



Stress reduction

New data supports need for proper dairy herd management to better your cows' health

Reducing your cows' stress levels by making certain management changes on your farm could improve your herd's health and increase milk production.

Higher non-esterified fatty acids (NEFA) in your cow's blood affect how she metabolizes fuel as energy when she is under stress. Known as fat mobilization, the process breaks down body fat to compensate for this negative energy balance.

Researchers from the University of Guelph and the U.S. have found a consistent correlation between higher NEFA levels and metabolic problems, such as metritis, retained placenta and displaced abomasums.

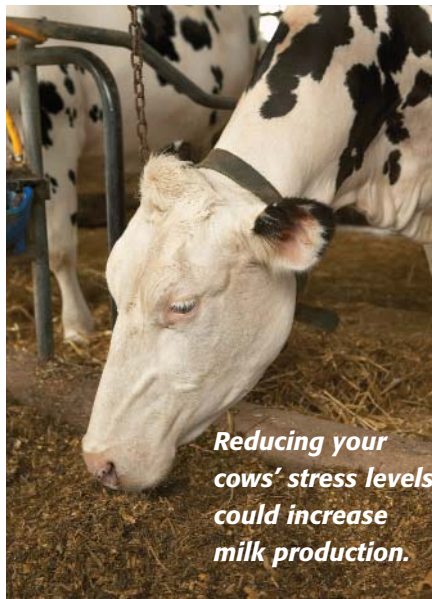
They found higher NEFA levels can substantially decrease milk production by about 1.5 kilograms per day during the first four months of lactation.

Department of population medicine professor Todd Duffield, with the help of several North American researchers, conducted blood analysis on 2,300 cows from 55 herds. The data collected showed higher NEFA blood-serum levels during pre-calving periods strongly correlated with increased disease risk after calving.

The study was the first to show a correlation between pre-calving serum levels and decreased milk production. It highlighted the need to further investigate factors affecting NEFAs.

"This research was essential. Although similar studies have been done for Ontario cows, we're now gaining credibility and reliability

after seeing the same results for cows across North America," says Duffield.




Herds with a greater than average number of cows with elevated NEFA levels had similar management practices that could have contributed to the increase, says Duffield. These factors included:

- mixed close-up dry cows and heifers;
- individual maternity pens versus group pens;
- separate fresh cow groups for early-lactation cows;
- more or less than three rations between the end of the dry period and 30 days after calving;
- higher-risk cows;
- higher concentrations of neutral detergent fibre (NDF), limiting dry matter intake in the pre-calving diet.

The researchers also found higher energy pre- and post-calving diets were associated with lower NEFAs. In addition, protein quality in post-calving diets may be important, since bypass proteins in the fresh cow diet had a negative correlation with post-calving NEFA concentrations.

Producers should work with their nutrition advisor to optimize NDF in their cows' pre-calving diets so intake is not limited, recommends Duffield.

Improving the tools used to prevent and treat metabolic problems is vital, he adds. Currently, producers must submit blood samples to a laboratory. Duffield hopes researchers will soon develop an on-farm tool to better manage metabolic problems when they arise.

"Some issue identification has been made regarding management and feeding strategies associated with transition cow health, but what works for one farm doesn't always work for another," says Duffield. 

Vanessa Perkins is a student writer with the University of Guelph's office of research. Collaborators included Mark Carson, MSc and professors Stephen LeBlanc and Ken Leslie, department of population medicine. Also, Drs. Sandra Godden, University of Minnesota, Jose Santos, University of Florida, Mike Overton, University of Georgia and Michael Capel, Perry Veterinary Clinic, New York, assisted with the project. Funding for this research was provided by Pfizer Animal Health.