



Sources of bovine sarcocystosis at farm : an innovative approach



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INTRODUCTION

Sarcocystosis is a parasitic disease caused by protozoan coccidian parasites. Several experimental evidences have suggested that *Sarcocystis* species are responsible for bovine eosinophilic myositis (BEM) lesions.

MATERIALS AND METHODS

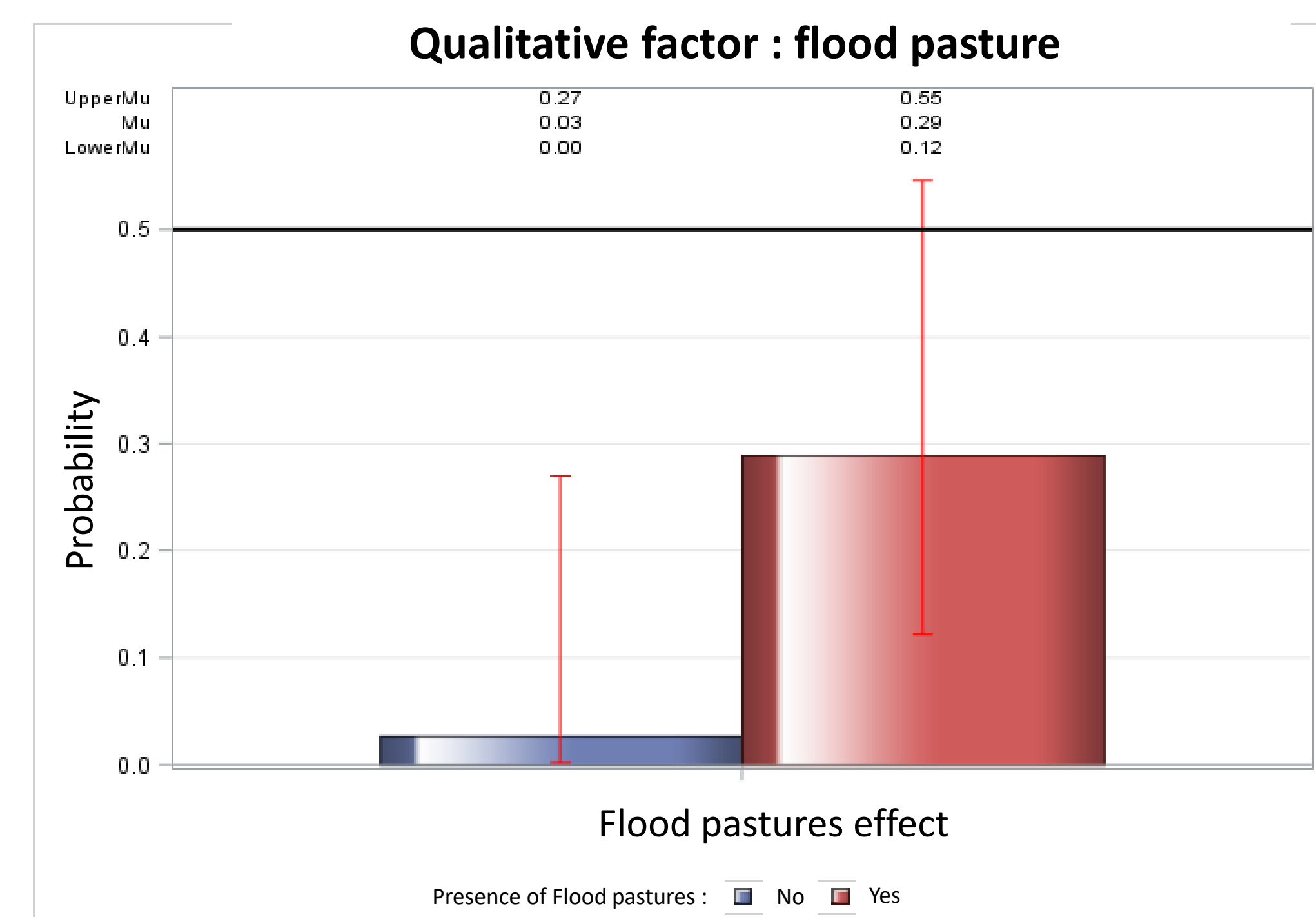
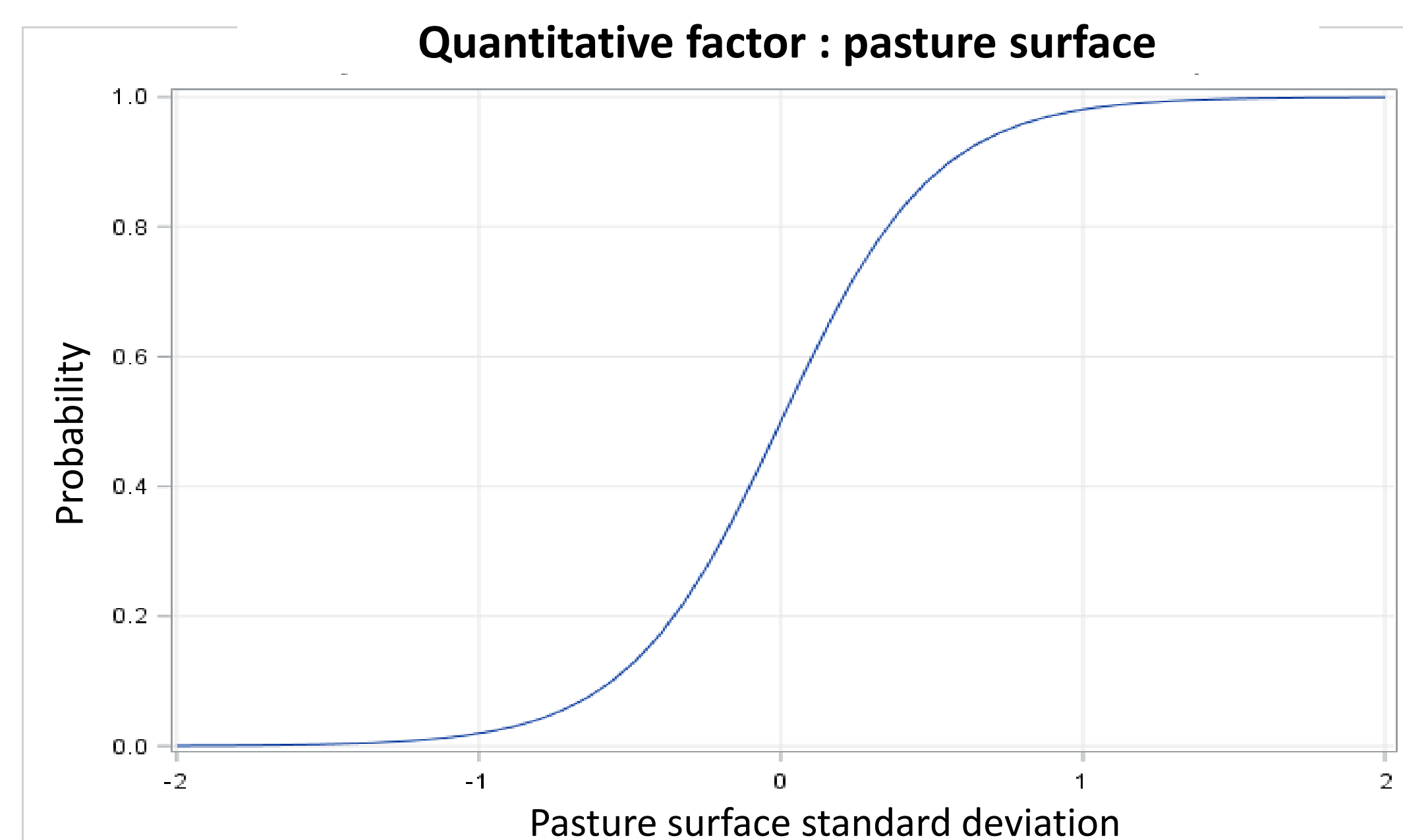
A case-control study has been conducted on 60 farms in six different areas of France. The first step consisted in a qualitative investigation based on a detailed questionnaire, to describe precisely the breeding management system in the selected farms. The second line of action consisted in taking environmental samples (pasture grass, water and soil) to detect and identify environmental cattle *Sarcocystis* species in different zones in farms at risk (positive for BEM) and control farms. For each sample, a Multiplex PCR protocol targeting the 18s RNA gene and mitochondrial COI gene was applied to determine the different *Sarcocystis* species.



A statistical analysis using stratified multivariate logistic models has been carried out to identify risk factors which significantly (at a 5% threshold) increase the probability for a farm to be a case (ie positive for BEM).

RESULTS

- Several significant risk factors have been brought to light, in particular linked to grazing/breeding activities : increase of pasture surface, presence of flood pastures, decrease of grazing period, increase of mean number of calving per cow.



Figures 1 & 2 : two significant risk factors which increase the probability for a farm to be a case : pasture surface and presence of flood pastures

- Sarcocystis* species differences found in the environmental samples were not correlated to the status of farms. However, the presence of *Sarcocystis* in pasture grass (irrespective to the species) was found to be a significant risk factor.
- Accordingly to scientific literature, *S. cruzi* was frequent and *S. hirsuta* very rare. *S. hominis* was quite rare, and found only on grass samples.

PERSPECTIVES

This exploratory study is to be considered a first step and it would be interesting to complete the results with additional investigations.

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