



Newsletter 7– September 2019

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From the WQN Coordinator...

Dear Partners,

The final meeting of the Welfare Quality project was held here in Uppsala in October 2009, already 10 years ago. Since that time the Welfare Quality Network remained active (www.welfarequalitynetwork.net) and, among other activities, every year it organised a seminar to discuss progress with welfare assessment in line with the WQ approach.

At this year’s seminar (2019) we would like to celebrate 10th anniversary of the WQNetwork. The programme is not finalised yet but there will be very interesting contributions from stakeholders (e.g. Eurogroup for Animals/RSPCA, Swedish Board of Agriculture, Lidl, and various companies) as well as academics (e.g. from SLU, IRTA, Cardiff University, INRA, Wageningen UR).

The seminar will be held on **22nd of October in Uppsala** and takes place at the SLU Campus at Ultuna (Ulls väg 26, 756 51 Uppsala, see photo), 9.00 a.m. - 4.30 p.m.

Please register by email (harry.blokhuis@slu.se) and also let me know if you want to present something.

Since our seminars are ‘open’ please invite interested people in your networks.

Looking forward to seeing you in Uppsala!

- *Harry Blokhuis*

Coordinator of the Welfare Quality Network



IRTA becomes Scheme Owner for Animal Welfare Certification “based on Welfare Quality”

In 2013 different Certification companies in Spain consulted IRTA about the possibility of jointly develop a common Animal Welfare Certification for livestock, motivated by several requests by their clients. The researchers at the Animal Welfare Programme at IRTA begun what has resulted in an extremely successful pilot project with AENOR (Spanish Association for Normalization and Certification). Within this collaboration, a first label was granted in 2014 with the application of the protocol for dairy, continuing in 2015 with beef protocol in farm and slaughterhouse and the swine protocol in slaughterhouse. Finally, between 2016 and 2018 the rest of the protocols were set up and over 50 Spanish companies have received the Animal Welfare Certification “based on Welfare Quality®” since. The certification includes different species and actors along the whole value chain, farms, slaughterhouses and retailers, in order to finally reach the consumer.

Since 2018, the certification promoted by AENOR has had increasing relevance in the sector with more and more presence in media. The dairy sector has continued being the most prominent. One of the most popular campaigns was conducted by Calidad Pascual, one of the leading companies in the dairy sector. Having certified its 348 farms, the communication campaign was widely covered in mass media with a prominent advertising campaign, helping to disseminate the Animal Welfare Certification as well as the Welfare Quality® principles and criteria. Besides the dairy sector, the certification has also gained relevance within the swine sector. For instance, one of the greatest integrated swine companies got the certification for the whole value chain, from its 600 farms to the processing plants and retailing outlets.

Notwithstanding the high professionalism of farmers and practitioners, 2018 has been a harsh year for them. Few (but widely publicised cases) have appeared in the media showing inhumane practices on farms and

slaughterhouses that severely damaged the image of the livestock industry in Spain. Motivated by a strong desire to contribute to farm sustainability and fairness, it is undoubtedly that Animal Welfare is getting every time more demanded by consumers and retailers. The increasing demand for the Animal Welfare Certification led by IRTA and AENOR has forced to redesign the certification in order to be able to meet it. It is with this perspective that IRTA decided to become Scheme Owner for the Animal Welfare Certification “based on Welfare Quality®”.



The 4 principles and 12 criteria of Welfare Quality® have been widely used by Calidad Pascual to communicate the benefits of the Animal Welfare Certification endorsed by AENOR.

The new Scheme opens the door to other certifying bodies to operate within the Scheme Owner under the same certification scheme. In summary, in this new scenario each certification scheme will have its own qualified auditors that will conduct the animal welfare evaluations according to the protocols based on Welfare Quality®. Meanwhile, IRTA will focus on the supervision of the auditors by carrying out periodic visits to check their performance. The certification so far includes modules for dairy, beef cattle, sows, piglets, growing pigs, chickens, laying hens, bucks/does and growing rabbits at farms, as well as beef cattle, pigs, chickens, turkeys and sheep/goats at slaughterhouse.

