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Welfare In Dairy Cows - Evaluation Indicators

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Abstract

Sustainability, animal welfare, environmental and climate concerns and awareness of social responsibility towards the community have increased consumers interest in knowing how, where and by whom food is produced and handled on its way from the farm to the table. This constitutes a business opportunity for farmers as a growing number of consumers want to buy food, produced locally or regionally directly or under farm certification schemes whereby acceptable animal welfare conditions play often an important role. Farming systems for dairy cows, including housing and management conditions, are important factors affecting their health and other aspects of their welfare, partly through housing and equipment and partly through management and handling practices.

Importance of European Food Safety Authority (EFSA)

The panel on Animal Health and Animal Welfare (AHAW) is a scientific advice on all aspects of animal diseases and welfare of food producing-animals during breeding, rearing, transportation and slaughter. Analysis of the impact that the conditions and treatment of animals can have on both animal and human health. Animal welfare is an important part of EFSA's remit. The safety of the food chain is indirectly affected by the welfare of animals, particularly those farmed for food production, due to the close links between animal welfare, animal health and food-borne diseases [1,2].

The AHAW Panel has published five scientific opinions and a scientific report on the overall effects of the most relevant farming systems on the welfare of dairy cows and related diseases, assessing the potential impacts of housing, feeding, management and genetic selection [3]. Due to the wealth of data, the experts subdivided the risk assessments into four areas:

a. Metabolic and reproductive disorders.

b. Udder disorders.

c. Leg and locomotion problems.

d. Behavioural disorders, fear and pain.

Following a request from the European Commission, the AHAW Panel was asked to deliver the first scientific opinion on the welfare of dairy cows, in july 2009 considering whether current farming and husbandry systems comply with the requirements of and welfare of dairy cows from the pathological, zootechnical, physiological and behavioural points of view [4-6]. Later in January 2012 published a new scientific report on welfare in dairy cows, which was one of the most important to increase the monitoring of welfare in the farms: the use of animal-based measures to assess welfare of dairy cows. Other international organisations have also issued recommendations and guidelines concerning animal welfare, such as the World Organisation for Animal Health (OIE) and the Council of Europe. The EU is a signatory to the European Convention for the protection of animals kept for farming purposes, adopted by the Council of Europe [7].

Indicators of Welfare in Dairy Cows

The study of useful variables for evaluating animal welfare in dairy herds has increased considerably in the last years, and a number of indicators are now available which are well documented for being included in animal welfare protocols. However, the protocols that have been proposed and applied until now are costly and difficult to implement, and are starting to be evaluated. There is consensus in the reliability of measurements based directly on the animal as useful indicators, such as body condition, foot diseases, mastitis and other more general indicators, such as infertility and mortality rates obtained from records of dairy farms that can be studied under our production conditions [8].

In order to identify appropriate indicators which address the most important animal welfare problems known from practice, its very important have selected indicators for assessing animal

welfare with regard to reliability, validity and practicability. In animal welfare legislation as well as agricultural practice, mainly resource- and management-based animal welfare indicators have been used so far. These describe the conditions, e. g. the space available and the management, which are expected to safeguard animal welfare. However, such resource- and management-based indicators only allow indirect conclusions to be drawn on how well the animals may fare under these conditions. With the animal-based indicators required in the self-assessment system, on the other hand, the behaviour/health of the animals is recorded directly, so that direct conclusions about their welfare can be drawn. EFSA assessed the welfare risks related to the most commonly used and specialised dairy cows farming systems, integrating the use of animal-based measures to assess their consequences (Table 1).

Table 1: Indicators for the assessment of potential animal welfare problems in dairy cattle.

Potential Animal Welfare Problems	Indicator	Methodology (author)
Mastitis	Somatic cell count and hygiene score	Cook [1]
Lameness	Lameness prevalence	Thomsen et al. [2]
Poor nutritional condition and metabolic disorders	Body condition score and Fat-protein quotient of the milk	Ferguson et al. [3]
External injuries	Hock lesions	Regula et al. [4]
Udder health	Teat hyperkeratosis	Neijenhuis et al. [5]
Restricted resting comfort	Rising behaviour	Wemelsfelder et al. [6]
Human-animal relationship	Avoidance distance	Waiblinger et al. [7]
Inadequate water supply	Water availability (quantitative)	

The livestock keeper should benefit from the on-farm self-assessment. To be able to use the results effectively for planning and implementing improvement measures, the single indicators should not just be assessed, but instead be integrated into more comprehensive management aids. The sets of indicators should therefore also be applied as a whole as far as possible, as with each missing indicator, the informative content is reduced and at the same time the risk increases that animal welfare problems are not recognised. The use of behavioral indicators, health and management in the evaluation of welfare in cows milk is a very valuable tool, considering the difficulty of using physiological and immunological indicators, or drawbacks, such as costs.

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