The use of health data: perspective of a Ministry

M. Putz

Bavarian State Ministry for Food, Agriculture and Forestry,
Ludwigstraße 2, 80539 München, Germany

The health of farm animals has strongly become the focal point of the awareness of our society in recent times. Animal health is also present on the political agenda as a result. Helmut Brunner, Bavarian Minister of State for Food, Agriculture and Forestry, has set his sights on improving animal health and enhancing animal welfare in Bavaria (Brunner 2012) – and as one of his colleagues I support him to the best of my ability. That is why I am pleased and thankful that I may present the view of the Bavarian agricultural ministry on the use of health data.

The Free State of Bavaria is one of 16 federal states in the Federal Republic of Germany – and the most important agricultural state among these federal states. In Bavaria there are 93 700 farms (> 5 ha), which cultivate 32 hectares of agricultural area on average.78% of them keep farm animals, for one thing because over 1 million hectares of permanent grassland can only be usefully exploited by means of animal husbandry, and on the other hand because the marginal area configuration of many farms necessitates higher added value from animal husbandry to secure a livelihood. The cattle population encompasses 3.3 million head of cattle (kept by 56 000 cattle farmers), of which 1.2 million are dairy cattle (kept by 40 000 dairy cattle farmers). The pig population of 3.5 million animals is distributed on 7 100 farms.

The *Landeskuratorium der Erzeugerringe für tierische Veredelung in Bayern e.V.* (LKV; Bavarian Association for Animal Production) is responsible for the implementation of milk recording. Approx. 1 million dairy cattle have been tested annually somewhat constantly for over 30 years. If we look at a few indicators which result from milk recording, then the following picture ensues and described in table 1.

In the period from 1982 to 2012, the average herd size doubled from 20 to 40 cows. The milk yield was increased from 4 906 to 7 349 kg per cow and year. The somatic cell count is overall on a level that indicates good udder health. The trend is even slightly positive. The age of culling as an indicator of productive life span has noticeably decreased from 6.1 to 5.5 years. The percentage of cullings tends to be declining, but particularly the disease-related cullings have substantially increased. The cullings in 2012 were most frequently because of udder disease (16.3%), claw disease (9.7%) and metabolic disease (2.5%).

Table 1. Results of milk recording in Bavaria 1982 – 2012.

	1982	1992	2002	2012
Herd size (dairy cows)	20.6	24.0	29.7	39.8
Milk yield, kg	4 906	5 437	6 424	7 349
Somatic cell count, n / ml	204 000	197 000	197 000	191 000
Culling age, years	6.1	5.8	5.5	5.5
Culling percentage, %	29.9	26.6	28.1	25.2
of which:				
- udder disease, %	6.7	11.1	13.0	16.3
- claw disease, %	5.8	10.2	9.5	9.7
- metabolic disease, %	0.9	1.5	1.5	2.5

The genetic trends for health-relevant characteristics such as the breeding values for fitness, somatic cell count and productive life span mainly show a positive trend for the past 12 bull age groups with Fleckvieh cattle, whereas the breeding value for maternal fertility has at least remained stable (Emmerling 2012).

Another level of consideration is the economical level. The scientific evaluation of accounting data for Bavarian dairy farms is the basis for the *Milchreport Bayern* (Bavarian Milk Report), which has existed in this classification since 2004 (Table 2).

Germany, for instance. But there are also several small hotspots in Bavaria. The lower life expectancy of farm animals, the increased diseases and increased loss rates are discussed by consumers as problems. Intensive animal husbandry be only controllable with massive use of medication. In particular, antibiotics are feared as increasing resistances, which ultimately threaten the health of people. In addition to the economic concerns, demands for an improvement of animal health due to ethical responsibility, i.e. because of the avoidance of suffering and pain for the animals, are increasingly emphatic. However, not only consumers demand healthier

Table 2. Costs for veterinarians and medications.

	2004	2006	2008	2010	2011
Number of farms	185	499	515	290	279
Dairy cows	50	54	58	65	68
Milk yield, kg ECM/cow	7560	7413	7529	7723	7974
Somatic cell count, x 1.000/ml	176	175	178	180	178
Losses of calves, %	11.8	11.7	10.5	10.4	11.5
Losses of cows, %	2.2	3.5	3.2	2.9	3.0
Costs for veterinarians and medications, •/cow/year	97	99	101	107	111

animals, but also farmers themselves. For instance, a survey of cattle breeders (Steininger 2013) in Austria and Germany revealed that farmers themselves want healthier animals. This is expressed with the personally pursued breeding objective. The order of preference there is: 1. fertility; 2. udder health; 3. productive life span. Moreover, farmers call for support in their breeding work through new breeding value characteristics, in the following order of preference:1. metabolic stability; 2. claw health; 3. feed / energy efficiency. In particular, they have asserted the need for additional information with the following priorities: 1. fertility and animal health; 2. effective bull selection; 3. planning for mating.