To regulate this and other aspects, the certification scheme details all the conditions required to obtain the certification, such as the audit frequency, training of the auditors, traceability to achieve product labelling, supervision of the auditor's performance by IRTA, and many others. This common regulation is aimed to uniform criteria among all certifying bodies and enable the certification based on Welfare Quality to be implemented more widely.

A few indicators make us confident that this certification is going to attract more producers. During last year and thanks to the invaluable assistance of Dr. Christoph Winckler (BOKU, Austria) and Dr. Andy Butterworth (Bristol University, UK) 120 prospective auditors have been successfully trained for carrying out farm inspections according to the new protocols (35 in swine, 9 in beef cattle, 40 in dairy and 24 in poultry), whereas 45 joined the courses on slaughterhouse modules (12 in swine, 9 in beef cattle and 24 in poultry). Among the total 165 participants, there were several personnel from certifying bodies, which has enabled us to promote the adoption of the Welfare Quality criteria and measures in their Certification Schemes in 10 cases.

Iñigo Cucurull and Antoni Dalmau,

IRTA, Spain.



News from the partners



At ISA Lille (Hélène Leruste and myself), we are currently working with the French veal industry on the implementation of the WQ protocol of veal calves on French farms. Some simplification will be applied (in order to reduce the number of measures performed on farms) with the idea to have an audit of a maximum of 2,5 hours. The aim is to have a tool realised by technicians that measures the welfare of veal calves and to give appropriate advice to farmers based on the data obtained for each measure with alert and alarm thresholds, but there will be no aggregation process or final scoring (such as 0 to 100). The study is funded by the French veal product board and a total of 10 French integrators and production groups are involved. The first stage of the study consists in fine tuning a simplified audit and test the whole on 50 farms in March, April and June 2019.

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Annual Seminar 2018 -Copenhagen University



The Annual Workshop of the Welfare Quality Network was organised by Bjorn Forkman and held at Copenhagen University on the 11th of December 2018. It preceded the General Assembly which was held on the 12th. The seminar was well attended and thoroughly enjoyed by the participants. The presentations were sub-divided into two main sessions chaired by Bjorn Forkman and Harry Blokhuis, respectively. The talks were wide ranging, entertaining and informative as evidenced by the abstracts here below. They covered several species and focused largely on the philosophy, methodologies and implementation of welfare assessment systems as well as some innovative measures.

Bryan Jones

Abstracts

Welfare Quality audits in Finland

Essi Wallenius, Armenta Benessi Oy, Finland

Two Finnish dairy companies engaged in Welfare Quality (later WQ) certification process between years 2016 and 2017. One of the requirements of the certification process was that all farms are to be audited using the WQ protocol to an acceptable level as an entry level requirement. A total of 235 farms have now been audited in Finland using the WQ-protocol and both dairies have reached the required level and have gained the WQ-certification.

Approximately third of the audited farms gained an acceptable result, 65 % gained an enhanced score and 1,4 % gained an excellent score. The highest principle score on average was Good feeding and the measurement of absence of prolonged hunger was the best index score scoring 94,5 points on average. The lowest principle score was Good housing, which is explained by the lowest index score being comfort around resting, which scored 39,4 points on average. Typically farms aimed to keep their cows perfectly clean by pushing cows back in stalls with the positioning of for example front rails or ties. With such restrictive stall design cows typically stay clean but face difficulties lying down, getting up and often lay outside the supposed lying area. The average lie down time was 6,2 seconds which is right at the serious problem limit. Lying comfort was also the most common cause of mild and serious skin lesions, which were very common. Other than skin injuries the farms scored high points in index scores within the Good health principle score.

Appropriate behaviour measurements were highly varying. Pasture access is rare on loose housed farms in Finland where as in tie-stall barns the legal requirement for pasture access is a minimum of 60 days per year. Agonistic behaviour was very rare and hence social behaviour points were on average 90 points. QBA points showed that fearfulness is rather rare on Finnish farms and mostly cows behaved in a calm and relaxed manner. On average 64 % of cows let the auditor touch them in the human-animal relationship measurement.

All farms have been given feedback regarding the auditing. The farms will be re-audited depending on their results; acceptable farms after 15 months and enhanced or excellent farms after 27 months.

