Pathogen Identification and Incidence Rates of Mastitis on Organic and Conventional Dairy Farms in Southern Ontario.

L. Levison¹*, A. L. Tucker¹, R. Bergeron¹, H. W. Barkema² and T. J. DeVries¹ 1. Department of Animal & Poultry Science, University of Guelph, 50 Stone Road East, Guelph, ON. 2. Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary, 3280 Hospital Drive NW, Calgary, AB. * levisonl@uoquelph.ca

Background:

Mastitis is recognized as a major concern of the dairy industry, resulting in production losses for producers, decreased milk quality and decreased cow welfare. Management of mastitis can be difficult on any farm regardless of system type; the challenge may increase for organic producers who cannot readily employ medicated treatments. It is beneficial to identify commonly occurring mastitis pathogens so that management strategies are tailored to optimize intramammary infection (IMI) prevention.

Project overview:

An Organic Science Cluster project is currently underway on 59 dairy farms (18 organic, 12 conventional with pasture use for lactating cows and 29 conventional without pasture use) in Southern Ontario to survey key aspects of housing systems, producer management practices, health and welfare of lactating cattle and investigate variations in milk composition.



One specific objective of the project is to collect and analyze producer identified clinical mastitis samples with the intent of identifying incidence rates and predominant pathogen types. A clear sampling protocol was developed and reviewed with all producers at the time of an initial farm visit, to standardize case definition and sampling techniques. Clinical mastitis was defined as any change to the normal appearance of milk (for example flakes, clots, blood or watery consistency), from one or more quarters. Producers were asked to record cow identification, date of sample collection, quarter affected and a mastitis score to indicate infection severity. A single sample was to be taken for every infected guarter. Sample collection began March 2011

and is continuing for one year. In the first 25 weeks of the study 458 clinical mastitis samples have been submitted. Well-defined pathogen identification was possible in 71% of samples, of which only 69% were reported to have sufficient bacterial growth to cause an IMI. The types of pathogens identified thus far are found in Figure 1.

Conclusion:

This research aims to identify common pathogens and associated management practices implicated in mammary infections; this information will aid dairy producers' selection of the most appropriate management strategies to maintain production and cow welfare.

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