



GCAW RECOMMENDATION ON THE USE OF WELFARE OUTCOME MEASURES FOR BROILER CHICKENS

GCAW APPROACH TO BROILER CHICKEN WELFARE

The Global Coalition for Animal Welfare (GCAW) is aligned with the World Organization for Animal Health (WOAH, founded as OIE) and uses its definition of animal welfare:

An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well-nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress.

Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing.

Animal welfare refers to the state of the animal (that is, how it is coping with its environment); the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment¹.

GCAW recognizes that good animal welfare can be achieved in a variety of production systems. The Coalition is focussed on continuous improvement of animal welfare and promoting alternative animal care or husbandry practices that positively impact welfare.

This document sets out GCAW's approach to using welfare outcome measures alongside input-based measures for supporting improvements in broiler chicken welfare.

INPUT-BASED MEASURES AND WELFARE OUTCOME MEASURES

Input-based or resource-based measures focus on the management practices and external resources provided to animals, such as stocking density, type of housing or transport duration. Such measures are often included in legislation, certification standards and corporate commitments, and are often the focus of NGO campaign demands. While these measures can be easily assessed (e.g., the proportion of animals reared at a specific stocking density or provided with particular lighting), they do not indicate how the animal is actually coping with its environment, as influenced by variable factors such as stockmanship, disease or local environmental conditions.

In contrast, welfare outcome measures (WOMs) assess how an animal is coping with its environment. Welfare outcome measures cover the lifespan of the animals and can be collected on farm, during transport and at slaughter. Such measures are 'animal-based', meaning that they focus on the animal itself (such as its health and behaviour), rather than conditions external to the animal. Welfare cannot adequately

Welfare Outcome Measures may also be referred to as:

- Animal-based Measures
- Outcome-based Measures
- Animal-based Indicators
- Key Welfare Indicators

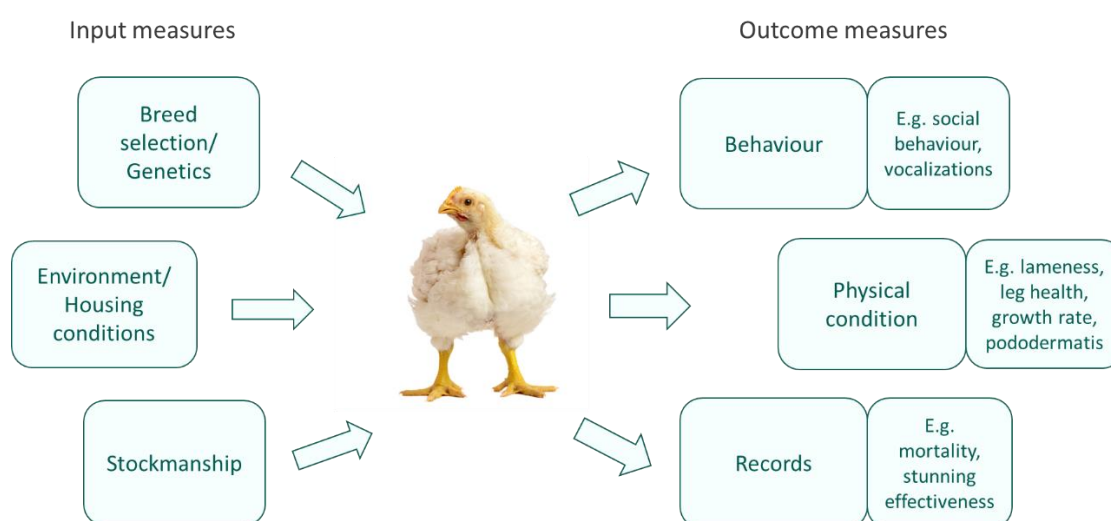
¹ Based on [Article 7.1.1](#), Terrestrial Animal Health Code. World Organization for Animal Health (WOAH, founded as OIE).

be assessed with one single measure, but a combination of welfare outcome measures can be used to provide an indication of the welfare of the animals being assessed. Key Welfare Indicators is a term often used interchangeably with Welfare Outcome Measures, although this term can be broader in scope as it can also refer to resources and management inputs.

The interrelationships between input-based measures and welfare outcome measures are multiple, with the different variables of an animal’s environment working together to increase or decrease the probability of a particular welfare outcome. For example, genetic selection (i.e. the breed used) is an ‘input’ that can impact multiple welfare outcomes, including behaviour and walking ability. However, other inputs, such as reducing stocking density or improving litter quality, can also impact behaviour and walking ability.