Development of a scheme owner based on Welfare Quality protocols

Antoni Dalmau Bueno
IRTA, Spain

Since 2014, IRTA is using the Welfare Quality® protocols for certification purposes. In a pilot project, the research institute collaborated with a certification company to create a certification schema. The first company in being certified was a dairy cattle company, after that a beef cattle company and then pig and cattle slaughterhouse were certified in 2015. In 2016 and 2017, the interest for

the certificate increased dramatically and in 2018, it arrived to more than 60 companies, representing more than 1300 facilities. Until May 2018, the auditors were technicians of IRTA properly trained with the Welfare Quality Protocols, but then own auditors of the certification company were trained with the protocols for pigs and dairy cattle (with the official certificate of competence according to the Welfare Quality Network) and technicians of IRTA were just supervisors. This figure will be used in 2019 to open the certification to more companies. At the moment, 6 different certification companies are waiting to be habilitated for using Welfare Quality protocols for certification. To do it with guarantees a scheme owner is being created. This means that all the certification companies will have a contract with IRTA to be supervised. As part of this supervision, IRTA will ask all the auditors to be formerly trained with the Welfare Quality Protocols. In addition, the first visit to a farm or slaughterhouse with a new species will be done under the supervision of a technician of IRTA. All the reports after each audit will be sent and checked by IRTA and any farm/slaughterhouse could be re-assessed by IRTA. If the result of IRTA does not coincide with those of the auditor, her/his certificate of competence will be revoked.

Development of possible alternative measures under the principle ‘appropriate behaviour’ in the Welfare Quality® broiler protocol

Ingrid de Jong, Johan van Riel, Thea van Niekerk

Wageningen Livestock Research, Wageningen University and Research, The Netherlands

There is debate on the validity of behavioural measures within the Welfare Quality® broiler protocol. The Qualitative Behaviour Assessment (QBA) as a measure of ‘positive emotional state’ has not been validated for broilers, and assessors find it often difficult to assign descriptions of emotional states to broiler flocks. The touch test, assessing the ‘human-animal relationship’, turned out to be related to locomotion score. The aim of the current experiment was to (1) study whether simple behavioural measurements can be a suitable replacement of the QBA in the WQ broiler protocol, and (2) to study whether or not we could identify alternative measures of fear in broiler chickens. Here we report the results of (1)

and the methods of (2). With respect to (1), four existing data sets of scan sampling of behaviour in commercial flocks (fast and slower growing broilers) were analysed to determine whether or not a reduced set of observations could be defined that would be predictive of flock behaviour. Behaviours (‘active’ (sum of different behaviours), foraging, dustbathing, comfort behaviour) were analysed as dependent variables in a logistic regression model with binomial distribution. Different models were used, taking into account effects of observer, location and time of the day, and separately the effect of number of scans. Results showed that ‘active’ composed of walking, standing and foraging, gave the smallest observer effect. Scan effects were found for all behaviours, except for ‘active’ composed of standing, walking and running. Large effects of location (wall and centre) and time of the day were found, suggesting that these should be taken into account. Dustbathing, comfort and foraging behaviour had low frequencies, large variation and needed higher number of scans and/or longer habituation for a reliable outcome. It is therefore questionable if these behaviours would be useful for inclusion in the WQ protocol.

A reliable and more feasible indicator to evaluate stereotypies in sows

Irena Czycholl

Institute of Animal Breeding and Husbandry, Christian-Albrechts-University Kiel

The present study aimed at introducing a reliable and more feasible indicator to evaluate stereotypies in sows in comparison with the ‘Welfare Quality® animal welfare assessment protocol for sows and piglets’. Therefore, the indicators for the assessment of stereotypies of the Welfare Quality® protocol for sows and piglets were compared to the potential indicator ‘frothy saliva’ in an on-farm study on farrowing farms. The analysis included the correlation between indicators, their interobserver reliability and test-retest reliability. Therefore, Spearman’s rank correlation coefficient (RS), intraclass correlation coefficient (ICC), smallest detectable change (SDC) and limits of agreement (LoA) were used. As results, the potential indicator ‘frothy saliva’ showed an acceptable correlation with the most observed indicator sham chewing (RS 0.42), which was in turn correlated to

