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## International cooperation in animal welfare: the Welfare Quality® project

Harry J Blokhuis<sup>1,2</sup>

Address: <sup>1</sup>Swedish University of Agricultural Sciences, P.O.Box 7038, 750 07 Uppsala, Sweden and <sup>2</sup>Animal Sciences Group, Wageningen UR, P.O.Box 65, 8200 AB Lelystad, The Netherlands

Email: Harry J Blokhuis - Harry.Blokhuis@hmh.slu.se

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### Introduction

Consumers' perception of food quality is not only determined by its overall nature and safety but also by the welfare status of the animal from which it was produced. In other words, animal welfare is an important attribute of an overall 'food quality concept'. Recent surveys carried out by the European Commission (e.g. [1,2]) as well as studies within Welfare Quality®, confirm that animal welfare is an issue of considerable significance for European consumers and that European citizens show a strong commitment to animal welfare.

Consumers' concern and the apparent demand for information on animal welfare was the starting point of an EU funded project – Welfare Quality® [3]. This project started in 2004 and became the largest piece of integrated research work yet carried out in animal welfare in Europe. The Welfare Quality® project is a partnership of 40 institutions in Europe and, since 2006, four in Latin America. The partners are based in 13 European countries and four Latin American (Uruguay, Brazil, Chile and Mexico). The present paper describes the rationale, objectives and approach of Welfare Quality®

Although the originally formulated goals have evolved as results emerged and as opportunities arose, the main aims still stand:

- To develop practical strategies/measures to improve animal welfare,

- To develop a protocol for the assessment of animal welfare on-farm and at slaughter,

- To develop a protocol to translate assessment data on animal welfare into product information,

- To integrate and interrelate the most appropriate specialist expertise in the multidisciplinary field of animal welfare in Europe.

Although countries outside Europe are involved, obviously this EU funded project mainly focuses on the European situation.

From the start, Welfare Quality® took on board the results from a sociological study carried out in Europe that included an analysis of consumers' reluctance to purchase animal friendly products [4,5]. This study revealed that an important reason is the lack of transparent, reliable and easily understandable information about the way in which animal-based food products are actually produced. Furthermore, worldwide marketing strategies "confirm that producers and retailers today are ready to apply new criteria so as to provide consumers with extra value" [6].

The Welfare Quality® project therefore set out to develop scientifically based tools to measure animal welfare and to convert these measures into accessible and understandable information.

Another major thrust of this project is to improve the welfare status of farm animals through the development and implementation of practicable, knowledge based, species-specific remedial strategies. Moreover, the welfare assessment systems developed in the present project can be used to identify strengths and weaknesses in animal husbandry systems and/or particular genotypes, to guide and monitor future remedial developments (e.g. new husbandry systems or breeding programmes that enable production of high quality, high welfare status food products), and to inform legislative initiatives.

Animal welfare science is well developed in many countries in Europe and elsewhere. Welfare is multidimensional and it cannot be measured directly, rather it is inferred from external parameters. Therefore, welfare science is by definition multi-disciplinary [7], furthermore a variety of methodologies may be applied within disciplines (e.g. [8-11]). For these reasons, it is essential that we build on international collaboration in the broad field of animal welfare and that we integrate and interrelate the most appropriate specialist expertise in order to develop, refine, standardise and intercalibrate welfare measures and to identify and validate practical remedial measures.

### Addressing consumer concerns

A thorough knowledge of consumer concerns and behaviour is of paramount importance in defining the kind of information that they want about the final products and in developing effective strategies for communicating welfare standards to the public. Transparency should be promoted by generating an intensified dialogue with all factions of society on welfare issues and the associated effects on food quality and safety, by providing appropriate information on animal products and by leading to farming systems that offer guarantees about welfare issues

and production conditions c.f. [12]. Clearly, it is also essential to analyse the marketing requirements of retailers as well as producers' aspirations and the obstacles they face.

