DAIRY PERFORMANCE RELATED TO CALF HEALTH

Poor lung health in calves implicated in long-term negative impacts to dairy production

To maximize productivity and profitability, and to facilitate managerial decision-making, dairy producers need to look at their calves' lung health.

Tricia Dunn, graduate from the department of population medicine at the University of Guelph, and Theresa Olivett from the University of Wisconsin School of Veterinary Medicine used thoracic ultrasound technology, a non-invasive chest ultrasound, to analyze dairy cow herd health to determine why some calves grow and perform better than others.

Their results identified lung consolidation—lung tissue lesions that can become filled with fluid and marked by swelling and induration—plays a role in calf performance and can negatively affect dairy production in the long term as calves grow.

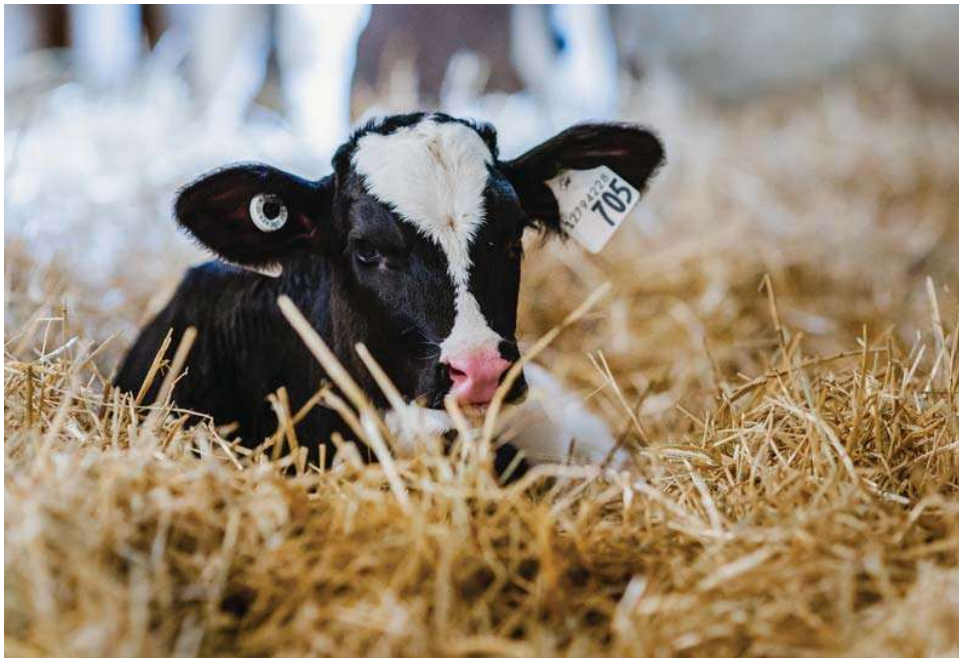
Lung consolidation in calves can occur from illnesses, such as pneumonia and bovine respiratory disease, which often lack clinical signs.

"Calf health is important," Dunn says. "Vets, producers and researchers should spend more time in the calf pen focusing on the health of young stock—not just the milking herd."

Researchers used thoracic ultrasonography to detect the presence and severity of pneumonia and lung consolidation in calves for the first eight weeks of life. The research studied 215 female calves from three herds—one from Elora Dairy Research Centre, one from Ponsonby Dairy Research Centre, and a large commercial herd in southwestern Ontario. Calves were followed after the eight-week study to determine their first lactation milk production.

Results indicate lung consolidation greatly affects future milk productivity and profitability of herds as milk producers. Calves with at least three centimetres of consolidated lung produced roughly 550 kilograms less milk during their first lactation than normal, an economic loss about $350 per lactation in the current market.

"This difference of $350 per calf doesn't seem significant at first, but our research suggests in Canada, more than half the calves in a herd are affected by lung consolidation," Dunn says. "It can work out to be a significant loss for producers."



RESEARCHERS FROM the University of Guelph studied 215 female calves from three herds to determine whether poor lung health in calves affected future milk production. *Photo courtesy of Caitlin MacLeod*

Heifers are expensive to raise, and it often takes until halfway through the second lactation to break even with costs to rear them. If heifers aren't performing well, it will take longer for their milk production to become profitable.

"Milk production in heifers, namely first lactation production, is heavily influenced by early life lung health," Dunn says. "Herd-level management decisions that prioritize improving and maintaining lung health is key."

Because pneumonia and lung consolidation in calves is often not visible to the eye, Dunn suggests producers work with veterinarians to evaluate calf wellness and lung health. Ultrasound technology is readily available and can be incorporated in the regular checkup routine.

Doing this and using best practices for lung health, such as maintaining proper ventilation in calf pens, bedding appropriately for changes in environment and ensuring calves can feed from their mothers early on to obtain immune-building colostrum, can help producers minimize lung complications and maximize profits.

Supervisors and collaborators involved in this research include Dr. David Kelton and Dave Renaud from the University of Guelph's department of population medicine. The Ontario Ministry of Agriculture, Food and Rural Affairs and Zoetis provided funding for this research.

SPARK

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This series highlights dairy research at the University of Guelph.