Heartland
YOUR PARTNER IN PREVENTION, HEALTH AND PERFORMANCE

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Salmonella Dublin, what do you need to know?

In the last few weeks, many of you will have received results from Dairy Farmers of Ontario on your herd's risk level for various infectious diseases (including Bovine Leukosis Virus (BLV), Johne's and *Salmonella* Dublin). Over the years, you may have had discussions with your herd veterinarians about Johne's or BLV and prevention strategies. However, *Salmonella* Dublin may be something you have not heard much about.

What does it look like?

Salmonella is a bacteria that you have probably heard about when discussing calf scours. Although many types of *Salmonella* impact the intestines, *Salmonella* Dublin (*S.* Dublin) is different. It often presents in young calves, 2 weeks to 4-5 months old, as pneumonia cases that are not responding to treatment or die suddenly. This is because *S.* Dublin enters the bloodstream and attacks multiple organs, such as the lungs and the liver. The spread of these bacteria throughout the body can also cause a very high fever, and bloody scours. Calves that recover from an infection can also be impacted in their future stages of growth, as they are often poor-doers, and become animals that will struggle advancing in your herd.

The way this bacteria presents depends on many factors, including the level of Dublin in a herd, the animals' immune status and the environment (such as cleanliness). If everything is running well, calves may only be minimally impacted, while other herds could have a severe outbreak. In some farms, up to 50% of calves can die or become severely ill during an outbreak.

How do I get this on my farm?

Like many infectious diseases, *S.* Dublin is often introduced onto farms through bringing in new cattle that are carriers. Carriers are animals that recover from this bacterial infection and continue to live with no signs that they are infected but are still able to shed the bacteria (most commonly in their manure and milk). Once these animals are in the herd, other cattle can easily pick up *S.* Dublin through contact with their manure. Carriers often begin shedding bacteria when they are stressed, for example when entering a new group, at calving, during transport, etc. *S.* Dublin can also be spread by dirty boots and coveralls, when people move from one farm to another.

When to call a vet?

Although many herds do not have this (or have a low level) on their farms, you may be wondering, how do I know if my calves are showing signs of *S.* Dublin? When you are seeing calves with pneumonia that are not improving after treatment, a large number of calves developing pneumonia and/or calves dying suddenly, a veterinarian can help collect samples to submit for testing.

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Post-mortems on calves that have died can also prove to be useful, as tissue samples of many organs can be submitted to screen for *Salmonella* or other pathogens.

How can I treat it?

Treatment for these calves can be quite difficult, often supportive care is one of the best treatments available. Ensuring calves are eating / drinking milk, and being provided oral fluids and electrolytes can help, even when the calves are struggling with pneumonia. Medication for pain and fever, such as Metacam, can be helpful when a calf's temperature is high (>39.5 C).

One of the reasons that we are concerned with *Salmonella* Dublin entering a herd, is because it is resistant to many of the antibiotics that we use. Although some antibiotics can still work well for this type of infection, discussing your options with your veterinarian can help ensure you are using the right antibiotic to treat *Salmonella* Dublin.

What can I do?

Prevention is key. Like most diseases, preventing your animals from becoming sick is better than trying to treat or reduce the burden on your farm. Hygiene and biosecurity are key parts in a prevention plan for Salmonella. Below is a list of some recommended practices:

- Reduce / stop buying cattle from affected herds.
- Ensure cattle you buy are from negative herds (if you need to buy cattle).
- Ensuring boots and coveralls are clean if they are coming from another farm.
- Reduce contact with *Salmonella* Dublin herds.
- Reduce stocking density in maternity pens.
- House sick cows and dry cows separately.
- Reduce movement of your cows to off-farm activity (i.e., shows).
- Good colostrum management (i.e., pasteurizing, avoid pooling from multiple cows).
- Avoid mixing groups.

Testing:

Bulk Tank DFO Test Results: This test involved taking a sample from your bulk tank and looking for *Salmonella* Dublin antibody levels in the milk. Once they have this antibody level, they compare it to milk antibody levels from a cow that is positive for *Salmonella* Dublin. They then label your sample as either "Low Risk" or "High Risk". These risk levels do not necessarily mean that *S.* Dublin is in your herd. They are meant to encourage you and your herd veterinarian to decide the actual risk level based on your herd's health history and to assess your biosecurity practices and see if further testing is warranted.

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Individual Animal Testing: One issue with testing individual animals for S. Dublin is that this bacteria does not always show up in our tests, especially in carrier animals. This bacteria is shed by the animal sporadically (when stressed), and often multiple tests may be needed to confirm an animal's diagnosis.

Human Concerns?

Salmonella Dublin is a zoonotic bacteria, meaning that it can be passed from cattle to humans and other animals. This can cause illness in people with direct contact to affected cows (farmers, herdsman, milkers, calf-caretakers), or those that consume raw / unpasteurized dairy products. In some cases, humans may require in-hospital treatment.

I hope that this information is useful to you, and I encourage you to discuss this further with your herd veterinarian to help assess your herd's risk and for more information.

Dr. Jesse VandenBerg

Upcoming Stat Holdidays

The clinic will be closed for Thanksgiving from Saturday October 7 to Monday, October 9, re-opening Tuesday October 10, 2023. As always, veterinarians will be available 24-7 for emergency service. The Saturday fee schedule will remain unchanged from non-stat weekends.