WELFUR MINK

- STATUS AND PERSPECTIVES

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WelFur Mink

In 2009 the European Fur Breeders' Association initiated the "WelFur" project with the purpose of developing a welfare assessment protocol for mink and fox farms, following the standards developed within the framework of the EU Welfare Quality® project. The assessment is based on four welfare principles: "Good feeding", "Good housing", "Good health" and "Appropriate behaviour" including 12 underlying criteria and 22 welfare measurements -to be measured on-farm in three different seasons. WelFur mink has been tested in 12 countries and based on this the protocol is adjusted and optimized. Research efforts focus on the optimization of WelFur without reducing the quality. Electronic data collection gathering ensures that breeders are informed of the results immediately following the assessment. Like other production data these results may be used for production planning purposes in consultation with advisors and veterinarians.

Background

During the last decades research efforts have focused on how to accurately measure production animal welfare; partly in order to quantify the debate on animal welfare, and partly to assess how different management routines and production systems affect animal welfare. Research results are increasingly used in relation to legislation and authority control of animal welfare as well as ensuring that farmers respect rules and regulations. Further, research results are used in the development of systems for animal welfare assessment.

A welfare assessment describes the welfare at farm-level by means of a series of measurements; i.e. factors that may be measured or assessed and reflect animal welfare. Just like legislation at the time, the first welfare assessments were based on housing system design in order to avoid harmful conditions. Today, welfare assessments include resources provided in the form of housing systems and management routines as well as the ways in which the animals react in the form of health and behaviour (Figure 1). At the same time the assessment includes the animals' positive emotions/experiences instead of simply measuring negative responses. Several research institutions have developed various protocols to assess welfare, however with different purposes. The European Welfare Quality® project ended in 2009. Based on a common foundation the project developed protocols for welfare assessments within various parts of cattle, pig and poultry production. The Welfare Quality® project was financed via the EU 6th Framework Programme "Food Quality and Food Safety", and, therefore, fur animals were not included.
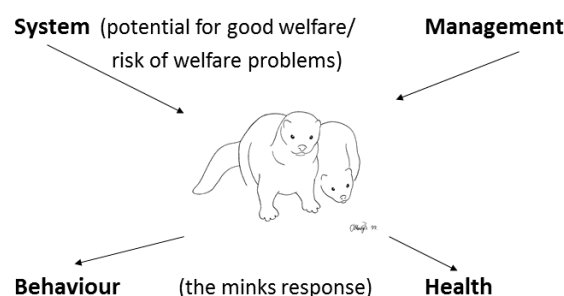

Figure 1 – two types of – and four sources of – information when assessing welfare in mink

Welfare Quality® has set the standard for assessing animal welfare at farm-level in Europe. Assessments are based on one-day observations at the farm to illustrate the four superior welfare principles "Good feeding", "Good housing", "Good health" and "Appropriate behaviour". Within these principles 12 specific animal welfare criteria have been defined; each including a number of registrations of animals, farm management or production systems.

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Development of WelFur protocol for mink

The WelFur protocols for welfare assessment in mink and fox farms were developed by scientists from six countries in the period from 2009 to 2014, and are based on the Welfare Quality® concept (Møller et al., 2015). The entire process was supervised by a group of highly recognized scientists, including the Welfare Quality® project manager, in order to ensure that fur animal welfare was assessed according

to the same principles and standards as applied for other production animals.

Welfare assessments include registrations from three different seasons in a production year – (season 1: Adult breeders during the winter period; Season 2: Adults and kits in the reproduction period; Season 3: Adults and juveniles in the growth period) – to cover the entire life cycle of mink and to achieve a comprehensive assessment of the welfare within the production system (Figure 2). During each season the animals are exposed to major changes, and health challenges vary within the seasons. In order to reduce this variation the three WelFur observation periods are limited to last from 6 to 8 weeks. The observation periods are as follows: 1. Breeding animals in January-February; 2. Suckling period in May-June, and 3: Growth period from late September and until pelting (Figure 2).
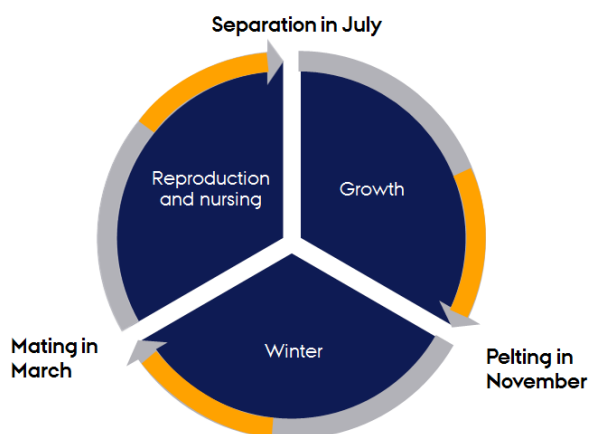

Figure 2 – the three observation periods in Wel-Fur-Mink are marked with orange within the three production seasons "Winter", "Reproduction and nursing" and "Growth".

