

IT-Network-Solution for goat performance data recording in Bavaria and Baden-Württemberg (Ziegendatenverbund, ZDV)

K. Drössler¹ & F. Gollé-Leidreiter¹

¹ *Landesverband Baden-Württemberg f. Leistungs- und Qualitätsprüfungen in der Tierzucht e.V. (LKV BW), P.O. Box 13 09 15, 70067 Stuttgart, Germany*

Abstract

The introduction of an IT-network solution for the recording of goat performance data (Ziegendatenverbund, ZDV) enables the establishment of a common goat data base and goat herd book. It is developed by the milk recording organizations (MRO) and goat breeders association (GBA) in Baden-Württemberg and Bavaria and will open the way for innovative steps in goat breeding and husbandry of these two federal states.

Keywords: goat breeding, IT-network solution, performance data, herd book

Introduction

In Germany the breeding of goats is organized on state level. The plan to establish genetic evaluation of goats requires the development of an IT-network solution for the recording of goat performance data. In comparison to cattle, the whole goat population in Germany is small and the number of goat breeders in each federal state can be considered as very small, e.g. in Baden-Württemberg exist about 64 farms. Respectively, the financial means of the breeders association (GBA) for genetic evaluation are marginal, while the development of an IT-network is costly. Therefore, the milk recording organizations (MRO) and breeders association (GBA) for goats in Baden-Württemberg and Bavaria came together to jointly develop software for the recording and processing of goat performance data (milk and meat) to keep costs affordable.

To further reduce the development costs, both BA's are using the existing network of the cattle performance data recording (Rinderdatenverbund, RDV). The ZDV is therefore built on existing structures of the RDV, which is organized as a decentralized data processing system. The decentralized IT-structure permits the partners to adapt the software to different regional circumstances and to keep the authority over own data.

The aim of this paper is to present the ZDV with its different software packages leading to a common data base and a goat herd book. Ways of a comprehensive performance data recording as base of the herd book are indicated. The genetic evaluation of goats is an important part of the common data base, but will not be further discussed in this paper as it was presented by Hamann & Herold (2012).

Background of the ZDV

The development of an IT-network is comprehensive and requires the corresponding financial means. Through an alliance of organizations these costs can be divided between partners. Reason enough for the MRO's of Baden-Württemberg, Bavaria, Schleswig-Holstein and Austria to form such an alliance, which exists since 2003 for the development of the RDV.

Each MRO is running an own IT-department and an "Oracle" data base. A joint working group of software engineers guaranties a maximum of common statistical models and software development. Through this close cooperation, the idea was born to build the ZDV on the base of the RDV and to extend this successful cooperation from the cattle to the goat sector.

ZDV partners

In the year 2012, different organizations came together with the aim to develop an electronic herd book program for goats. The regional MRO's were assigned by the regional goat breeders association (GBA) to develop an according IT-network solution. The MRO's are hereby in charge of the programming work and the maintenance of the datacenter. Partners of the ZDV are up to know:

- Goat breeders association of Baden-Württemberg (GBA BW)
- Goat breeders association of Bavaria (GBA BV)
- Milk recording organization of Bavaria (MRO BV)
- Milk recording organization of Baden-Württemberg (MRO BW)

ZDV software packages

The comprehensive work of running a herd book necessitates different software packages. At the beginning it was important to equalize the various demands of each partner on the system in order to develop practicable software. At present, the ZDV offers the following software packages, analogue to the RDV (Zuchtdata, 2013):

- 1) ZDV Classic, milk and meat performance data recording
- 2) ZDV Breed
- 3) ZDV Mobil
- 4) ZDV Market
- 5) ZDV Farm (ZDV4M)

ZDV Classic, milk and meat performance data recording

ZDV Classic is a software program for the recording and processing of goat performance data (milk and meat). The results of the official meat and milk recording are transferred to the common data base and available by this software program.

