

Establishing a health monitoring system for cattle in Austria – first experiences

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Abstract

A project to establish an Austrian wide health monitoring system for cattle is currently being implemented. Within the project diagnostic data, which have to be documented by law (law of drug control) are standardised and recorded into a central database. All farms under performance recording are free to join the project. To increase the health status of the animals by management measures health reports are elaborated. The first health reports are already available for participating farmers and veterinarians. Responding to an increasing interest in health issues, already 8,500 farms have been participating by the beginning of the year 2007 with more farms continuously joining. In some federal states the percentage is already above 70% of farmers under performance recording. At the same time the recording of diagnostic data has started. For their recording in daily work, the motivation and awareness of farmers and veterinarians are essential. First experiences show that the recording of diagnostic data follows an earlier published model about adoption and diffusion of innovations. An overall aim of the project is the development of a genetic evaluation for health traits for the main Austrian cattle breeds.

Keywords: health monitoring, cattle, health reports, genetic evaluation

Introduction

The improvement of the health status of cattle is of increasing economic importance as production prices are decreasing. From the consumer perspective the security of food is also gaining interest. In Scandinavian countries, animal health data have been routinely collected and utilized for years. In Austria, recording of diagnostic data and treatments is obligatory by law. However, up to now those data were neither standardised, nor electronically collected and stored and may therefore not be used for breeding and management purposes as in the Scandinavian countries (Aamand G., 2006, Philipsson and Linde, 2003, Nielsen, U., 2000). Within the project a health monitoring system for cattle in Austria including all animals under performance recording is established. The data are used for management und breeding purposes.

Background

In recent years, the contribution of functional traits in the breeding goals of cattle has been considerably increasing in most countries. In Austrian cattle breeds, functional traits have a weight of almost 50% within the total merit index. However, presently no direct health data are included. For mastitis and fertility the auxiliary traits somatic cell count and the Non

Return Rate 90 (paternal and maternal) are considered, respectively. Additionally, the traits functional longevity, calving ease (paternal and maternal), stillbirth (paternal and maternal) and persistency are included in the total merit index. An economic analysis of veterinary treatments in cattle in Austria (LK Austria, 2005) has shown that the average costs of veterinary treatments are about 0.8 cent/litre of milk in Austria. If all indirect and secondary costs are included the amount may be up to 5 times higher (Platen, 2003). According to Heringstad et al. (2000) average costs of mastitis vary from 108 to 460 US \$. Consequently, a reduction of health costs has a considerable impact on the demanded lowering of production costs.

Recent studies on genetic parameters (e.g. Heringstad et al., 2003, Rogers, 2005, Zwald et al., 2004a,b) encouraged the decision to start collecting and utilizing health data. Compared to heritabilities for the functional traits presently considered in the total merit index the reported heritabilities for different health traits are even higher.

Health traits are sensible traits and farmers as well as veterinarians might be afraid of the collection of these traits. Nevertheless, the project is supported by the legal obligation to record and store all treatments and diagnoses in livestock.

Aims

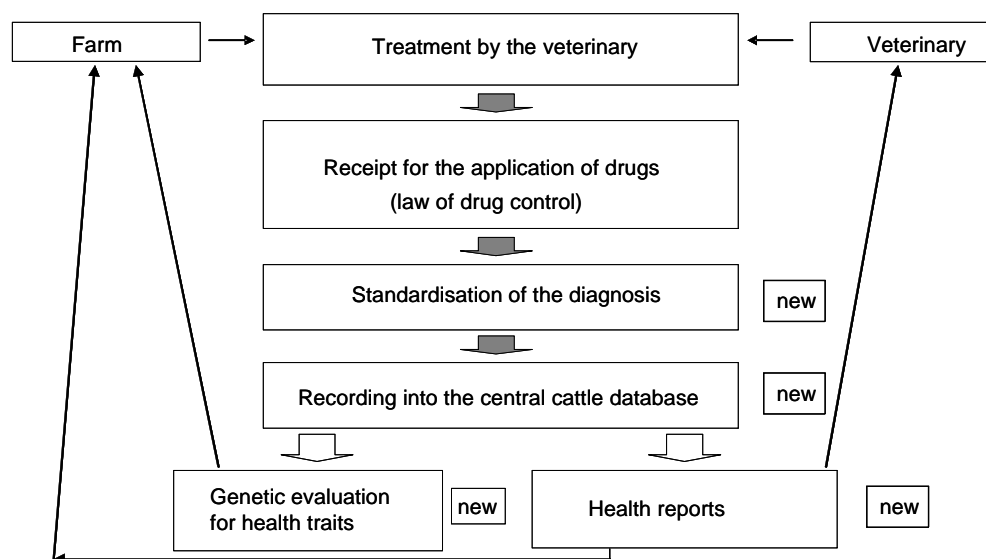
Overall aims are the increase of animal health in cattle by breeding and management measures resulting in an improved economic sustainability. Another overall aim is the increase in food security. By working together within this project, the collaboration between agriculture and veterinarians will be strengthened. The project should also have an impact on the positioning of the Austrian Agriculture.

