Application of Welfare Assessment to Commercial Livestock Production

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Application of Welfare Assessment to Commercial Livestock Production

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Farm assurance schemes are an inevitable and essential part of the UK livestock industries as they provide valuable assurances to the market over food safety, nonhuman animal welfare, and environmental concerns. However, there is potential for welfare assessment within such schemes to extend beyond existing resource-based parameters to include outcome-based observations of the behavior and physical condition of the animal. This may be associated with direct benefits for producers (useful management information), consumers (improved welfare assurance), industry (maintain UK competitive position), and regulators (maximize compliance with legislation). The University of Bristol has previously produced protocols to assist with this process (www.vetschool.bris.ac.uk/animalwelfare). An industry-funded project explores mechanisms for adding value to farm assurance schemes by inclusion of on-farm evaluation of health and welfare outcomes. This project is examining the feasibility and benefits of including some on-farm observations of health and welfare outcomes.

Nonhuman animal welfare assessment at group level is a scientific discipline that is rapidly developing. The interest in welfare assessment systems is based on an ethical concern for the welfare of farm animals. The scientific community plays an important role in delivering an appropriate reliable, valid, and feasible framework for these assessments. Welfare assessment can be applied in four broad situations:

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1. Research;
2. Legislative requirements (nonvoluntary);
3. Certification (voluntary) systems; and
4. Advisory/management tools (Johnsen, Johannesson, & Sandoe, 2001; Main, Kent, Wemelsfelder, Ofner, & Tuyttens, 2003).

These applications may have various goals ranging from quantification of welfare, provision of welfare assurance, or welfare management. Assessment systems vary in many characteristics such as animal versus resource-based or based on single or integrated scores. Different applications will require different elements of these features.

Assessing farms against compliance with a set of welfare criteria is a critical component of most farm-based quality-assurance schemes (Mench, 2003). Welfare standards within certification schemes (or legislation) usually attempt to specify what should be provided to the animal. However, evaluation of provisions or resources is a less direct evaluation of welfare than outcomes such as direct observation of the behavior and physical condition of the animal (Webster, Main, & Whay, 2004). Furthermore, an evaluation of a resource-based, farm assurance scheme in dairy cattle designed to raise standards of animal welfare identified that certain parameters such as lameness were similar to those farms not in the scheme (Main, Whay, Green, & Webster, 2003).

A report from the Farm Animal Welfare Council (FAWC; 2005) examined the welfare impact of farm assurance schemes and recommended that “scheme owners should work towards refining their standards and inspection procedures to achieve an increasing inclusion of welfare outcomes” (p. 18).

The importance of welfare outcomes has been recognized by Freedom Food and the Soil Association, and both are engaged in an implementation program with the University of Bristol. This program involves training assessors in the Bristol Welfare Assurance Programme. The stated aim of this system is “to increase the ability of certification schemes to deliver assurance to consumers on animal welfare by incorporating valid, repeatable, and feasible animal-based assessment techniques into certification schemes” (http://www.vetschool.bris.ac.uk/animalwelfare). The potential methodology for incorporating welfare outcomes into farm assurance schemes has been defined by Main, Whay, Leeb, and Webster (2007) and further details are available on www.vetschool.bris.ac.uk/animalwelfare. In addition, a European Union-funded Framework 6 program, “Welfare Quality,” aims to produce a European standard for welfare assessment (Blokhuis, Jones, Geers, Miele, & Veissier, 2003).
INCORPORATION OF WELFARE OUTCOME MEASURES IN UK PIG FARM ASSURANCE SCHEMES

The Universities of Bristol and Newcastle are involved in an industry-funded project that is exploring mechanisms for adding value to farm assurance schemes by inclusion of on-farm evaluation of health and welfare outcomes. The aim of this project is to examine the feasibility and benefits of including some on-farm observations of health and welfare outcomes within Assured British Pigs and Genesis Scheme inspections. These schemes have tended to focus on resource-based parameters; however, these are a less direct evaluation of welfare than outcomes such as direct observation of the behavior and physical condition of the animal. The 3-year project is being guided by a steering group including representatives of producers, farm assurance schemes, Pig Veterinary Society, retailers, and the Department for Environment, Food and Rural Affairs (DEFRA).

