For more information on the Program, including a copy of the Colorado Voluntary Bovine Johne's Disease Control Program Manual which contains the complete rules, please contact the:

Colorado Division of Animal Industry
State Veterinarian's Office
700 Kipling Street, Suite 400
Lakewood, CO 80215-8000
Phone (303) 239-4161 Fax (303) 239-4164

Website Resources:

Colorado Division of Animal Industry
http://www.ag.state.co.us/animals/animals.html

Integrated Livestock Management
http://www.cvmbs.colostate.edu/ilm/ilmintro.html

Colorado Veterinary Medical Association
http://www.colovma.com/

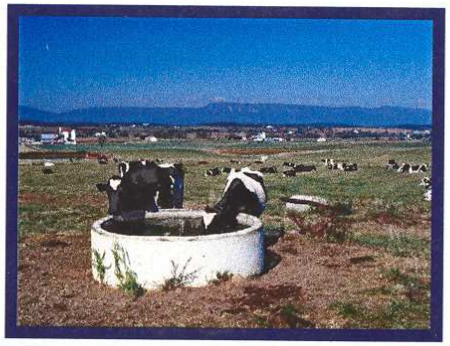
USDA, APHIS NAHMS
http://www.aphis.usda.gov/vs/ceah/cahm/

Johne's Information Center
http://www.johnes.org/

National Johne's Working Group
http://www.usaha.org/njwg.html

USDA, APHIS Veterinary Services
http://www.aphis.usda.gov/vs/nahps/johnes/

Colorado Voluntary Bovine Johne's Disease Control Program



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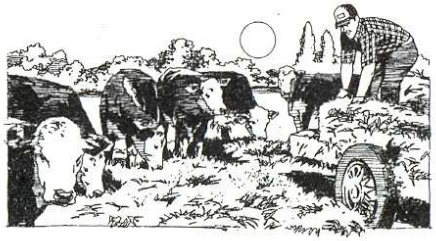
POST-WEANED CALVES & BRED HEIFERS

Management objectives: Prevent exposure to infective animals and manure and prevent contamination of feed, water and pastures.

Ideally:



- House young stock in a separate facility; do not co-mingle young stock with mature animals.
- Do not allow contact with cows' manure; prevent water drainage from cow areas to young stock areas; do not use common feedbunks or waterers for cows and young stock; use separate equipment for feed and for care; design and [illegible]

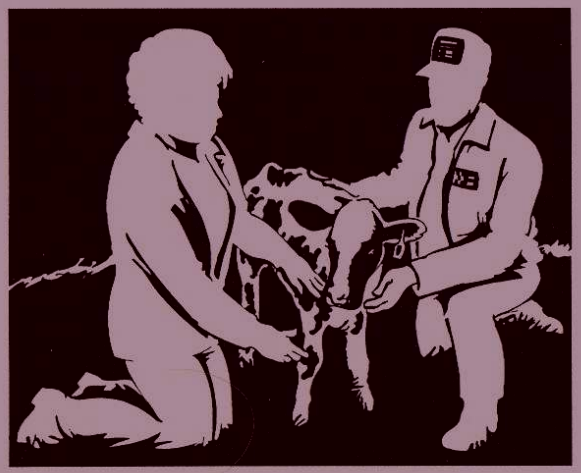
INTRODUCTION

Johne's Disease (JD) is quickly coming to the forefront as an important disease of cattle and with good reason. In the dairy industry, JD is estimated to cost US producers $1.5 billion annually due to reduced milk production, reduced body weight of cull animals and increased culling. The National Animal Health Monitoring System's 1996 dairy study estimated a cost of $227 per head in herds that had at least 10% of the animals infected with JD.

In order to determine if your operation is losing money from JD

The main objective of the Colorado Johne's Disease Control Program is to educate livestock producers about JD and give them the tools to prevent, control and even eliminate the disease from a livestock operation.

Participation in the Program is completely voluntary and the confidentiality of test results will be maintained within the limits of Colorado law. The veterinarian can submit samples under his/her name to maintain herd anonymity.