Actual results are directly reported to the milk goat keepers after each official milk control. The report is arranged according to important parameters, showing all individual results and highlighting most important parameters by a graphic display. The detection of weak points in the field of udder health or metabolism is facilitated through these diagrams and a traffic light system, allowing fast counteractions.

Results of birth and weaning weights are equally reported after each official recording to the meat goat keepers. Average daily weight gains are calculated and shown per animal.

At the end of one control year all results are going into the final calculations and are validated before the members of the performance recording organization get the report of the year. This report is an overview on performance parameters of all controlled goats, calculated on a yearly base and showing all individual results. It indicates the outcome of one breeding year and serves the breeders as decision-making tool for the selection of future breeding animals.

ZDV Breed

ZDV Breed is a herd book package for the GBA's. It includes all animal data of each registered goat, its pedigree, scores and classification. There is a tool for the selection of billy goat mothers and billy goat fathers. The program generates automatically pedigree and health papers. The software offers different possibilities for statistical analysis based on either farm level, the local breeding club or the regional breeding association.

Employees of the breeding association use ZDV Breed additionally as a standard tool for the administration of their members and of the different regional areas.

ZDV Mobil

ZDV Mobil is an online solution for technicians of the GBA's and MOR's to collect and correct performance data in the field. The technicians can access all data of the herd book and enter or correct data on the spot, made possible without permanent internet access. The data in ZDV Mobil can easily be up-dated with the data in ZDV Classic over an internet access.

ZDV Market

ZDV Market is a software package for auctions and exhibitions. It is a “free-standing” program, which is necessary through the fact that internet access is not automatically available in every venue. The data exchange with ZDV Breed is given through respective interfaces.

The preparing steps for the auctions or exhibitions are thus carried out in the ZDV Breed program. First step is the set-up of the auction or exhibition venue, followed by creating a data file of the animals taking part. The last preparing step is the print of catalogues before transferring all data to the ZDV Market. Information and collected data from the event are later transferred back to ZDV Breed.

ZDV Farm (ZDV4M)

ZDV Farm is a specialized online program for farmers to enable an easy and fast herd management and is thus of great interest for goat keepers.

Besides animal keeping, feeding and health, the management focuses on the set-up of an efficient and high-performing flock through breeding (Herold, 2013). The management program focuses also on economic aspects. Results of the official milk control and the data from the herd book are the base of the herd management and enable even in large flocks an appropriate treatment of problematic animals. All information out of the program facilitates the decision making of the farmer regarding the herd management.

Up to know all results of the official recording and control are given to the goat keepers in form of hard copies. With increasing herd sizes the interpretation of this data is getting more complicated and thus enhances the use of an online-tool, such as the ZDV Farm.

In ZDV Farm the results of the official milk control can easily be sorted and analyzed corresponding to individual needs of the farmers and according to different criteria. Graphical display helps to understand the biological coherences. Feeding, animal health and the mate selection are getting new impulse from this online tool. Weekly action lists are further facilitating the structure of the daily farm work and simplify the herd management. Further advantages of the ZDV are:

- No need to buy and maintain an own software
- No special requirements of the existing hardware
- No back-up problems
- No multiple data entry
- User friendly program, less work intensive
- Larger data pool
- Cost-effective

Summary

The ZDV system is a decentralized IT-solution for goat breeder associations (GBA's). Furthermore the ZDV, especially the ZDV Farm (ZDV4M) offers goat keepers an efficient and cost-effective decision-making tool on animal, herd and farm level. The datacenter is located at the milk recording associations (MRO), which maintain own IT-departments and run an "Oracle" data base, thus the users have no problems with software maintenance or data back-up.

Over 80% of the IT programs are a joint development. However, the decentralized IT-structure enables the partners to adapt the IT solution to different regional configurations and circumstances. Analogue to the development of the RDV, the MRO's and GBA's will continue the development of the ZDV. The start of genetic evaluation of goats in Baden-Württemberg will further support the establishment of a common goat data base. At present, other MRO's and BA's are considering to join the ZDV-network.

List of References

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