs the nutritionist is requiring?

Milk Quality: Do you believe the U.S. should adopt a 400,000 somatic cell count standard to replace the 750,000 standard currently in place? The results of this survey question was – 69.9% Yes and 34.1% No.

Beat the heat,

William R. Wailes, Colorado Extension Dairy Specialist

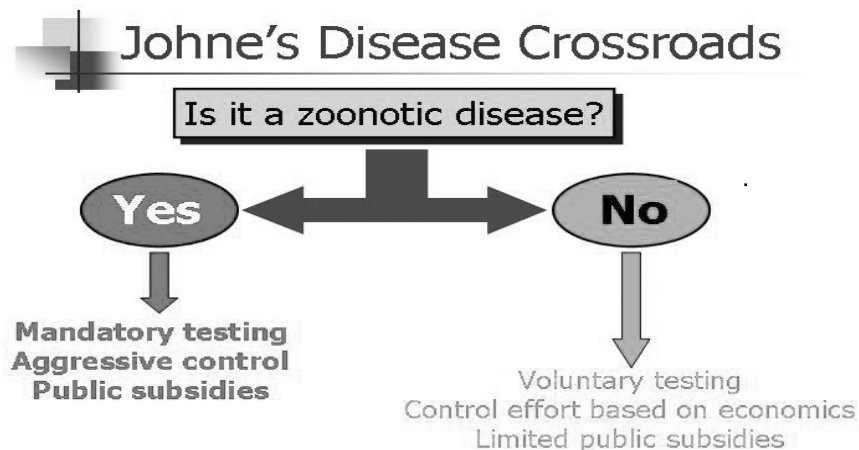
Commodity Price Quotes

By-Product Feeds	Price/Ton Spot Loads	Summer	Price/Ton OND¹/Clock²
Hominy	\$126.00	\$126.00	\$125.00 ²
Corn Gluten Feed	\$108.00	NQ	NQ
Bakery	\$128.00	NQ	NQ
WCS	\$220.00	\$225.00	\$185.00 ¹ /\$193.00 ²
Tallow	\$0.22/lb	NQ	NQ
CSM	\$220.00	NQ	NQ
SBM - 48%	\$285.00	NQ	NQ
DDG	\$153.00	\$150.00	\$135.00 ²
Flakes	\$142.00	NQ	NQ
Corn	\$128.00	NQ	NQ
Canola	\$199.00	NQ	NQ
Pork - Meat & Bone	\$310.00	NQ	NQ
Wheat Middlings	\$96.00	\$105.00	NQ
Soy Hulls	\$106.00	NQ	NQ

These price quotes are delivery at Greeley, Co

(Crossroad, continued from page 1)

Figure One: The approach to control of Bovine Johne's Disease will vary depending on whether or not it is considered a zoonotic disease.



There is a good deal of scientific evidence supporting the possibility that MAP is indeed a zoonotic infectious agent. Whether this evidence is sufficient to conclusively say that MAP is part of the cause of Crohn's disease is the pertinent question. Some of the key evidence is listed below:

1. The majority of studies that used appropriate techniques have detected MAP genes and even grown MAP bacteria from patient tissues.
2. A statistically significant number of Crohn's patients test positive for serum antibody to MAP.
3. MAP has been shown to be capable of infecting a wide range of animals including primates.
4. MAP is guilty by association: all mycobacterial pathogens are zoonotic (examples include the causes of TB in humans, TB in cattle, TB in birds, and leprosy).
5. Antibiotic treatments directed against MAP can cure Crohn's disease in a high proportion of patients. however, these studies are limited in number.

The National Academy of Sciences recently convened a committee to review information on Johne's disease, and included an assessment of the link between JD and Crohn's disease. The report can be read online at the National Academy Press website, www.nap.edu by doing a title search on Johne's disease. The committee asked the question "What data would it take to convince us that such a link exists?" The committee concluded that Crohn's disease is a complex problem without a simple cause, and that there was insufficient evidence to prove or disprove that MAP is a cause of Crohn's disease in humans. However, a causal link between MAP and Crohn's is a plausible hypothesis that warrants further research.

