

# Calf Mortality in Salmonella Dublin Seropositive Dairy Herds

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## INTRODUCTION

Salmonella Dublin is a bacterium specific to cattle that causes disease and production loss in dairy herds. Since 2004 all Danish dairy herds have been included in a surveillance program for Salmonella Dublin. The program involves collecting and analyzing serological samples and classifying herds into two levels: "probably free" (level 1) and "probably not free" (level 2).

## OBJECTIVE

The purpose of this analysis is to examine the relationship between herd Salmonella Dublin status (level 1 or level 2) and calf mortality from day 1 to day 60.

## DATA COLLECTION

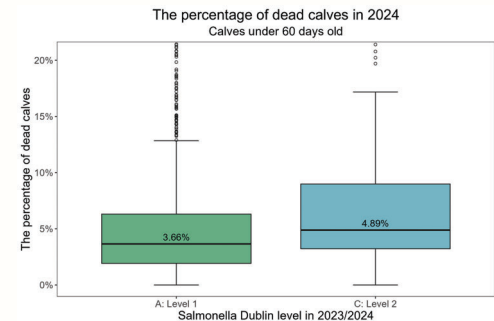
Classification data from all Danish dairy herds during 2023 and 2024 were collected. They were divided into the two groups: Level 1 and level 2. Level 1 (probably free from Salmonella Dublin) have been in the same group for 2 years. Level 2 has been at Salmonella Dublin level 2 for at least 23 out of the 24 months.

In this report, a calf is included in the proportion of dead calves if it died or was euthanized between the ages of 1 and 60 days. For each farm, the following were counted: the number of calves born on the farm during the time period, the number of calves that died or were euthanized between 1 and 60 days of age, and the number of exported calves.

## RESULTS

When comparing level 1 and level 2 using a simple t-test, we find that there is a significant difference in the proportion of dead calves ( $p = 0.000094$ ).

The average proportion of dead calves in level 1 is 4.81%, while in level 2 it is 7.21%. This represents an increase of 49.72% from level 1 to level 2.



Due to restrictions on level 2 herds, a larger proportion of calves from these herds are exported before reaching 60 days of age. As a result, calf mortality rates are likely underestimated for both level 1 and level 2, particularly in level 2.

Group	% of calves exported
Level 1	2.49
Level 2	39.04

## CONCLUSION

- The presence of Salmonella Dublin in dairy herds is associated with increased calf mortality. Calf mortality rates are 49% higher in herds that test seropositive for Salmonella Dublin compared to herds classified as free from the bacterium.
- It is likely, that calf mortality in Salmonella Dublin seropositive herds (Level 2) is underestimated, as the export of young calves is more commonly practiced in these herds than in seronegative ones.
- This elevated mortality rate highlights the importance of controlling and eradicating Salmonella Dublin to enhance animal welfare and reduce production losses in the cattle industry