# *Salmonella* Dublin
# What is the impact?

*Salmonella* Dublin (*S*. Dublin) can have a significant impact on farm operations. There are a variety of consequences that occur when the bacterium infects youngstock and adult cattle.

## Impact of infection in youngstock

*Salmonella* Dublin can cause severe disease in young calves following an acute infection. The calves most severely affected are those that are between two to 12 weeks of age, but disease can occur up to six months of age[4]. Calves that have an acute infection will either have septicemia, where calves die rapidly with few clinical signs, or respiratory disease that is not responsive to antimicrobial treatment. On some farms, in an initial outbreak as many as 50 per cent of calves can die or need to be euthanized as a result of S. Dublin infection. The surviving calves may remain in poor condition and will fail to thrive, resulting in animals that are difficult to market or retain as a replacement for the milking herd[5].

Ongoing mortality after an initial outbreak will also be higher, especially on dairy farms where some of the infected animals will become carriers which look healthy but shed bacteria into the environment. Specifically, on Danish dairy farms infected with S. Dublin, they were two times more likely to have calf mortality above the national average when compared to negative herds[3].

## Impact of infection in adult dairy herds

Beyond the consequences in youngstock, the impacts of S. Dublin infection continue to occur in adult animals. After an initial infection, dairy herds that were positive for S. Dublin also had reduced milk production from seven to 15 months after herd infection in a Danish study[6]. Specifically, first lactation and third or greater lactation cows produced 1.4 kg per day and 3.0 kg per day less milk, respectively. Many of the affected herds did not have milk production return to pre-infection levels for more than a year.

In addition, some of the surviving animals may become carriers of this pathogen, especially if infected between one year of age and calving or at the time of calving[2]. These carriers then serve as a source of S. Dublin which is shed in manure and milk leading to new infections of young calves.

Danish researchers estimated that S. Dublin infection would cost $77 per lactating cow (or $7,700 on the average Canadian dairy farm, assuming 100 milking cows) in the first year of infection. In subsequent years, it was estimated to cost $13 per lactating cow per year, or $1,300 per year on the average Canadian dairy farm (assuming 100 milking cows)[1].

## Take home messages

*Salmonella* Dublin can have a significant impact on dairy and veal operations. It can cause high levels of mortality in calves during an outbreak but also be responsible for on-going losses. With respect to adult cattle, S. Dublin infection in a dairy herd can lead to prolonged milk production losses.

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## For more information:

*References available upon request.*

This fact sheet does not replace medical advice. Producers are encouraged to discuss preventative measures to limit the risk of S. Dublin occurring on their farm with their veterinarian, and work with them to accurately assess and diagnose any sick animals, especially if S. Dublin is suspected. New resources on S. Dublin will be made available for veterinarians to access in the Vet Portal on calfcare.ca.

Disclaimer: This resource is for educational purposes only. Veal Farmers of Ontario is not responsible for any business or management decisions made by consulting this resource.

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