Validation of the Dairy Health Recordings - Use of Farmers as the Gold Standard in Finland?

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Objectives

• To obtain insight into farmers' views concerning our research
• To get a rough estimate about the reliability of the information collected from the farmers to be used as gold standard in our validation.

Importance of the Study

Chart 1: Seventy four (74) percent of the farmers evaluated this study to be important or very important and only 4 % thought it had very little or no importance at all.

Farmers' Assessment of Disease Observations

Chart 2: Majority of the farmers assessed themselves having done good or excellent job when recording all diseases in their farm in both study periods. In the second period there were more poor and tolerable assessments than in the first one. One factor could be that second period was at busy autumn time.

Background

Previous studies indicate that the differences between the Nordic countries' registry systems make it problematic to compare disease incidences between the countries (Forshell et al. 1995, Olsson et al. 2001). Our main goal is to validate the dairy reproduction disease health recordings in Finland, Denmark, Norway and Sweden. For the validation we are comparing the disease recordings done by the farmers in their herds with diagnoses in the national health recording systems. The farmers recorded the diseases during two separate two month periods in 2008. For validation purposes, it is crucial that the data used as a gold standard is as accurate as possible and represents the true values of diagnosed diseases. In clinical studies rather accurate gold standards can be achieved for example by post mortem or bacterial culture. So called "non-gold standard methods" can also be used (Hui & Walter, 1980). When validating databases the use of a gold standard is even more complicated. Although farmers are experienced in detecting disease incidences, it is important to obtain insight into the quality of the disease observations recorded by them.
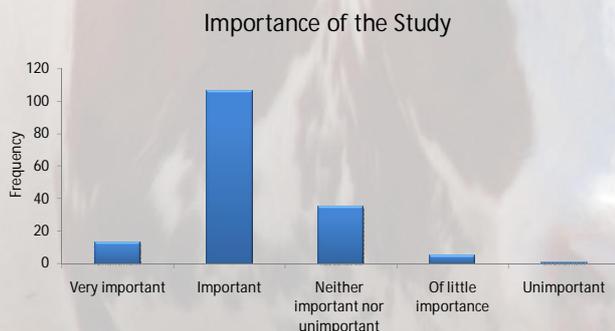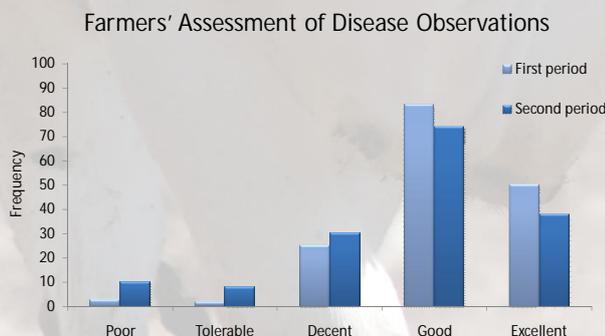
Materials & Methods

To study the quality of the farmer diagnoses, a questionnaire was sent to all of the study farms in all the countries. This was done to obtain background information about the farm and the farmers' own opinions on the study and also about how accurately they felt they had recorded all the disease incidents they had detected. In Finland, 166 producers recorded diseases during our study. 160 of them filled in and returned the questionnaire.

Conclusions

• There was high interest towards this study (Chart 1) which suggests that information to improve the health of dairy cows is needed and appreciated. High importance might also explain the high evaluation of farmers' own assessment.
• Most of the farmers (81% in spring, 70% in autumn) estimated that they had done good or excellent job at recording diseases in their farm.
• Very few farmers did not reply (3.6%) so it is unlike that poor or tolerable recordings are under-represented.
• Although this type of assessment is very subjective, the results are promising and may help us in later stages of the study.
• In some diseases, there is a high variation in disease detection between the farmers and the veterinarians (Virtala et al. 1996) and for that reason accurate gold standard is difficult to achieve and alternative methods for validation are likely to be needed.

References
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