THE FOLLOWING MANAGEMENT PRACTICES SHOULD BE USED TO IMPROVE HERD HEALTH AND SPECIFICALLY TO DECREASE SPREAD OF JOHNE'S DISEASE

CALVING AREA

Management objective: Keep it clean and dry.

Ideally:

- For inside calving areas: Use area for calving only; use single-animal pens; assure adequate area; remove manure and bedding after each use; always provide adequate bedding.
- For outside calving areas: Use adequate space and monitor use to minimize mud and manure accumulation.
- Clip and clean udders before calving and remove calf immediately after birth.

PRE-WEANED CALVES

Management objective: Avoid feeding infective colostrum/milk and prevent contact with other infectious materials including adult cows and their manure.

Ideally:

- Use colostrum from known JD-test negative cows; feed 4 quarts of colostrum within 2 hours of birth; feed milk replacer or pasteurized milk rather than raw milk in JD herds.
- Prevent manure contamination of feed and water; house calves in a separate facility/location from cows, manure and traffic; minimize manure transfer from cows to calves (feed calves first, use separate equipment, clean boots, etc.).

[illegible]

[illegible] and is a pathogen or Paratuberculosis, [illegible] that affects many domestic species.

[illegible] Cause?

[illegible] Mycobacterium avium, subspecies paratuberculosis, also called MAP. The bacteria can be found in cattle, sheep, goats, and other ruminants, as well as other domestic animals and wildlife species. It is most commonly found in the intestines of infected animals and is shed in their feces, which can lead to the contamination of the environment and the spread of the disease to other animals.

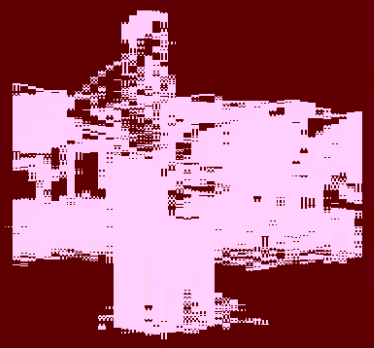
[illegible] Animals Are Most Susceptible to Becoming Infected with Johne's?

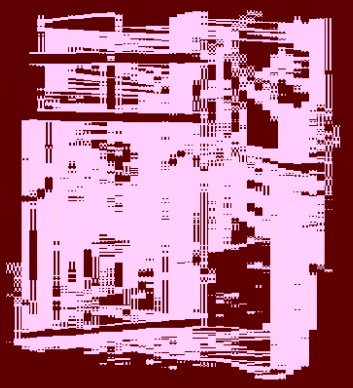
[illegible] young animals, such as calves, are more susceptible to the disease than adult animals, and the risk of infection and clinical symptoms increases with age. Infected animals can shed the bacteria in their feces, which can lead to the contamination of water sources, bedding, and other surfaces. Infected animals can also shed the bacteria in their milk, which can contaminate milk and dairy products if not properly pasteurized.

Prevention and control of Johne's Disease can be challenging and time-consuming. Once the bacterial pathogen is introduced into a herd, it can persist for many years, even decades, and can be difficult to eradicate. A typical herd-control program may take five years or longer. A faster period is possible, but may be more expensive. It is always less expensive to prevent Johne's infection than to try to control it.

Most herds have adopted a phased ID based approach or other herd addition. To reduce the possibility in your herd:

- Close the herd to animals with an unknown Johne's infection status.
- Source replacement additions from herds that are at low risk for ID.





Johne's Disease, also called paratuberculosis, is a chronic, incurable disease that affects ruminant animals, such as cattle, sheep, goats, and deer. The disease is caused by the bacterium Mycobacterium avium subspecies paratuberculosis (MAP), which can be found in feces and other bodily fluids of infected animals. The bacteria can be shed in the environment and can be ingested by other animals through contaminated feed, water, or bedding. The disease can also be transmitted from infected animals to their offspring through milk and other bodily fluids. The disease can be difficult to diagnose and control, and there is no cure or vaccine for it. The disease can have significant economic impacts on the affected herd or flock, including reduced milk production, decreased fertility, and increased mortality rates. It can also cause serious health problems in the affected animals, such as diarrhea, weight loss, and weakness. The disease can be spread to humans through the consumption of contaminated milk or other dairy products, and there is some evidence that it may be associated with certain human diseases, such as Crohn's disease and multiple sclerosis. The disease can be difficult to control and prevent, and it may require a long-term commitment to testing, management, and biosecurity measures to minimize the risk of infection and spread.