There are indeed a growing number of research reports that point to an infectious agent as one of the contributors to Crohn's disease. Additionally, the most common infectious agent toward which these studies point is MAP. There are also numerous studies that fail to identify a causal role for MAP. Such conflicting results are expected if a disease problem has a complex, multifactorial cause. Therefore, it is unlikely that

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Dr Mike Collins Speaks to Producers and Veterinarians in Colorado



In May a conference was held for veterinarians and livestock producers as an educational component of the Colorado Bovine Johne's Disease Control program. The purpose of the meeting coordinated by Dr. Ron Ackerman, the Colorado Designated Johne's Coordinator, was to discuss and promote the use of on-farm risk assessment and management planning as the principle step in JD control program implementation

Dr. Mike Collins, a professor of veterinary microbiology at the University of Wisconsin-Madison School of Veterinary Medicine was the invited speaker. Dr Collins is a world renowned Johne's Disease expert and part of the National Johne's Working Group. He is the co-author of the website <<http://www.johnes.org/index.shtml>>. The first topic on his agenda was a discussion of the similarities between Crohn's disease and Johne's disease, and the information that supports a link between the two. Dr. Collins is concerned about this issue and the repercussions to the dairy industry if the conviction grows that these diseases are associated, based on valid scientific research, or even based on consumer perception.

United States Animal Identification Work Plan

(Crossroads, continued from page 3)

While the need for national animal identification in the United States is fueled by fear and furor when a zoonotic threat appears, it is a massive undertaking to actually develop a system. The development of a successful national plan must overcome three large challenges :

All species producers must be in agreement. The needs of a pig producer handling many lots of piglets vary from that of a producer buying and selling dairy cattle; yet, the organizers want to develop a plan that satisfies all animal industries.

Someone must foot the bill. Industries want the government to pay since this is a government-mandated program. Any program will be expensive. USDA has allocated 18 million dollars for 2004 and 33 million dollars for 2005 but the program realistically will cost 750 million dollars to implement.

Confidentiality must be assured. Dairy producers are familiar with government accessible data bases but this is not so for all producers. Some fear unforeseen consequences if premise and animal identification information is accessed by unfriendly interest groups. The location of the database and the rules governing accessibility have not yet been resolved.

The goal of the cattle program is to be able to trace the movement of an individual between each premise from the time it enters commerce. The target is to have this information available within 48 hours of request. The cattle industry favors radio frequency identification tags but the overall plan will remain "technologically neutral" which means that each species group will decide upon their preferred means of identification. The plan will be phased into operation in three stages.

Phase I - Premise ID. All premises that manage and/or hold cattle are to be identified through the state premises system to achieve a national premises system. Premise identification is a prerequisite to individual animal identification, and thus, must be initiated to meet the requirements of the US Animal Identification Number System.

Phase II - Individual Animal ID for Cattle moved for Commerce. The primary timetable requirements established in Phase II for cattle are:

All cattle that enter interstate commerce are to be officially identified and their movement is to be reported to the National Animal Identification Database through the electronic Interstate Certificate of Veterinary Inspection (ICVI). Target: July 2005.

All cattle that enter commerce (intrastate and interstate) must be identified with an official RFID tag prior to leaving their current premises and such movements are reported to the National Animal Identification Database. Target: July 2006

Exception to the requirement includes:

- fed cattle moving from a feedlot direct to a slaughter plant
- cattle moving from their premise of birth direct to slaughter
- cattle moving to another premise when they remain under the same person's control (ownership) and when they are not co-mingled with cattle from other premises.

Phase III

The integration of RFID readers will be initiated as cattle volumes with RFID tags warrant. The system capabilities are to be available July 2004 with significant integration by July 2005. USDA inspected cattle slaughter plants and state licensed markets are to have RFID readers in place by July 2005.

The information is summarized ifrom that available on the web at <<http://usaip.info/bovineplan.htm>>.

there will be flawless scientific proof of cause and effect, and a determination will rely on the collective judgment of medical investigators. Until a convincing argument is made one way or the other, the issue will remain controversial. However, if sufficient public concern develops, then the safety of dairy products, cull cow meat, and water supplies potentially contaminated with animal feces will become important issues. Two recent articles by Patrick Perry in the Saturday Evening Post (March/April and May/June, 2004) are good examples of the type of lay press publications that can lead consumers to draw conclusions about the cause of Crohn's that specifically suggest dangers associated with dairy products. This concern may have negative repercussions regardless of the judgement pronounced by medical experts.

Although there is no firm consensus yet about the relationship between MAP and Crohn's, there is no question that this debate is gathering substantial attention. Clearly this is an important question for the dairy industry and many public policy decisions hang in the balance. If MAP is ultimately considered to be a human disease agent, then the occurrence of JD in cows will surely be considered an important risk to human health. The dairy industry is at a crossroad on this issue. Producers and veterinarians can choose to act now to minimize the occurrence of this infection, and the developing state programs can help focus these efforts. Alternatively, we can wait until someone defines an answer, and then see if public pressure or government regulations mandate the effort.

For more information on Johne's Disease in general and the Colorado Voluntary Control Program, please visit the archives of the Colorado Dairy News posted on the web at <www.cvmb.edu/ilm.cdn>