The project strategy approved by the steering group is to explore the following potential mechanisms for adding value:

1. Demonstrate legislation compliance;
2. Maintain access to marketplace;
3. Use a productivity/management tool; and
4. Develop new marketing claims.

The first two mechanisms are clearly more defensive than proactive and are focused on maintaining or building upon the existing benefits of farm assurance.

The pig industry in the United Kingdom has a history of being proactive in comparison with other sectors in the use of benchmarking. The British Pig Health Scheme is a very good example of this, which provides feedback for producers from the abattoir. This project will examine the feasibility and benefits of extending this feedback/benchmarking service to health and welfare outcome parameters observed by farm assurance inspectors during their routine assessments. It is reasonable to suggest that farm assurance schemes have not always been viewed as a positive initiative by all pig producers. This project aims to address this imbalance by adding value to the assurance process. The observations should be a valuable management tool for identifying a unit’s strengths and weaknesses, thereby maximizing profitability as well as improving welfare. The proposed methodology is consistent with the certification-bodies requirements for EN45011 (International Organization for Standardization Guide 65) concerning impartiality and avoidance of advice giving during the inspection process.
This project may also demonstrate to DEFRA that the farm assurance process delivers genuine compliance with legislation. It is possible that demonstrating high standards could reduce the number of regulatory visits to pig units. In particular, DEFRA is required to conduct Cross Compliance assessment visits on a risk basis. This project will develop systems that will directly demonstrate this legislation compliance.

Development Phase
The development phase includes an extensive consultation program with producers, veterinary surgeons, and policymakers (Table 1). The development phase has focused on the following sets of potential parameters:

1. Tail lesions;
2. Body wounds;
3. Oral behavior;
4. Lameness;
5. Sick animals;
6. Qualitative behavior;
7. Cleanliness;
8. Human–animal interaction;

<table>
<thead>
<tr>
<th>Potential Outcome Parameter</th>
<th>Legislation Compliance</th>
<th>Avoid Negative Publicity</th>
<th>Maintain UK Standard Productivity</th>
<th>New Marketing Claims</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tail lesions</td>
<td>√ √ √</td>
<td>√ √ √</td>
<td>√</td>
<td>√</td>
<td>Closely linked to existing welfare legislation</td>
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<td>Body wounds</td>
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<td>Oral/Occupation behavior</td>
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<td>Lameness</td>
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<td>Sick animals</td>
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<td>Qualitative behavior</td>
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<td>Cleanliness</td>
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<td>Human–animal interaction</td>
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<tr>
<td>Social behavior</td>
<td></td>
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</tr>
<tr>
<td>Health/ Productivity</td>
<td>√ √ √</td>
<td>√ √ √</td>
<td>√</td>
<td>√</td>
<td>Not as closely linked with legislation but may be included with other European initiatives</td>
</tr>
<tr>
<td>Pig-keeping score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play/Positive behavior</td>
<td>√ √ √</td>
<td>√ √ √</td>
<td>√</td>
<td>√</td>
<td>Novel parameters that reward producers doing more than legal minimum</td>
</tr>
</tbody>
</table>

Note. √ √ √ = Maximum Benefit; √ √ = Moderate Benefit; √ = Some Benefit.
9. Social behavior;
10. Health/Productivity;
11. Pig-keeping score; and
12. Play/Positive behavior.

Each of these parameters has different potential benefits (Table 1).

**Evaluation Phase**

In collaboration with the Assured British Pigs and Genesis schemes, the relevant certification bodies, and pig veterinarians, a program of farm visits has been planned. The critical questions that will be addressed in this phase are the following:

1. What do producers think of each parameter?
2. What are normal ranges for each parameter?
3. What is feasibility for each parameter?
4. What is consistency between assessors?
5. How reliable (over time) is assessment?
6. How many pens need to be sampled?

