

Prevent the Spread of JD

The Basics of Prevention

The spread of Johne's Disease (JD) in herds should be minimized if the following points are recognized:

- The bacteria causing JD is mainly spread through manure.
- Calves are the most easily infected.
- Tests for JD do not accurately detect animals in the early stages of infection.
- Keeping the infection out of your herd is always cheaper than trying to control the disease once it is present. Eliminating JD from a herd takes a long-term commitment (at least 5 to maybe 10 years).
- Management changes implemented to decrease the risk of JD will also reduce the risk of other calf diseases and improve overall health.
- An infected cow can shed billions of organisms into the environment for years prior to showing any clinical signs of the disease.
- A small amount of manure is all it takes to infect a calf.
- Only a small percentage of infected cows in a herd will show clinical signs of the disease (signs of illness). The rest of the infected animals will appear healthy.
- Animal purchases must be very limited so that no new infected animals are introduced.

Recommended Best Management Practices

The overall objective of a JD management plan is to reduce the prevalence of JD on the farm by preventing exposure to infected animals and a contaminated environment. The following is a list of best management practices from a disease control perspective. These will not be possible or cost-effective on all farms—producers will benefit from implementing procedures based on risks identified on their individual farms.

Prevent JD from entering the herd:

- ✓ Maintain a closed herd: introduce genetics by the use of frozen semen.
- If it is necessary to purchase animals, you should:
- ✓ Know the history of the herd you are buying from:
 - Buyer beware applies to JD as not all herds are aware of their JD status.
 - Ask about history or suspicion of JD.

- ✓ Buy from herds that are part of the National Program:
 - Pick herds that have a health status the same or better than your herd.
 - Segregate and/or prevent contact with young animals.

Prevent the spread of JD to calves

Note: these management recommendations will also help to reduce the risk of calf scours due to rota- and coronavirus, E. coli, Salmonella, Cryptosporidia, Giardia and Campylobacter.

- ✓✓ Decrease the exposure of newborns to contaminated manure—keep the calving area clean and dry.
- ✓✓ Since calves are the most susceptible to JD infection, primary focus should be given to the calving period to prevent the transmission of infection to newborn calves:
 - Have one-way movement through calving pens: pre-calving, calving, mothering up and turn out.
- ✓✓ Do not house sick animals in the calving area, or use hospital pens for calving:
 - Have an adequate supply of clean, dry bedding.
- ✓✓ Remove manure and wet bedding from calving pens and maternity chutes after each use.
- ✓✓ Avoid overcrowding and manure build-up in calving areas.
 - ✓ Clean udders after assisted births if necessary.
- ✓✓ Ensure newborn calves receive high quality colostrum:
 - Do not use colostrum from cows or herds of uncertain JD status.
 - Not all commercial colostrum supplements are the same. Some Canadian products have been processed to reduce the risk of JD. Although more expensive, these products should be considered, particularly for potential replacement heifers.
- ✓ Consider moving the calving area to a clean location every 14 days.
- ✓ Remove manure from the calving area as soon as possible after the calving season ends.

Prevent the spread of JD among replacement animals

Note: many of these recommendations will also help ensure that the higher nutritional needs of growing replacement heifers are met.

Raise uninfected replacements:

- ✓✓ Do not keep replacement heifers from dams showing clinical signs of JD.
- ✓ Avoid exposure to infected animals and manure:
 - Separate weaned calves and yearlings from mature animals and from their manure.
 - Raise replacements in separate pastures and/or separate pens.
 - Avoid using common feeding and water sources when possible.
 - Pay attention to manure drainage through barns, corrals and yards.
- ✓ Prevent manure drainage from cows to weaned calves and yearlings.

- ✓✓ Fence off bogs and sloughs to prevent access to manure contaminated run-off.
- ✓ Minimize vehicle and people traffic to areas containing young animals.
- ✓ Do not allow weaned calves and yearlings to graze on pastures used by cows within the last year.
- ✓✓ If there are many infected animals, consider segregating the herd into infected and non-infected areas.
- ✓✓ Scrape pens as needed to remove cow manure.
 - ✓ Haul cattle in clean trailers.