The demand for improving the health of farm animals is not fundamentally new for many animal breeders and animal farmers. In this regard they can oppose the current political and societal demands to a certain degree. For this purpose I would like to mention two examples from Bavaria.

In 2010 we started the project **PROGESUND**, which is financed with state subsidies amounting to 764 000 Euros. The comprehensive and routine acquisition of disease diagnoses in cattle farms has now been in progress since November 2012 (Zeiler 2012). Diagnoses are stored in a central database and systematically evaluated in conjunction with the master data and performance data of animals. In addition, observations such as milk fever or parturient paresis, placental retention and umbilical hernia with calves are reported by animal owners to the central database of the Bavarian "Identification and Information System for Animals" (HITier) in conjunction with the obligatory birth registration and included in the evaluations insofar as they originate from PROGESUND participants. Although participation is voluntary, in the period of 15 months (status as of 3 May 2013) 65 % of Bavarian cattle farmers have already reported observations for more than 1 million births (Carmanns 2013). All farmers and veterinarians participating in **PROGESUND** can retrieve health reports online at any time, which can be utilised for better herd management and for better livestock support. As soon as a sufficient data volume is available, these data will also be utilised for an estimation of breeding value characteristics such as mastitis, fertility disorders, cysts and milk fever. Austria is several years ahead of us with regard to health monitoring. The penetration in the area is already very high there, and official breeding values for health traits are already routinely available.

QUALIFOOD is an information platform which was initiated in 2008 and developed with state support (246 000 euros) by *Fleischprüfring Bayern e.V.* (Bavarian Association for Meat Inspection) together with the Bavarian meat industry. Farmers, suppliers, slaughterhouses and other stakeholders have the opportunity here to view and retrieve their participant related data regarding slaughters, veterinary findings and control measures recorded by slaughterhouses and production establishments. Data is permanently available to them for documentation purposes, for evaluations and for promotion of their operational success. In the "slaughter data" module, the weight and classification data ascertained daily

by the participating slaughterhouses are uploaded immediately after slaughter and provided for evaluations and as a download for acquisition in inventory control or other IT systems. In the "veterinary data" module, detailed evaluations of the diagnostic data collected on the animals for slaughter are provided during the meat hygiene inspection. **QUALIFOOD** is quite actively utilised in the pork sector. For example, an accumulation of conspicuous lung examination findings is taken as a reason to inspect the climate of the stable in the production establishment.

These two examples are certainly merely a modest start. But they are proof that the conviction and willingness to record and intent to use health data exists and continues to increase. Health data can contribute towards detecting health problems at an early stage. "Organisational blindness" can sometimes only be overcome through industrywide comparisons in the sense of benchmarking. Because many diseases are also caused or intensified through deficiencies in husbandry or management, diseases, and thereby also treatments, can be reduced through preventive measures. And with that we once again come one step closer to producing healthier foodstuffs through healthier animals.

I am convinced that it is worthwhile to utilise all data sources with health indicators such as performance test data, claw trimming data, veterinary data, slaughterhouse data and – to an increasing extent – also livestock farming data which arise due to increasing automation and are systematically utilised much too seldom. Ideally, all data should be compiled and the knowledge generated from this should be made available to all authorised users on one platform.

List of references

Bayerischer Agrarbericht 2012, München. *www.agrarbericht2012.bayern.de/politikstrategien/index.html*

Brunner, Helmut: Menschen gewinnen, Chancen nutzen, bäuerlich bleiben. Regierungserklärung von Staatsminister Brunner am 18. April 2012 im Bayerischen Landtag, München

Carmanns, Richard: Persönliche Mitteilung, 2013

Emmerling, Reiner, Jörg Dodenhoff, Dieter Krogmeier: Genetische Trends für Fleckvieh in Bayern. Besamungsinformationstagung am 27.11.2012, Paulushofen

Jahresberichte des Landeskuratoriums der Erzeugerringe für tierische Veredelungswirtschaft in Bayern e.V. 1982, 1992, 2002, 2012, München

Kayser, Maike, Achim Spiller: Massentierhaltung: Was denkt die Bevölkerung? Ergebnisse einer Studie. ASGHerbsttagung am 11.11.2011, Göttingen

Milchreports der Landesanstalt für Landwirtschaft, Institut für Agrarökonomie, 2004, 2006, 2008, 2010, 2011, München

Qualifood: *http://www.qualifood.de/*

Steininger, Franz, Birgit Fürst-Waltl, Christa Egger-Danner: Welche Anforderungen stellen die Züchter an die Kühe? Seminar „Die beste Kuh für's Gras am 21.03.2013, Salzburg

Zeiler, Eva: ProGesund – Rindermonitoring in Bayern. Auftaktveranstaltung am 08.11.2012, München