Individual mink farm welfare is assessed according to 22 welfare parameters, covering the 12 welfare criteria that constitute the four welfare principles of Welfare Quality® (Table 1). Measurements are animal-based as far as possible; i.e. they are used to measure animal behaviour or health. If this it is not possible, resource-based measurements are applied instead; i.e. registration of housing systems or management routines.

The measurements have been selected based on an examination of previous research and from thorough discussions between scientists within the area. All measurements have been assessed in relation to validity (do the measurements reflect mink welfare), reliability (are measurements replicable – within and between observers) and feasibility (can they be applied in practice and at reasonable costs).

Assessment of animal-based and resource-based measurements is based on a representative sample of animals on the farm, and the welfare of the sample animals is considered as an estimate for the entire farm. A representative sample consists of 120 cages (20 sections of 6 cages each) during the winter and suckling periods; and 90 cages (15 sections of 6 cages each) during the growth period.

Going from measurements to a complete assessment

The final welfare assessment at farm-level is based on the calculation of several welfare scores from the on-farm registrations. The assessment is a stepwise weighted sum of scores between the levels; i.e. from 22 measurements ⟶ 12 criteria ⟶ 4 principles ⟶ 1 overall assessment. This weighted sum is based on an expert panel assessment of the welfare measurements and their importance to animal welfare during various periods as well as the Welfare Quality ® guidelines regarding the extent to which good welfare in one area may compensate for poor welfare in another area.

In practice, the weighted sum is achieved by calculating a score between 0 and 100 (100 being the best achievable and 50 a neutral value indicating welfare that is neither good nor poor) for each of the 12 criteria based on on-farm registrations. Next, these 12 scores are combined to produce a value between 0 and 100 for each of the 4 principles and this will eventually result in a classification within one of the four welfare categories. The categories and threshold values have been defined as follows: Best current practice (animal welfare score at highest level with values ranging from 80-100), Good current practice (animal welfare scores ranging from 55-80), Acceptable current practice (ani-

mal welfare score is above or equal to minimum requirements ranging from 20-55) and Unacceptable current practice (animal welfare score is low and considered unacceptable).

The categories are not based on average scores for each principle. Thus, a high score in relation to one principle will only to a lesser extent compensate for a very low score in relation to other principles. A farm is classified in the category "Best current practice" if it scores more than 55 on all principles and more than 80 on two of them. Likewise, a farm is considered to correspond to "Good current practice" if it scores more than 20 on all principles and more than 55 on two of them. A farm in the category "Acceptable current practice" scores more than 10 on all principles and more than 20 on three principles. Farms that do not achieve these scores are considered to correspond to "Unacceptable current practice".

Research and testing

The WelFur assessment protocol has been tested in recent years to ensure that the assessment procedure is feasible and practical as well as robust and reliable in relation to various farm conditions and different countries. While developing the protocol it was simultaneously tested in 9 Danish farms in 2011. The WelFur protocol was subsequently tested in 14 Danish farms in 2012-13, in 39 Finnish farms in 2012-14, and in 18 Danish farms in 2014-15. Testing resulted in e.g. an adjustment of individual measurement assessments. The results from the present testing have also been used in studies investigating the importance of the actual observation date to the overall assessment; thus, taking this into account if necessary. Finally, in 2015-16 the WelFur protocol was tested in 27 mink farms in 10 European countries in order to test the assessment under different climatic conditions and at farms in countries with different mink production traditions.

Among other results, these tests demonstrated certain challenges in relation to achieving the necessary information from the breeders, e.g. in relation to representative samples. Therefore, a new method has been developed, allowing samples to be taken without previous information. The WelFur as-

sessments were feasible in all countries; however, in relation to some test procedures certain challenges existed, e.g. cage design. Based on experiences from various tests the WelFur assessment protocol is being optimized.