What causes Johne's Disease?

ID is caused by the bacterium Mycobacterium avium subspecies paratuberculosis (MAP), which can be found in feces and other bodily fluids of infected animals, such as cattle, sheep, goats, and deer. The bacteria can be shed in the environment and can be ingested by other animals through contaminated feed, water, or bedding. The disease can also be transmitted from infected animals to their offspring through milk and other bodily fluids. The disease can be difficult to diagnose and control, and there is no cure or vaccine for it. The disease can have significant economic impacts on the affected herd or flock, including reduced milk production, decreased fertility, and increased mortality rates. It can also cause serious health problems in the affected animals, such as diarrhea, weight loss, and weakness. The disease can be spread to humans through the consumption of contaminated milk or other dairy products, and there is some evidence that it may be associated with certain human diseases, such as Crohn's disease and multiple sclerosis. The disease can be difficult to control and prevent, and it may require a long-term commitment to testing, management, and biosecurity measures to minimize the risk of infection and spread.

How does an animal b[illegible]

[illegible] of MAP via contaminated feces is the most common method of transmission within the herd. Infected animals can shed large amounts of bacteria in their feces, and other animals can ingest the bacteria by consuming contaminated feed, water, or bedding. The bacteria can also be shed in the milk of infected animals, and calves can be born with the bacteria in their bodies if their mothers are infected. The bacteria can also be transmitted through other bodily fluids, such as saliva and urine, and it can be spread to humans through the consumption of contaminated milk or other dairy products. The bacteria can also be transmitted through the air, but this is less common. The bacteria can survive in the environment for long periods of time, and it can be difficult to eradicate once it has been established in a herd. The bacteria can also be spread to other animals through the use of contaminated equipment or vehicles, and it can be spread to humans through the consumption of contaminated milk or other dairy products.

FREQUENTLY ASKED QUESTIONS

What are the clinical signs of Johne's?

The clinical signs of JD are unresponsive diarrhea and weight loss while still maintaining a normal appetite. Clinical signs usually aren't apparent until after two years of age, but may not appear for many years depending on the extent of the infection and the stress level of the animal. Many infected animals are probably culled for low production from Johne's long before they show the typical clinical signs.

What can I do to prevent and control JD?

Controlling and preventing JD requires education, refinement of management procedures, and herd testing/culling of infected animals. Each herd should develop an individualized plan depending on their [illegible]

What happens if a number of animals test positive?

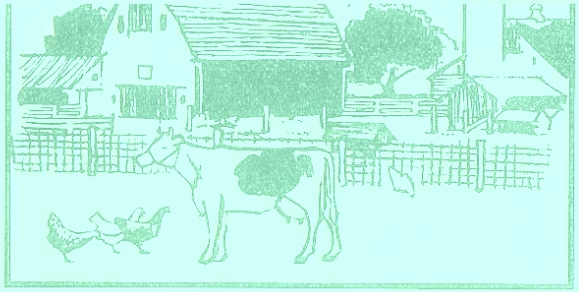
Test-Positive herds may elect to enter the Preventive Management Program. Based on herd prevalence, the herd is assigned a score of A or D. Subsequent testing can improve the score and herds testing negative at later dates can enter the Herd Status level if all cows are negative.

Can Johne's vaccinated animals be tested for Johne's Disease?

Vaccinated animals should only be tested by an official organism detection test (fecal culture, biopsy). The blood ELISA test gives unreliable results on vaccinated cattle.

How do I maintain or improve my herd status?

Herd Status Levels must be renewed within 14 months of the [illegible]



What types of test can be used for Johne's testing?

The two main types of tests used are the ELISA blood test, which is a screening test and the fecal culture, which is considered an official test. Animals that test positive with the ELISA should be confirmed positive with the fecal culture. Fecal culture animals are considered infected and should be managed to eliminate exposure to other animals, or be culled. Federal regulations restrict interstate (between states) movement of fecal culture positive cattle except for slaughter.

