

Establishing a health monitoring system for cattle in Austria

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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) will be standardised and recorded. All farms under performance recording are free to join the project. Not only data of cows, but also of calves, heifers and bulls will be collected and stored in the central Austrian cattle database. In the same database all other performance and fertility data are also governed. To increase the health status of the animals by management measures health reports will be elaborated for farmers as well as for veterinarians.

The overall aim is the development of a genetic evaluation for health traits for the main Austrian cattle breeds. This Austrian wide project is a collaboration between the breeding organisations, the animal recording organisations, the veterinary organisations, the University of Natural Resources and Applied Life Sciences as well as the University of Veterinary Sciences. It is supported by the Ministry of Agriculture, Forestry, Environment and Water management and the Ministry of Health and Women.

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 other countries, for example in Switzerland, Germany or USA, projects dealing with health monitoring have started recently. In Austria, recording of diagnostic data and treatments is obligatory by law. However, up to now those data are 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).

Hence, the aim of this project is to establish a health monitoring system for cattle in Austria including all animals under performance recording.

Background

In recent years, the contribution of functional traits in the breeding goals of cattle has been considerably increasing in most countries. In Austrian Simmental, functional traits have a weight of 44% 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) encourage 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:

- Development and implementation of a system to collect diagnostic data
- Health reports for farmers and veterinarians as well as the centres of the animal health organisations (TGD).
- Genetic evaluation for health traits.

Implementation

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.

Measures

1. Information and motivation

The precondition for a successful implementation of an Austrian wide health monitoring system is the motivation of farmers and veterinarians to take part. Health data are sensible data and the recording of these data might be connected with some fear. Therefore it is very important to inform the farmers and veterinarians about the benefits and to consider their concerns.

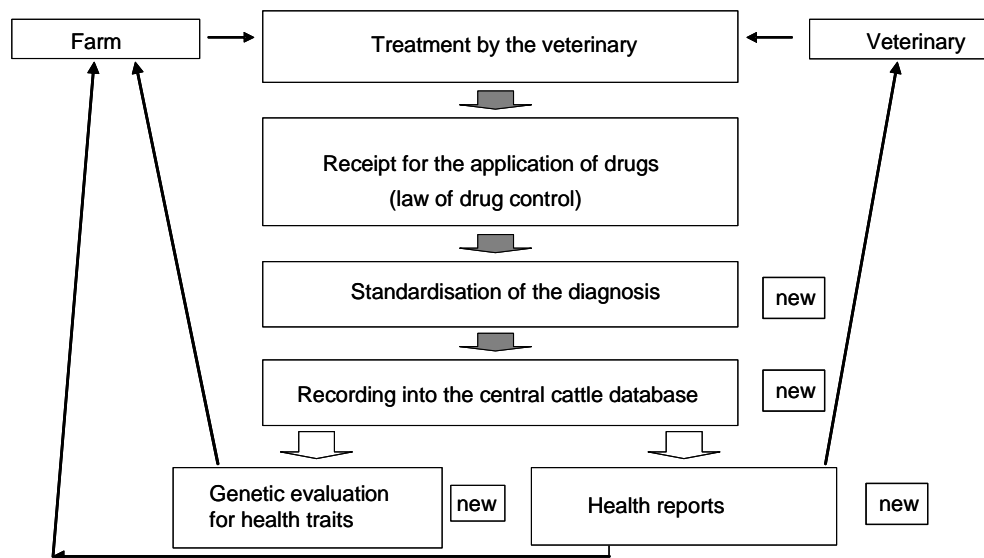
2. Establishing and implementing a system of recording diagnostic data

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 will be 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 will be the monitoring of the recording and the data validation.

Figure 1. Recording of data and backflow of information.



3. 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 will receive health reports for their herd management. These health reports will 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 will be worked out together with the University of Veterinary Sciences.

4. 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 genetic parameters will be estimated for the main breeds. Different genetic models will be analysed. Additionally, it is planned to estimate economic weights for the different health traits. The results will be implemented in a routine evaluation for health traits.

Financing

The project is financed by the Ministry of Agriculture, Forestry, Environment, and Water management, the Ministry of Health and Women and the Federation of Austrian Cattle Breeders.

Timeframe

The information and awareness campaign takes part in the first half of the year 2006. The preparations with elaboration of an Austrian diagnoses key will be finalised with the publication in the official vet news in spring. Data recording is planned to start in July 2006. The recording of the diagnoses within the project is planned for three years. After the evaluation of the recording, the system will be adapted for the routine. Research with respect to genetic evaluation will start in July 2007.

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.

Conclusions

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, veterinaries and researchers as well as on the support of the Ministries.

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