In Welfare Quality® we aim to address welfare concerns and to allow clear communication about the animals' quality of life and profiling of products. The latter is obviously essential in order to connect animal husbandry practices to informed animal product presentation and purchasing. In a truly integrated effort Welfare Quality® combined analyses of consumer/citizen perceptions and attitudes with existing knowledge from animal welfare science and thereby identified 12 areas of concern that should be adequately covered in the measurement systems [13]. These are presented in Table 1 as welfare criteria, where the direction for maximising welfare is indicated. Each criterion covers a separate aspect of good animal welfare and the list was chosen to encompass all potential areas of concern while at the same time keeping the total number of criteria to a minimum. To further reduce the number of items and ease the understanding, we group them into 4 classes, called principles in the table, corresponding to the questions:

- Are the animals properly fed and supplied with water?
- Are the animals properly housed?
- Are the animals healthy?
- Does the behaviour of the animals reflect optimised emotional states?

To investigate how animal welfare concerns are relevant for citizens whilst shopping for food and what kind of

**Table 1: Giving welfare principles and criteria (from Keeling and Veissier, 2005).**

Principles	Welfare criteria	
Good feeding	1.	Absence of prolonged hunger
	2.	Absence of prolonged thirst
Good housing	3.	Comfort around resting
	4.	Thermal comfort
	5.	Ease of Movement
Good health	6.	Absence of injuries
	7.	Absence of disease
	8.	Absence of pain induced by management procedures
Appropriate behaviour	9.	Expression of social behaviours
	10.	Expression of other behaviours
	11.	Good human-animal relationship
	12.	Absence of general fear

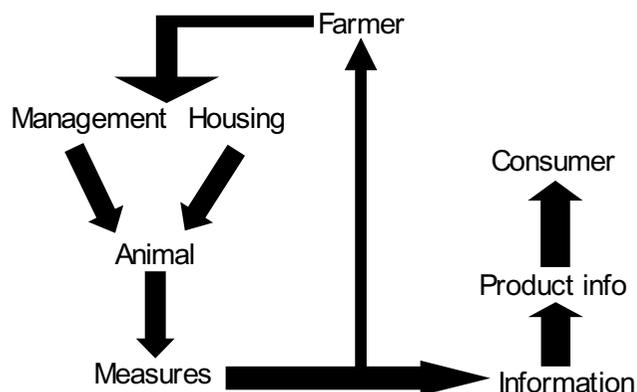
information is considered relevant for assessing the 'animal friendliness' of the products available on the market focus groups interviews with consumers were carried out in seven study countries (Italy, France, Hungary, UK, the Netherlands, Norway and Sweden) [14]. The results showed that the participants in the focus group discussions reacted favourably to the 'experts' list of areas of concerns in the table above. Most participants identified more commonalities than differences between their understanding and the scientific approach to what is important in defining the welfare of animals.

### Welfare assessment

At present, some (prototype) monitoring systems have been developed in Europe. These include the animal welfare index TGI35L in Austria [15] and the related TGI200 in Germany [16], the ethical account in Denmark [17], Freedom Food schemes in the United Kingdom (Royal Society for the Prevention of Cruelty to Animals), a decision support system for overall welfare assessment of sows in The Netherlands [18], and specific tools for dairy cows in France [19] and Italy [20]. Most of these systems are largely based on observations of the environment, i.e., design measures presumed to affect animal welfare, and on selected observations of the animals, i.e., performance measures that are assumed to reveal the animals' internal state. However, the links between specific measures and the animals' welfare status are not always clearly understood. Furthermore, a single score is often calculated for all the welfare dimensions that were measured. This incurs a high risk that the 'welfare scores' attributed to bad aspects may be moderated by others that are satisfactory (see discussion in [21,19]). Finally, the weight attributed to the different dimensions of welfare can vary between assessors.