What animals should be tested for Johne's Disease?

Animals eligible for testing within the Program are cows greater than 3 years of age (>1st lactation) and bulls over 2 years of age. A total of 30 animals are tested with the ELISA blood test on the initial herd screening. If your herd has less than 30 animals in

, you must include enough animals in their
fy the minimum of 30 test animals, or your
Samples must be submitted to an approved NVSL
tate University's Diagnostic Laboratory and the
Regional Animal Health Laboratory are approved

if all animals test negative?

erds can enter the Herd Status Program – Standard
sting moves these herds (assuming they maintain a
d) from a Status 1 to a Status 4. Status 4 herds
four times in three years without any positive
ecific testing requirements, please consult the
.

COLORADO VOLUNTARY BOVINE JOHNE'S DISEASE CONTROL PROGRAM

What is the Colorado Voluntary Bovine Johne's Control Program?

The Colorado Johne's Advisory Committee was formed in 1998 to address the problem of JD in the Colorado livestock industry. Members of the livestock community consulted with university and state officials for assistance in developing the Program. After three years of development, the committee finalized plans for the Voluntary Bovine Johne's Disease Control Program in Colorado. The Program was modeled after the recommendations of the National Johne's Working Group, which is comprised of Johne's Disease experts from around the country. ***The unique aspect of the Program is that it is completely voluntary, a producer can complete as much or as little of the Program as they desire.***

What are the advantages of the Program?

As a producer, the Program will educate you about JD and give management recommendations for your herd. There are also economic benefits to having a Johne's test negative herd, decreasing the prevalence of the disease in your herd, and preventing the introduction of the disease into your herd.

What are the disadvantages if I choose not to participate?

The only disadvantage is that you are not taking a proactive approach to the disease in your herd. Many herds don't have JD, but can acquire it through purchase of herd replacements. You can decrease the chance of purchasing Johne's infected cattle by becoming more informed and implementing management procedures to reduce the risk.

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Who oversees the Program?

An appointed state animal health official will be the Designated Johne's Coordinator (DJC). This person is responsible for the training of Certified Johne's Veterinarians (CJV) who will work directly with your herd. The DJC and CJV have additional training in JD epidemiology and development of herd management plans.

What does the Program entail?

The Program consists of three components: **Education, Management** and **Testing**. Many Colorado dairy producers have already started the education portion of the Program through seminars and reading articles on JD. **Education** about the disease allows producers to understand the reasoning behind the detailed management recommendations given in the second component. The **management** component uses specific farm characteristics in making control and prevention recommendations. Some producers will want to become involved in the third aspect of the Program which is **testing** cows for JD. Testing is not required to participate in the Program, and producers can still test animals "outside" of the Program while involved in the other two aspects.

Again, the program is voluntary and producers can participate in as much or none of the Program if they desire.

1. EDUCATION

The first component and foundation of the Program involves education about JD. This serves as the entry level for producer participation into the Program. Education can take place through group workshops or through one-on-one sessions with a Certified Johne's Veterinarian.

2. MANAGEMENT

Producers who have completed the Education component may wish to participate in the management component. Performing a JD risk assessment and designing an overall herd plan are two important aspects of the management component. A risk assessment identifies management factors associated with an increased risk of spreading the disease. The CJV will help producers develop a herd management plan based on the risk assessment. In addition to the herd specific portion of the management plan, minimum biosecurity measures are part of the overall plan. Producers can incorporate these measures into their management practices and overall herd plan. **The management plan is the most important aspect of Johne's Disease control and prevention.**

3. HERD TESTING AND CLASSIFICATION

The third element of the program is designed to identify herds that are test-positive and test-negative, based on the results of animal testing. Herds will continue to undergo risk assessments and fine-tuning of the management plan during testing. After initial testing, herds may elect to participate in either the test-positive or test-negative component depending on the presence or absence of test positive animals.

What if I don't want to test my herd?