Project aims:

- Establishing and implementing a system of recording diagnostic data
- Health reports for farmers and veterinarians as well as the centres of the animal health organisations (TGD).
- Genetic evaluation for health traits.

1. *Establishing and implementing a system of recording diagnostic data*

Figure 1. Recording of data and backflow of information.



The precondition for the recording of diagnoses is the availability of standardised data. By legal obligation, diagnoses and treatments have to be documented. These documents have to be kept for 5 years by the veterinarians as well as the farmers. However, up to now these data have neither been collected nor stored in a database. Within the project a key with standardised diagnoses was elaborated and the form for registration of diagnoses and treatments was adjusted accordingly.

The diagnoses are collected by the performance recording organisations or may be electronically sent to the database by the veterinaries. The data are stored within the central cattle database (Rinderdatenverbund, RDV) in Austria.

The project is based on voluntariness so that each farmer under performance recording is free to take part. A very important issue is the monitoring of the recording and the data validation.

2. *Health reports*

To improve the health status in cattle herds the obtained information has to be used for management decisions. Thus farmers and veterinarians who take part receive health reports for their herd management. These health reports include all already existing information from performance recording as well as diagnostic data. Furthermore it is planned to include data from slaughtering houses, milk laboratories as well as from hoof trimming. The health reports will be the link to the animal health organisations (TGD), which can use this information for consulting their farmers. The health reports are worked out together with the University of Veterinary Sciences.

3. *Genetic evaluation*

The very important aim is the elaboration of a genetic evaluation for health traits. Presently no genetic parameters for these traits are available for Austrian cattle populations. Beside the analyses of the different environmental effects, an extensive study of the trait definition is important. The results will be implemented in a routine evaluation for health traits. Results can be expected in 2010.

Benefits

Farmers/breeders: Health reports for the optimisation of herd management will be available as well as improved breeding values for bulls.

Veterinaries: Health reports are valuable for consultancy of farmers in disease avoidance. The health reports may be a valuable tool for auditing.

Animal health organisation centres: Information about the health status will be available for the elaboration of training programs and identification of target groups.

Cattle breeding: It is a contribution to the further positioning of the Austrian cattle breeding with a breeding goal with high emphasis on functional traits.

Consumer: On the long term an increase in consumer security is expected.

Project organisation

The project is a collaboration between the animal health organisations (TGD), the Chamber of Veterinaries, the Chamber of Agriculture, the Central Federation of Austrian Cattle Breeders (ZAR), the ZuchtData EDV-Dienstleistungen GmbH, the University of Natural Resources and Applied Life Sciences, the University of Veterinary Sciences and the Ministry of Agriculture, Forestry, Environment and Water management as well as the Ministry of Health and Women. The project executing organisation is the ZAR.

The project is managed by a committee represented by members of breeding organisations, performance recording organisations, science and veterinarians.

Present status of implementation

By the end of May 2007 about 9.500 farms (about 40% of all farms under performance recording) are taking part in the project. There are regional differences. In Lower Austria the percentage has reached already 77%, in Carinthia 72%.

The recording of diagnostic data has started with some delay. Mid of February 2007 diagnostic data from about 1,100 farms were recorded, by the beginning of June 2007 there are diagnoses from about 3,300 farms stored in the data base. For routine recording still time, information, awareness and a visible benefit for farmers and veterinarians is needed.

Conclusions

Already about 9.500 farms under performance recording have already joined the project. The recording of the diagnostic data has started as well. First experiences show that time, information, awareness and a visible benefit for farmers and veterinarians is needed for comprehensive recording by daily routine.

Measures to monitor and improve animal health and food security are sensible. Therefore the full support of all involved partner organisations is essential. Success depends on the collaboration of breeding organisations, performance recording organisations, veterinarians and researchers as well as on the support of the Ministries.

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