the indicator tongue rolling (RS 0.35). ‘Frothy saliva’ showed similar interobserver reliability as the indicators for the assessment of stereotypies, e.g. ‘frothy saliva’ (RS 0.90 ICC 0.93 SDC 0.16 LoA [-0.18;0.14]) and sham chewing (RS 0.96 ICC 0.94 SDC 0.11 LoA [-0.08;0.13]). Concerning its test-retest reliability, the results showed that the potential indicator ‘frothy saliva’ can be used to differentiate between farms (RS 0.61-0.87 ICC 0.74-0.91 SDC 0.20-0.35 LoA \in [-0.16;0.24]-[-0.46;0.25]), which matched the results of the indicators for the assessment of stereotypies, e.g. sham chewing (RS 0.81-0.93 ICC 0.80-0.91 SDC 0.16-0.23 LoA \in [-0.22;0.10]-[-0.24;0.21]). Sensitivity, specificity and regarding result parameters confirmed the usefulness of the potential indicator ‘frothy saliva’ on-farm (sensitivity 0.86, specificity 0.62, positive likelihood ratio 2.26, negative likelihood ratio 0.23). Concluding, the potential indicator ‘frothy saliva’ proved to be as reliable as the indicators for the assessment of stereotypies and demonstrated higher feasibility. Hence, the use of the potential indicator ‘frothy saliva’ is recommended to assess stereotypies in sows. Thereby, it could contribute to an improvement of the Welfare Quality® protocol for sows and piglets.

Statistical issues inherent to the selection procedure when subsampling

Matt Denwood
University of Copenhagen

It is essential to consider the statistical issues inherent to the selection procedure when subsampling individuals from a population in order to avoid potential bias in the resulting measurement. In the simplest setting, selection of individuals at random is a good way to avoid bias, but when individuals are clustered within groups then it is a more efficient use of time to sample groups rather than individuals at random. These groups may be further clustered into different sections within the farm, so care is needed to ensure that the unbiased nature of the final farm-level measurement is preserved when selecting groups. This important goal is not currently achieved if following the advice contained in the Welfare Quality Assessment protocol for pigs, as we illustrate using some pathological theoretical examples where there is a clear bias between the true measurement of interest and the distribution of sample statistics obtained using the WQ

protocol. A second relevant statistical consideration is that relating to precision, i.e. how best to quantify uncertainty around the final farm-level measurement. There is no standard way in which to quantify the standard error of the estimator resulting from such a complex sampling procedure, and the WQ protocol currently makes no mention of either ‘precision’ or ‘confidence’ in the final result. We propose some methods whereby confidence intervals might be generated for a resulting farm score. Taking into account this uncertainty is particularly important when the end goal is to grade or compare farms based on the sampled data.

A MOBILE APPLICATION FOR FARMERS TO SELF-ASSESS AND BENCHMARK THE WELFARE STATUS OF THEIR LIVESTOCK

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Monitoring animal welfare is useful both for farmers (to identify points of attention) and for consumers (to get reassurance about the welfare status of the farms from which they buy animal products). Therefore, a self-scan has been developed to allow poultry, pig and cattle farmers to assess animal welfare on their farm, using a mobile application.

Similar to the Welfare Quality© and KTBL Protocol, the scan predominantly includes animal-based measures. Parameters were carefully selected to ensure that the main welfare issues are covered and can be assessed for a limited but illustrative number of animals in a fairly short time-span. In addition, key questions on farm management, housing and production parameters are included to allow for tailor-made automated benchmarking with other, comparable farms.

Currently, self-scans are available for broilers, layers, sows and piglets, weaners, finishing pigs, lactating cows, dry cows and young stock. Within each animal category, a division is made based on type of housing/milking system. Farmers can scan different production groups at different time-slots.

The main challenge was to develop a scan which is feasible for a farmer to include in his farm management without compromising the value of the tool. If the self-scans are too laborious, their uptake by the sector will be limited. Therefore, scans were tested by farmers on multiple occasions.

By scanning and benchmarking animal welfare periodically, the farmer will be encouraged to take action to improve the identified points of attention, and will be able to monitor effects of measures taken over time.