Prevent contamination of feed and water with the JD bacteria (MAP)

Note: keeping cattle clean and providing access to clean water also improves performance.

- ✓✓ Use separate equipment for feeding and manure handling.
- ✓✓ Avoid feeding on the ground—use raised feed bunks and waterers.
- ✓✓ Prevent manure build-up around waterers.
 - ✓ Do not use common mangers/bunks for replacements and mature animals.
 - ✓ Do not walk through feed areas/mangers with dirty boots.
- ✓✓ Quickly remove and clean manure out of mangers and bunks.
- ✓✓ Keep animals out of mangers and bunks.
- ✓✓ Do not feed refused feed from cows to young-stock or replacement heifers.
- ✓✓ Do not allow young-stock or replacement heifers to graze a pasture the same season after manure application.

Prevent the spread of JD due to infected mature animals

- ✓✓ Eliminate high risk animals:
 - Separate and cull clinical animals immediately (do not sell to another producer unless they are told of reason for culling).
 - Thin, weak, late-stage cases should be humanely euthanized on-farm. They are unfit for transport and should not be loaded or hauled for any purpose.
 - Cull all offspring and test dams of confirmed cases.
- ✓ Use homegrown embryo transfer recipients—do not purchase embryo transfer recipients from unknown sources or auction barns.
- ✓ Avoid exposure to other JD susceptible species with unknown status (e.g., sheep, goats, farmed deer or wildlife).

Canadian Johne's Disease Initiative

Beef Cattle



Dairy Farmers
of Canada



Canada



Canadian Animal Health Coalition

Promoting a collaborative approach to animal health

What Is Johne's Disease?

Johne's Disease (JD) is a contagious, progressive bacterial infection that causes abnormal thickening of the lining of the intestine and restricts the absorption of nutrients. Clinical signs of animals infected with JD are long-lasting diarrhea and extreme weight loss despite maintaining some appetite. JD is caused by a bacterium (*Mycobacterium avium* subspecies *paratuberculosis*; MAP), a distant relative to the bacteria that cause tuberculosis.

Animals usually become infected with MAP as calves. No signs of disease are seen for years after infection and most infected cows never show signs. Infected animals may appear normal and spread the disease to other animals in the herd before showing signs themselves. During this time, infected animals may be sold, culled or die without owners being aware that these cows are infected.

How is it spread?

JD is spread through the contamination of udders, feed or water by manure from infected animals. Calves are the most susceptible to new infection, but adults may also be susceptible if there is exposure to high levels of MAP bacteria. While MAP does not multiply in the environment, it can survive in manure, water and pastures for up to one year or more, depending on conditions.

Calves may also be infected through colostrum and milk from infected cows. Occasionally calves can be born already infected. With increasing age, calves become resistant to infection and by about one year of age their resistance equals that of an adult. JD usually enters a herd through the purchase of an infected animal that sheds the bacteria in its manure.

Why should I be concerned?

JD can have a significant financial impact in a beef herd through reduced feed efficiency, difficulty maintaining body condition, increased or earlier culling, and reduced value of breeding stock sales. Management factors that contribute to JD may also be associated with an increased incidence of other calffood diseases (particularly scours).

There may be an association with milk and meat safety. JD may be linked with Crohn's Disease, an incurable, chronic, intestinal disorder in humans. If this link is proven, beef and milk may be viewed as a route of disease transmission to humans. The presence of JD in our herds will affect our ability to market cattle to countries that have Johne's related requirements on their Veterinary Health Certificates.

What Is the Canadian Johne's Disease Initiative?

The Canadian Johne's Disease Initiative (CJDI) was created to reduce the prevalence of Johne's Disease (JD) in Canadian herds. CJDI is a collaborative activity of industry, governments and veterinary schools, led by the Canadian Cattlemen's Association (CCA), Dairy Farmers of Canada (DFC) and the Canadian Animal Health Coalition (CAHC). The CJDI focuses on:

- Education and awareness—Develop and deliver coordinated educational information and communications about JD to farmers, veterinarians, government and other target audiences.
- Provincial coordination—Facilitate communications amongst provincial JD working groups, share JD awareness and extension messages, as well as recommend minimal program standards.
- Research—Scan international JD programs and research activities, as well as facilitate collaborations to enable priority Canadian research and cost-effective JD program delivery.

