

# Understanding the impacts of management practices on udder health during dry-off

Scoping review finds factors like nutrition, vaccinations and dry period length may play a role

By Caitlin Ford

**F**armers have long used antibiotic treatment at dry-off to cure and prevent intramammary infection. But with health concerns growing over antimicrobial resistance, producers are looking for other management practices.

A recent literature review by University of Guelph researchers suggests that many aspects of management may affect this risk during the dry period, typically a

45- to 60-day period before calving.

The dry period allows the udder tissue to involute and prepare for subsequent lactation.

In 2020, population medicine professor Dr. Charlotte Winder and MSc student Carrie McMullen conducted a **scoping review** to identify potential factors beyond antibiotics that help with udder health.

They looked at all pertinent analytical studies published from 1990 to 2020 and sourced from various databases. They aimed to

summarize research on udder health management practices during dry-off in a repeatable and transparent way.

“A scoping review is an initial step at summarizing the literature; it consolidates all relevant research articles into one paper and can identify gaps in the research or notable results. This synthesis is important to guide efficient research in the dairy industry,” says Winder.

“With rising concerns of antimicrobial resistance, the dairy industry is moving away from antibiotic therapy to protect against udder infection during dry periods. We wanted to provide

an understanding of the literature, so future systematic reviews and meta-analyses could potentially quantify the impacts of the various management practices farmers use, like housing, nutrition and dry off milking practices.”

The review uncovered areas with sufficient research to potentially explore with future synthesis work, including nutrition practices, vaccinations and dry period length.

“This review helped us identify these three areas that have potential research implications and could be evaluated in a future meta-analysis,” she says. “It also uncovered some areas that need more research to be conducted before we can draw any solid conclusions—such as housing, bedding and pasture—which are very difficult to manipulate in research studies.”

Nutrition, vaccination status and living conditions could affect the likelihood of infection. Winder says the **publicly available scoping review** can be used to help researchers conduct more in-depth analyses and form conclusions on these management practices.

“There are often secondary outcomes in studies that could point to solutions, so organizing this research in a scoping review can help researchers get to a stage where a meta-analysis can compare all study results,” she says.

This research was conducted with stipend support from an Ontario Veterinary College entrance scholarship and the Queen Elizabeth II Graduate Scholarship in Science and Technology.



Factors affecting udder health during dry-off may include nutrition, vaccinations and dry period length.

Further information on the study can be accessed in the journal [J Dairy Sci](#).

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