The Program does not require testing to participate. The Program is structured so every dairy producer can participate without testing. The education and management components are important aspects that should involve all dairy producers. Testing of animals "outside" the Program allows producers to continue to monitor and control the disease without being classified as a "High Risk" farm. Testing samples outside the Program may also be submitted under your veterinarians' name to protect herd identity.

JOHNE'S DISEASE RISK ASSESSMENT

Risk Area	Scoring Guide	Definitions	Your Score
CALVING AREA 1. Is the calving area used for more than one cow? 2. Are calves born in areas that hold cows? 3. Do newborn calves stay with their dams after they are born? 4. Are calves allowed to nurse cows?	0 = Never 3 = Rarely 5 = Occasionally 7 = Frequently 10 = Always	**Rarely** = Occurs less than one out of 10 calvings. **Occasionally** = Occurs one to three times out of 10 calvings. **Frequently** = Occurs five or more times per 10 calvings.	1._____ 2._____ 3._____ 4._____
5. Is the calving area also used to hold or treat sick cows? 6. Are Johne's clinical cows or cows suspected of having Johne's kept in the calving area?		**Rarely** = Occurs less than once per month. **Occasionally** = Occurs one to five times per month. **Frequently** = Occurs more than five times per month.	5._____ 6._____
7. Is there manure build-up in the calving area?	0 = None 3 = Minimal 5 = Moderate 7 = Considerable 10 = Extensive	**Minimal** = Manure from one animal is removed and the pen is cleaned before other animals use it. **Moderate** = The pen is cleaned weekly. **Considerable** = The pen is cleaned monthly. **Extensive** = The pen is cleaned less than once per month.	7._____
8. Are cows' udders soiled with manure?		**Minimal** = Teats are clean. Moderate amount of manure on udder. **Moderate** = Teats are clean. Moderate to heavy amount of manure on udder. **Considerable** = Small amount of manure on teats. Udder covered with manure. **Extensive** = Teats and udders caked with manure.	8._____
	CALVING AREA	**(MAXIMUM SCORE OF 80)** **TOTAL**	
PRE-WEANED CALVES 1. Do you feed pooled colostrums from multiple cows? 2. Do you feed pooled, unpasteurized waste milk?	0 = Never 3 = Rarely 5 = Occasionally 7 = Frequently 10 = Always	**Rarely** = One to two times per year. **Occasionally** = One to two times per month. **Frequently** = Most of the time.	1._____ 2._____
3. Do pre-weaned calves have direct contact with cows?		**Rarely** = Calves are penned separately, but get loose less than once per month. **Occasionally** = Calves are penned separately, but get loose more than once per month. **Frequently** = Calves are penned in the same building or area as cows; mixing occurs regularly.	3._____
4. Are pre-weaned calves housed near adult cows?		**Rarely** = Only when necessary and only for short periods of time. No manure runoff occurs. **Occasionally** = Calves are housed near adults where runoff is possible, but only for short periods of time. **Frequently** = Only for short periods of time, but not always.	4._____
5. Does manure from cows contaminate the milk, feed, water or housing area of pre-		**Rarely** = Trace amounts of manure visible. Waterers and feeders cleaned more than once per month. **Occasionally** = Manure is visible in waterers and feeders. This equipment cleaned less than once	5.
larly.		**Frequently** = Manure is visible. Waterers and feeders not cleaned reg	
TAL			
after ed	1._____		
nth. per	2._____		

	PRE-WEANED CALVES	(MAXIMUM OF 50) T
POST-WEANED HEIFERS 1. Is manure spread on pasture and grazed or harvested as hay in the same season and fed to heifers?	0 = Never 1 = Rarely 2 = Occasionally 3 = Frequently 5 = Always	**Rarely** = Only when no other option exists. **Occasionally** = Pasture is grazed or harvested between 0 and 2 months spreading. **Frequently** = Manure spread on pasture routinely and grazed or harve when forage is mature, regardless of time since spreading.
2. Do heifers have direct contact with cows or their manure?		**Rarely** = Heifers penned separately, but get loose less than once per m **Occasionally** = Heifers penned separately, but get loose more than onc month. **Frequently** = Heifers housed in same building or area as cows; mixing occurs regularly.