

# Identification of Risk Factors for Sow Mortality in Canadian Herds

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## Summary

Recent years have seen a trend towards increasing sow mortality figures around the world. In order to understand the underlying causes influencing sow mortality and culling on Canadian farms a project is under way to answer these questions using an integrated approach. Specifically by: 1) Surveying Canadian sow herds on sow losses and related management factors; 2) Visiting herds with high and low mortality levels to confirm survey results and gather additional information; 3) Reviewing the scientific literature and sow mortality data from other major pork producing countries; and 4) Developing recommendations on ways to improve and standardize recording procedures related to sow losses and best management practices to minimize sow losses.

The results of this work will provide a valuable benchmark for the Canadian sow herd and provide a comparison to other countries with similar production practices. In addition, it will identify risk factors for future evaluation and potential targets for genetic selection or improved management practices.

## Introduction

Sow mortality is an important economic and animal welfare concern for pork producers. In addition, high sow mortality affects employee morale and is an important welfare indicator. While it is recognized that a sow must produce three or four litters to cover her replacement cost, the average productive life of sows is decreasing. Although sow mortality has been reportedly increasing, culling and mortality numbers are often combined or not recorded consistently, making it difficult to accurately determine these numbers.

Structural changes in the Canadian pork industry may also be influencing changes in sow mortality figures. The main changes relate to sow housing practices, which have been changing from stalls to group housing. Anecdotal reports suggest that levels of lameness may increase when sows are managed in groups. In parallel, genetic progress and reproductive technologies have led to larger litters and higher sow productivity, with possible negative consequences for sow longevity. Stricter enforcement of fitness for transport guidelines may be another factor influencing on-farm mortality,

with more sows euthanised on-farm rather than being shipped as culls.

Recent reports from US herds indicate average sow mortality rates of 9%, with higher levels in larger herds and more productive herds. Furthermore, almost 50% of the reported death losses occurred in young animals (gilts to parity 2), indicating a significant cost to producers. Having comparable data for Canadian pig herds will benefit sow welfare and Canadian pork producers.

## Experimental Procedures

### Literature Review

An extensive literature review is being conducted, which will explore past and current research on factors affecting sow culling and mortality on pig farms with specific emphasis on environment, management, and genetic aspects influencing sow longevity. Part of the literature review will obtain and summarize production data related to sow mortality and culling from Canada and other major pork producing countries. In the US and in Europe, several regional and national databases exist with good coverage of pig farms, and large amounts of management data recorded.

### Survey of producers

Over 100 farms across Canada with varying levels of sow mortality participated in this study. The data are undergoing analysis to determine factors related to sow mortality including: herd size, type of gestation, breeding and stall housing, feeding routine, genetics, floor type, average sow productivity figures, and culling reasons.

### Data recording in Canadian pig farms

The aim of this study will be to collect data from up to 40 farms (20 farms with high and 20 low sow mortality rates) among farms surveyed in the previous activity. The data will identify significant risk factors associated with high mortality herds, and factors supportive of low mortality. Based on results from the literature review and information collected in the online survey, data recording standards will be

developed to collect detailed information about sow mortality/culling information, as well as additional information such as sow body condition, feet and leg scoring, health issues, and injuries.

## Results and Discussion

The project is currently ongoing. The pork producer survey was completed during the summer of 2020, while farms visits are on going. More information will be available at a later date.

## Implications

The results of this work will provide a valuable benchmark for the Canadian sow herd on sow longevity and a comparison to commercial herds in other countries with similar production practices, as well as identifying the risk factors for future evaluation and potential targets for genetic selection and improved management practices. New approaches will emphasize improvements in gilt management to better prepare animals to enter the breeding herd.

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