

## **Mastitis risk indicators assessed through a germ specific epidemiological model in southern Belgium**

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Bovine mastitis is the most prevalent pathology in dairy production; in order to identify herd related risk indicators, our study focused on germ-specific approach to refine known risk indicators between environmental or contagious epidemiologic models.

We gathered clinical mastitis during 3 months in 21 walloon dairy farms representing 1630 Holstein cows (mean: 67; SD: 18). Farmers were interrogated by a questionnaire about their main practices and basic mastitis knowledge questions. Quarters and severity were recorded, sampled for bacteriology at day 0 and day 21 during 3 months. Individual cell counts were also recorded. Risk analysis included Odds ratio calculation (OR) and multivariate regression.

The average prevalence of mastitis on the study was 3.25% (min 0.3%, max : 11.2%, SD : 2.8%) which is coherent with previous epidemiological studies in Wallonia. 124 quarters were sampled and non-negative bacteriology shown 45% of strictly environmental pathogens, 22% of strictly contagious pathogens and 33% of mix epidemiological model pathogens. Overall risk assessment revealed that cubicles free-stall herds shown mastitis lower incidence (OR = 0.49; IC95 [0.34-0.72]). Surprisingly, post-dipping appeared as an overall positive risk indicator for mastitis prevalence (OR =2.13; IC95 [2,13-3,39]). The germ specific approach revealed that Post-dipping was present in low incidence herds with contagious models (OR=0.29; IC95 [0.12-0.71]) and that the type of pathogen model is an interaction in post-dipping risk analysis (Breslow-Day test  $p < 0.0001$ ), whereas housing had no interaction with the model ( $p=0.33$ ).

In this way of categorizing variables, one is able to identify overall risk indicators or germ-specific model. This can lead to more accurate advices in farm consulting.