Therefore, one of the main thrusts of the Welfare Quality® project is to develop sets of measures that are based on assessing the actual welfare state of the animals in terms of their behaviour, health, physiology, performance and disease-resistance. Such animal-based measures include the effects of variations in the way the farming system is managed (role of the farmer) as well as specific system-animal interactions (Figure 1). The measures address all of the above-mentioned concerns.

Design measures are also included so that causes of poor welfare can be identified and remedial measures proposed (feed-back to farmer). For each of the different species about 20–30 measures were selected for inclusion in the first pilot systems that will be applied in practice this year. These measures had already been analysed within Welfare Quality® for validity, repeatability and feasibility and, whenever, necessary, additional research was carried out. On the basis of this year's on-farm trials, further selection



**Figure 1**

Diagrammatic representation of the measuring and information systems (adapted from Blokhuis et al. 2003).

of parameters and fine-tuning of the systems will take place.

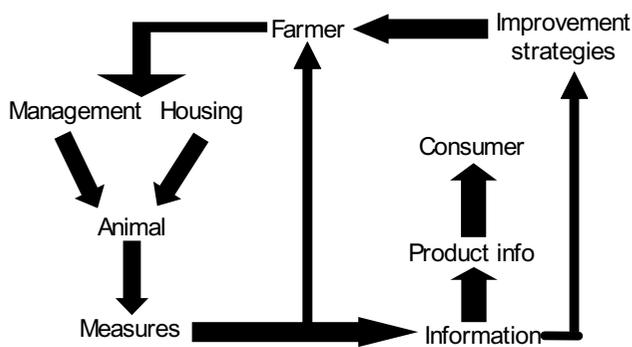
### Welfare improvement strategies

In the conception phase of Welfare Quality® it was recognised that a large European effort in the area of animal welfare should also include research designed to identify practical ways of solving some of the main welfare problems in current animal production. Therefore, we initiated appropriate studies in important areas like handling stress, injurious behaviours, lameness, temperament etc. and some very relevant and interesting results are already emerging. The practical improvement strategies that these studies are generating will provide valuable support to farmers and the animal industry in their efforts to improve animal welfare. Since these studies are an integrated part of the Welfare Quality® approach they will also inform and be guided by the information emanating from the development of our welfare monitoring systems (Figure 2).

Thus, the implementation of welfare improvement strategies and reliable monitoring systems will support the development of genotypes and of husbandry systems and practices that offer different facets of animal welfare, thus contributing to the diversification and societal sustainability of farm animal production in Europe.

### Concluding remarks

Clearly, the ultimate use and implementation of the monitoring and information systems as well as the improvement strategies are dependent upon many different actors, drivers, trends and opportunities, such as the producer, breeding, retail and food service industries, citizen's engagement, NGOs activities, political developments at EU or global levels, and market developments. Therefore,



**Figure 2**  
Diagram illustrating integration of improvement strategies in the Welfare Quality® approach (adapted from Blokhuis et al. 2003).

the Welfare Quality® project is also developing a wide range of activities to support the implementation of the results. These include stakeholder workshops and demonstration activities that will take place during the last two years of the project. Our involvement of a number of stakeholders and independent academics in advisory roles (Advisory Committee, Scientific Board) helps ensure that these activities are timely, relevant, effective and widely acceptable.

Recently, different companies in animal product chains are exploring the application of animal friendly husbandry systems, management practices and breeding strategies, the implementation of monitoring and certification schemes, and the communication of the associated information to the consumer (e.g. communication via branding and labelling). This movement obviously links to the core activities of Welfare Quality® and we are therefore attempting to create opportunities (e.g. Stakeholder Workshops, European Animal Welfare Platform,) to support a bilateral exchange of knowledge with these stakeholders that would effectively extend the relevance and impact of Welfare Quality® research, results and recommendations in industrial food supply chains. Of course, such dialogue can also benefit citizens, government and industry by strengthening the sustainability and competitiveness of European agriculture. We hope to intensify these efforts through support from the EU seventh Framework Programme for Research and Technological Development.

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