Initially the CJDI encourages provincial delivery of the Prevention Pathway of the JD program. Alberta, Ontario, Quebec, PEI, Nova Scotia and New Brunswick have initiated programs. Other provinces, including Manitoba, Saskatchewan, and British Columbia are assessing the proposed national approach and considering program options.

Prevention Pathway program on the farm

Many private veterinary practitioners have received training in the standard risk assessment approach to JD prevention. To initiate the JD Prevention Pathway on the farm, a trained veterinarian works with the herd owner to gather the herd's history related to JD. Then the veterinarian makes recommendations about the use of the risk assessment document to evaluate management practices related to the spread of MAP. Finally, the herd owner and the veterinarian develop a plan to implement cost effective Best Management Practices (BMPs) to minimize JD in the herd. Confidentiality of results is strictly maintained.

For more information, visit the CJDI page on the Canadian Animal Health Coalition website:

<http://www.animalhealth.ca/CJDI/>

Johne's Disease Risk Factors	
Risk Area	Reduced ↓ Increased ↑
General Operation Factors: If You...	
1 Often see scouring baby calves	↑
2 See suspect (thin, unable to regain body condition, chronic diarrhea) cows in your herd	↑
3 See suspect cows in neighbouring herds	↑
4 Have dairy or dairy-cross cattle from a high risk herd on your premises	↑
5 Cattle operation near a high risk dairy, beef or other livestock operation	↑
6 Spread manure from a high risk beef or dairy operation on your pasture	↑
7 Rent pasture from a high risk beef or dairy operation	↑
8 Clean your corrals regularly	↓
9 See wildlife on your operation	↑
Calving Area: If You...	
10 Keep sick cows in calving area	↑
11 Allow suspect JD cases in the calving area	↑
12 See cows with manure on their udders	↑
13 Calve in the cow wintering area	↑
14 Keep cow-calf pairs together with close-up cows	↑
15 Obtain raw colostrum directly from a farm	↑
16 Use commercial colostrum products that have <i>not</i> been processed to reduce JD risk	↑
17 Use commercial colostrum products that have been processed to reduce JD risk	↓
18 Calve on pasture	↓
19 Regularly clean manure from calving pens	↓
20 Keep the calving area clean, dry and well-bedded	↓
21 Minimize the stocking density in the calving area	↓
Pre-Weaning: If You...	
22 Spread manure at the start of (or during) the grazing season	↑
23 Regularly see feed or water contaminated with manure	↑
24 Regularly see manure contaminated udders	↑
25 Allow direct contact with suspect JD cases	↑
26 Have well-drained pastures	↓

Johne's Disease Risk Factors (cont'd)	
Risk Area	Reduced ↓ Increased ↑
Weaned Calves: If You...	
27 Regularly see feed or water contaminated with manure	↑
28 Use shared feed, water, pasture or corrals for weaned calves and cows	↑
29 Have manure contamination on your feeding equipment	↑
30 Keep calves in areas with stored manure or compost piles	↑
Bred Heifers and Young Bulls: If You...	
31 Keep replacements together with mature cattle	↑
32 Regularly see feed or water contaminated with manure	↑
33 Use shared feed, water or pasture for replacements and mature cattle	↑
34 Keep replacements in areas with stored manure or compost piles	↑
Adult Cows and Bulls: If You...	
35 Regularly see feed or water contaminated with manure	↑
36 Cull suspect adults and their offspring	↓
Herd Replacements in previous 12 months: If You...	
37 Retain home-raised replacements from suspect dams	↑
38 Obtain replacements from herds with unknown JD status	↑
39 Retain home-raised replacements only from non-suspect dams	↓
40 Obtain replacements from a closed or low risk herd	↓

Agriculture and Agri-Food Canada (AAFC) is pleased to participate in this project. AAFC is committed to working with industry partners to increase public awareness of the importance of the agriculture and agri-food industry to Canada. Opinions expressed in this document are those of the Canadian Animal Health Coalition and not necessarily those of AAFC.



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