This exercise is a pilot project that will have no direct influence on the existing certification standards and assessment. The researcher will conduct direct observations during the visit and for a limited number of parameters-concurrent assessments with the farm assurance inspector. After the assessment has been completed, the researcher will explain the project in more depth to the producer, provide some feedback on the assessment, and then ask for views on the potential modification of the farm assurance process.

**Recommendation Phase**

The final phase of the project will concern the refinement of the various systems and production of recommendations on the methods for cost-effective incorporation into farm assurance scheme. Although this may include some additions to the farm assurance procedures, it is also hoped that some existing procedures can be streamlined to ensure no increase in cost to the industry. In addition to the modification of farm assurance assessor procedures, an important principle of the project has been to maximize the practical self-assessment by producers and also make optimum use of the veterinary surgeon’s quarterly visit. Hence the recommendations will describe which parameters are best assessed by whom. In order to add value, the dialogue with the larger retailers at all stages of the project is included in the project to ensure that retailers value this British
MAIN

APPLICATION OF EXISTING KNOWLEDGE AMONG PRODUCERS

In addition to working with farm assurance schemes that aim to demonstrate compliance with certain welfare standards, welfare scientists can engage more directly with producers to promote uptake of husbandry modifications that would improve welfare and productivity. A useful example to illustrate this is lameness in dairy cattle. In 1997, the FAWC stated that UK “lameness levels are unacceptably high” (Par. 134). However, crucially, lameness is also an economic cost for the producer. Esslemont (2005) calculated the average cost of a case of dairy cow lameness to be £180 (US $124) when labor, treatment, and production losses are included. Using these figures, the cost of lameness on many farms could be more than £14,000 (US $9,655) per 100 cows per year, making most lameness-control strategies extremely cost-effective for farmers if appropriately and correctly implemented. Although lameness is associated with significant production losses, producers are on average aware of only 1 in 4 lame cows (Whay, Main, Green, & Webster, 2003).

Despite the high average national levels of lameness, it has also been observed that some farms can achieve very low levels of lameness. This is a cause for hope as it illustrates that producers, given the right motivation, should be able to achieve good welfare performance. Numerous studies have demonstrated effective methods for preventing conditions causing lameness in dairy cattle. Lameness in the UK dairy cow is, however, a multifactorial condition caused by a number of conditions (Clarkson et al., 1996). Therefore, for each unit, we are able to define the causal condition, the risk factors associated with the disease, and—given the constraints unique to that unit—the best option for controlling the disease on the farm.

Considering that there is extensive research on lameness in dairy cattle, an appropriate approach is to develop a lameness-control program that provides to the farmer a farm-specific set of husbandry measures based on that particular farm’s pattern of risk factors and lameness conditions. A critical early finding of this work is that the extent of lameness improvement is dependent on the level of a farmer’s compliance with the husbandry recommendations. This lack of uptake may be surprising, considering that the financial cost of lameness can be quite high. The next aspect to consider, therefore, is to identify the best method of encouraging uptake of this knowledge. Hence, in a project supported by the Tubney Charitable Trust, a program of incentives is being examined on a group of 150 farms. These will include different methods of providing
advice, a certification requirement from farm assurance schemes, and a financial incentive based on performance. This project will also generate a network of trained advisors and assessors and promote uptake of successful methodologies by relevant policymakers and farm assurance schemes.

CONCLUSIONS

Welfare scientists can help produce welfare assessment systems that are valid, repeatable, and feasible. However, understanding the associated benefits is crucial if livestock industries are to embrace welfare assessment and management strategies. The strategic approach for farm assurance schemes is to define these benefits. For the United Kingdom, these include the following:

1. Demonstrating to government that membership of a scheme reduces the need for cross-compliance assessments;
2. Avoiding negative publicity associated with inadequate implementation of legislation or FAWC recommendations;
3. Developing capacity to enable early adoption of European Welfare Quality scheme;
4. Developing systems that have productivity/management benefits; and
5. Developing potential new marketing claims (new standards and assessment criteria) that can be used by some or all of UK producers.

Furthermore, experience with specific welfare concerns such as lameness has highlighted the need for coordinated motivational strategies that promote uptake of existing knowledge. The underlying financial benefits of improving welfare may be insufficient to change producer behavior.

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REFERENCES