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NOVEMBER 2022 NEWSLETTER

By now all producers should have received a letter from DFO that showed the results of various diseases that your bulk tank was tested for. Bulk tank samples were taken from all Ontario Dairy Farms and tested for: Johne’s, Bovine Leukosis, Salmonella Dublin and four contagious mastitis pathogens: Staph aureus, Prototheca, Mycoplasma and Strep ag. All producers should have received fact sheets about each of the diseases. It is ***strongly encouraged*** that producers read these in addition to the newsletter to understand how testing was performed and what your results may indicate.

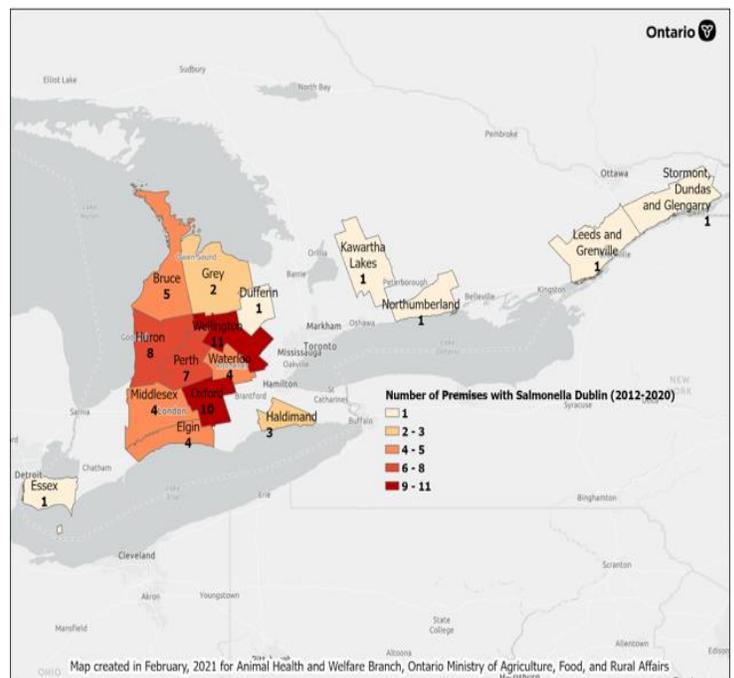
Over the next few months, the newsletters will focus on one disease and highlight recommendations for further testing and preventative measures

Salmonella Dublin *Salmonella Dublin* is a cattle host-adapted strain that typically presents as pneumonia in young calves. Other clinical presentations including septicemia, abortion and/or diarrhea in mature cows can also be seen. Over the last 10 years, there have been 78 confirmed cases of *Salmonella Dublin* (S.Dublin) that have been diagnosed in samples submitted to the Animal Health Lab in Guelph. This emerging disease is becoming more prevalent in Ontario dairies and now is the time to take action to limit introduction and spread of S Dublin within your herd.

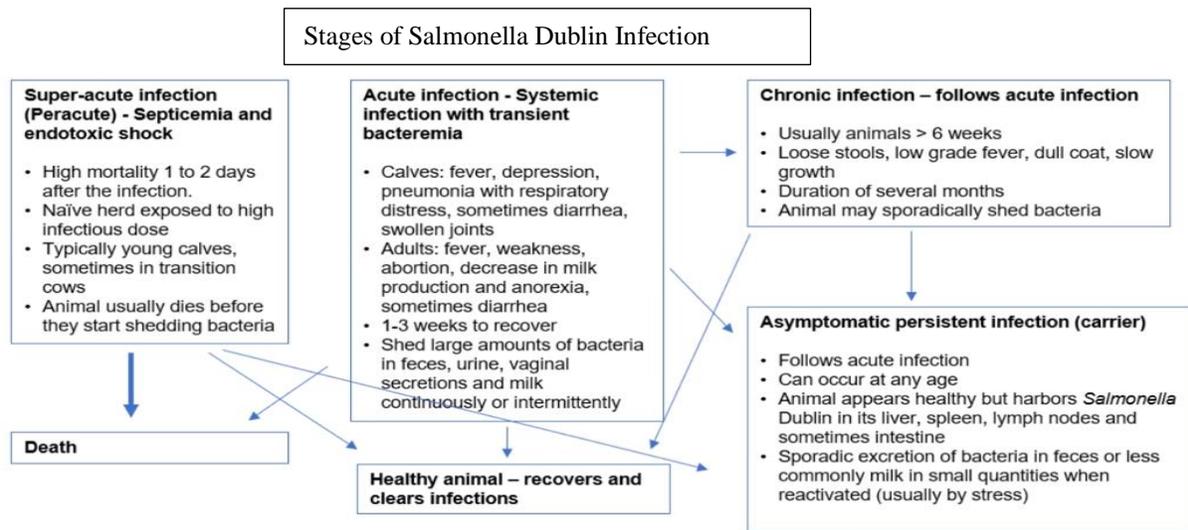
How is S.Dublin brought to and spread throughout my farm?

Buying in new cattle is a significant risk factor to introducing many diseases into your herd including S.Dublin. In addition, S. Dublin can be found on clothing, footwear and tools (machinery, animal health equipment,etc.) Implementing good biosecurity measures can help reduce the risk of bringing many diseases onto your farm.

The main method of transmission of S. Dublin on farm is fecal-oral route. The diagram below outlines the stages of



S. Dublin infection and the associated clinical signs. Once exposed, cattle can either clear the infection or become chronic carriers shedding the pathogen in feces, colostrum and/or calving fluids. These chronic carriers are the source of infection to the rest of the herd.



Adapted from Nielsen, 2013

What testing for S. Dublin is available?

Good news! The Animal Health Lab in Guelph is now offering in house testing of milk samples.

The most common test used measures for antibodies against the disease. As with all tests, the antibody ELISA is not a perfect test! There is an incubation period of 5-6 weeks from when the animal is exposed to S. Dublin to when they will develop an immune response and produce antibodies. A POSITIVE ELISA test indicates that the animal has been exposed, however it does not differentiate between the status of the animal- transient infection or carrier. Referring to the diagram above exposed cattle can clear the infection or become chronic carriers therefore, it is recommended that suspect calves and/or cows be tested multiple times to detect carrier animals. In younger calves, a positive test is strongly correlated with increased risk of shedding. However, this is not the case in older cows.

The bulk tank testing that was performed through DFO also used the antibody ELISA test. Your bulk tank sample was compared to a known positive sample. Again, this test is not perfect! False positives may occur if there were animals exposed before but have now cleared the infection and/or if other Salmonella species are being shed in the milk. False negatives may occur if the incubation period has not occurred. If your bulk tank tested high risk speak to your herd veterinarian about additional testing.

What happens if you get a positive result?

In consultation with your herd veterinarian, we can recommend the best testing protocol that fits your farm. In addition, a risk assessment tool is available to identify high risk areas for transmission of S. Dublin throughout your farm.

Prioritize human health- wearing gloves and hand hygiene is important when working with cattle.

S. Dublin has potentially negative impacts on human health, therefore it recommended that raw milk (from high-risk bulk tanks) not be consumed.

Implementing strong biosecurity measures on your farm can help reduce introduction and transmission of Salmonella Dublin and many other diseases throughout your herd.

Questions or concerns?! Reach out to us today!

Resources:

- Salmonella Dublin: An Update on Diagnosis, Prevention and Treatment. Cynthia Miltenberg.
- <https://calfcare.ca/salmonella-dublin/>
- <https://www.vet.cornell.edu/animal-health-diagnostic-center/news/multi-drug-resistant-salmonella-dublin-cattle>