As welfare outcome measures are animal-based, they can be measured across different production systems, management practices, geographies and breeds. If both input-based measures and welfare outcome measures are monitored, data can be used to compare the welfare of animals under different conditions. The resulting insights can subsequently be used to inform changes in management practices, as well as drive continuous improvement in welfare standards. The use of input-based measures and welfare outcome measures together is therefore complementary.

Input measures versus outcome measures:



RECOMMENDED WELFARE OUTCOME MEASURES FOR BROILER CHICKENS

Increased use of welfare outcome measures within broiler chicken supply chains is positive as it allows for housing system features and management practices to be continuously evaluated and improved. As there are many measures that can be used, GCAW has identified recommended measures for companies that are looking to start monitoring welfare outcomes in their supply chains. These measures have been selected based on the relative ease of data collection and because they reflect the key welfare issues for broiler chickens. In addition, these measures are already widely used within the industry. Greater consistency in the measures used across supply chains facilitates meaningful comparison of data and provides a larger data base to draw insights from, for identifying key challenges and opportunities for improvement.

Companies with a more established programme of welfare outcome measurement may decide to expand the number of measures used over time. The International Poultry Welfare Alliance (IPWA) has developed standardised instructions for the assessment of key welfare indicators – including welfare outcome measures – for use in different poultry species and at different production stages. These include 15 measures for broiler chickens².

² https://poultrywelfare.org/KWI_Reference_Guide

Recommended welfare outcome measures for broiler chickens:

<p>Impaired mobility</p> <p>The walking ability of a broiler chicken can vary from normal to severely impacted. Walking ability can be affected by factors such as poor bone strength, bone breakages, poor leg or hip conformation, prevalence of foot pad dermatitis or injuries. Lameness is a term often used interchangeably with walking ability or impaired mobility.</p> <p>How is this measured?</p> <p>Gait scoring is a way to evaluate a bird's walking ability, involving a visual judgment of the ease with which a broiler chicken is able to walk and allocating a score (e.g., 0 to 3). It is not feasible to assess all birds within a flock and therefore the proportion of a sample of birds achieving a certain score is used to assess the prevalence and severity of lameness in a flock.</p> <p>Where is this measured?</p> <p>Birds are assessed on farm.</p>	<p>Injuries and fractures (legs and wings)</p> <p>Injuries, including bruising or fractures on the legs and wings may occur during the handling of broiler chickens. Most commonly, this occurs when the birds are caught and handled (by humans or machines) for transport to the slaughterhouse, or during the process of pre-slaughter stunning.</p> <p>How is this measured?</p> <p>Visual observations using severity scoring scales, which may take into account the number and/or percentage of bruises, their size and age.</p> <p>Where is this measured?</p> <p>If injuries are detected on farm, they will likely lead to culling and may therefore be captured along with, or within, measures of cull rate. Injuries occurring during transport or during the pre-slaughter handling and stunning process are measured at the slaughterhouse.</p>
<p>Skin lesions on footpad, hock or breast</p> <p>Skin lesions, such as wounds or inflammation, can appear on any part of the body, but are most commonly found on the footpad and hock of broiler chickens. These are typically caused through contact with wet litter, resulting in 'contact dermatitis'³.</p> <p>'Foot pad dermatitis' is contact dermatitis found on the skin of the foot, most commonly on the central pad, but sometimes also on the toes. 'Hock burn' is contact dermatitis on the skin at the back of the hock joint. A 'breast blister' (sternal bursitis) is an accumulation of fluid primarily caused by long-lasting friction and pressure on the keel bone bursa. 'Breast buttons' (focal ulcerative dermatitis on the skin overlying the breast muscle, also called breast burns) are caused by exposure of the naked skin to the litter. Both are associated with poor breast feathering.</p> <p>How is this measured?</p> <p>The severity of these lesions is normally assessed according to a severity scoring scale (e.g., 1 to 3). The proportion of birds achieving a certain score is used to assess the prevalence and severity of the lesions in a flock.</p> <p>Where is this measured?</p> <p>Contact dermatitis can be monitored on farm for a sample of birds, or (as is most commonly done) in the slaughterhouse, after birds are killed and defeathered.</p>	<p>Mortality, cull rate and DOA (dead-on-arrival)</p> <p>Mortality is defined as the 'uncontrolled' death of animals (as distinct from culling/euthanasia). Broiler chickens may die from many causes, but more common examples include respiratory or heart disease, viral or bacterial infection and dehydration. Any animal which is found dead on farm is considered a mortality.</p> <p>Culling is when birds are euthanized by a stockperson for reasons of injury (e.g., lameness), sickness or disease, or for disease control purposes.</p> <p>DOA (dead-on-arrival) is a measure of mortality after transport, based on the number of birds that arrive dead (died during transport).</p> <p>How is this measured?</p> <p>Mortality, cull rates and DOAs are generally measured by counting the affected birds individually and calculated as a percentage of the flock.</p> <p>Where is this measured?</p> <p>On farm (mortality or culls), after transport or in lairage, at the slaughterhouse (DOAs).</p>