Currently, more projects are carried out at Aarhus University with the purpose of achieving the knowledge necessary to make these optimizations. The examinations e.g. include assessments of animal temperament, when animals are housed in groups, the impact of the observer's posture as well as various conditions in relation to cage design and arrangement. Research is also carried out with a view to optimizing the protocol and the testing procedures in order to make welfare assessments on individual farms less time-consuming without reducing assessment validity. Finally, additional research efforts focus on examining whether some of the more time-consuming measurements may, in time, be replaced by new and less time-consuming measurements.

Perspectives

The major part of the tested farms was placed in the category "Good current practice", some in the "Best current practice" category and a few in "Acceptable current practice" category. Thus, WelFur is able to distinguish between animal welfare levels in different farms. However, there may be significant variation in the scores – in relation to the 4 principles, 12 criteria and 22 measurements – between farms allocated to the same category. This means that there is a huge difference between the areas that the individual farms should work with in order to achieve a higher score or be allocated to a better category at the next assessment. It is, therefore, very important for the farmers to know if they should increase focus on e.g. mortality rates or animal temperament. In order for the individual farmer to know why his farm was allocated to a certain assessment category, he should be given access to the details of the welfare assessment after the visit. A tablet solution for on-farm recording of WelFur registrations has been developed and allows the farmer to receive a copy of the results immediately after the assessment. The sections observed as part of the WelFur assessment are marked with yellow plastic cards

allowing the farmer to see for himself whether the cages observed gave rise to comments. This ensures complete transparency as to the basis of the assessment. Once the final results for the farm in question are available, the individual farmer can consider which production areas should be in focus and also – in cooperation with his advisor – establish goals and plan efforts in order to achieve the goals. Thus, the WelFur assessment results will become part of the farm management together with – and interacting with – all other types of information used by fur breeders to take care of their animals in the best possible way.

In relation to WelFur, Danish fur breeders are well equipped; partly, because they have a long tradition for production management based on actual knowledge of the farm and the animals; and partly because they have well established extension service in the form of advisors and veterinarians who know the farm. In countries without such traditions, national advisors will be educated to assist the farmers with interpretation of results and how to improve when needed.

Table 1. Welfare principles, criteria and measurements used in WelFur Mink

1. Good feeding	1. Absence of prolonged hunger	Are mink too thin?
	2. Absence of prolonged thirst	Do all mink have access to drinking water? Do drinking nipples work and are they clean?
2. Good housing	3. Comfort around nesting	Do all mink have access to a nest box? Are nest boxes dry, clean, no sharp edges and no fleas?
	4. Thermal comfort	Are nest boxes protected from wind, direct sun and heat? Are nest boxes isolated, exposed to draught and is bedding material available?
	5. Ease of movement	Do all mink have sufficient available space for movement?
3. Good health	6. Absence of injuries	Do mink have skin lesions or injuries to the body?
	7. Absence of disease	How many mink died in the period? Are there any sick mink? Mink with diarrhoea or impaired movement?
	8. Absence of pain induced by management procedures	Efficient methods of killing mink at pelting or in case of disease or injury?
4. Appropriate behavior	9. Expression of social behaviours	Are mink housed individually, in pairs or groups in the growth season? What are age and procedures at weaning?
	10. Expression of other behaviours	Do mink display stereotypic behaviour? Are mink given cage enrichment? Do they display fur chewing?
	11. Good human-animal relationship	Frequency and duration of handling?
	12. Positive emotional state	Are the mink fearful or curious?

DCA – Danish Centre for Food and Agriculture is the scientific approach to agricultural and food research at Aarhus University (AU). The centre's main tasks include knowledge exchange, research-based advisory services and interaction with authorities, organizations and companies.

The centre coordinates knowledge exchange and research-based advice in relation to the departments in which food and agriculture are either main research areas or constitute major focus areas:

Department of Animal Science
Department of Food Science
Department of Agroecology
Department of Engineering
Department of Molecular Biology and Genetics

In addition, DCA may include other AU units that carry out relevant research within this area.

Epilogue

From January 2017, fur animal welfare assessment according to the WelFur protocol will be available for all European fur breeders. In this connection further information on WelFur is needed. At the annual thematic meeting on current mink research at Aarhus University, held at research center Foulum on 20 September 2016, a presentation on the research status was given. We have made a reprint of the material from the thematic meeting in order to make this information available to all interested parties.

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Further information in the implementation of WelFur is found at Fur Europe - http://www.fureurope.eu/fur-policies/welfur/ – as well as national fur breeder organizations.

References

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