Aggregating animal welfare indicators

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A central aim of animal welfare science is to be able to compare the effects of different ways of keeping, managing or treating animals based on welfare indicators. A system to aggregate the different indicators is therefore needed. However, developing such a system gives rise to serious challenges. Here, we focus specifically on the ethical aspects of this problem, taking as our starting point the ambitious efforts to set up an aggregation system within the project Welfare Quality® (WQ). We first consider the distinction between intra- and inter-individual aggregation. These are of a very different nature, with inter-individual aggregation potentially giving rise to much more serious ethical disagreement than intra-individual aggregation. Secondly, we look at the idea of aggregation with a focus on how to compare different levels and sorts of welfare problems. Here, we conclude that animal welfare should not be understood as a simple additive function of negative or positive states. We also conclude that there are significant differences in the

perceived validity and importance of different kinds of welfare indicators. Based on this, we evaluate how aggregation is undertaken in WQ. The main conclusion of this discussion is that the WQ system lacks transparency, allows important problems to be covered up, and has severe shortcomings when it comes to the role assigned to experts. These shortcomings may have serious consequences for animal welfare when the WQ scheme at farm or group level is applied. We conclude by suggesting ways to overcome some of these shortcomings.

Revision of the calculations for Criterion 'Absence of disease'

Romain Lardy, Isabelle Veissier

During the previous WQN meeting, we decided to revise the calculation of the criteria 'Absence of disease'. At present, each disease has a low influence on the criterion-score, e.g. if all animals are affected by one disease and not by the others the criterion-score is high. Moreover, some measures (e.g. percentage of mortality) have a much lower impact than trained experts expected (de Graaf et al., 2017; Graaf et al., 2018). The WQN proposed:

- To build a spline curve for each disease so that for each of them we obtain a score between 0 and 100,
- Then to attribute the worst disease-score to the criterion-score

We asked experts to give a score between 0 and 100 regarding the diseases considered in the Welfare Quality® protocol (2009): we asked them to score different thresholds (including the warning and alarm thresholds used presently in the protocol) and also to tell us what % would correspond to a 0. We tested this approach for dairy cows. We checked the impact of this new way to calculate the criterion-score on 491 farms (dataset from De Graaf et al., 2017, 2018). As expected compensations between diseases are no longer possible. Therefore, the final criterion-score is lower than the previous one (average score: 10.9 vs. 44.3). This also reduces the "Good Health" principle-score (17.5 vs. 34.8), and slightly change the overall classification. Most disease measures (including mortality rate) are now influent. Only, hampered respiration and vulva discharge have low influence, probably due to a low prevalence of these diseases within the dataset. The new calculation seems to

better fits the opinion of trained observers included in the work by (de Graaf et al., 2017).

We will extend this approach on diseases to other animal types.

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The experts who contributed are: Sine Norlander Andreasen, Miroslav Radeski, Frank van Eerdenburg, Sophie de Graaf, Isabelle Veissier, Luc Mounier, Dorothee Ledoux, Alice de Boyer des Roches, Frank Tuytens.

The dataset was given by: Frank van Eerdenburg, Frank Tuytens, Alice de Boyer des Roches, Miroslav Radeski, Luc Mounier, Marie Haskell, Christoph Winckler, M. Kirchner, S.N. Andreasen, Sophie de Graaf

Welfare Quality in the media: Enjoy!

Our Spanish colleagues signalled us this interesting advert. It is the last advert from the company Pascual that is currently featured in Spanish tv, as it is having a high impact (people like it) and we think it has a clear element of ‘welfare quality’ environment:

<https://www.youtube.com/watch?v=txfqhkQMgdY>



If you come across TV adverts and other communication tools that refer to Welfare Quality please send them to Mara Miele at

Mielem@Cardiff.ac.uk

Colophon

WQNews is the electronic newsletter of the Welfare Quality Network project.

This is a European network of researchers focusing on the updating, implementation and communication about the Welfare Quality® project's results. Twenty-six institutes and universities, representing thirteen European countries and four Latin American countries, participate in this network. Welfare Quality Network has been endorsed by the European Commission (DG Sante), and has received financial support from the Swedish Government and the Dutch Government.

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