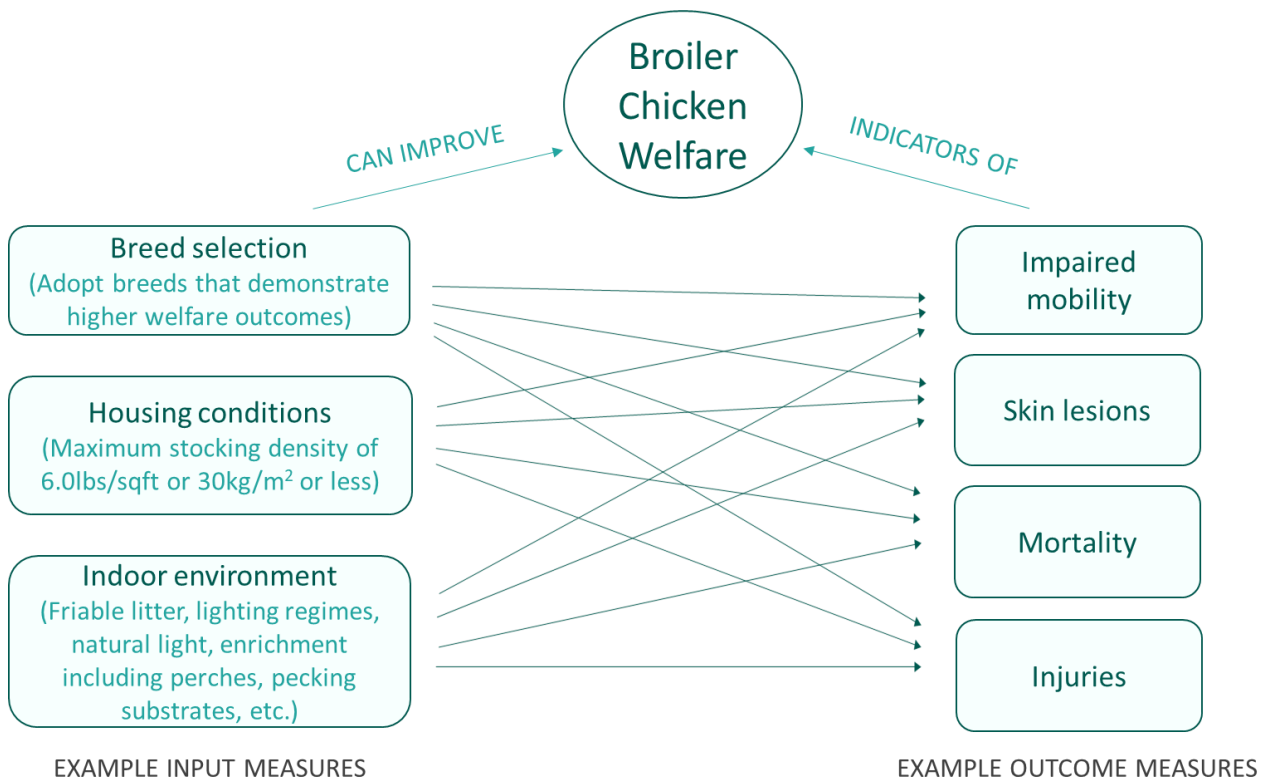
³ Butterworth, A. ed., 2009. *Welfare Quality Assessment protocol for poultry*. Lelystad, The Netherlands: Welfare Quality Consortium.

INPUT-BASED AND OUTCOME-BASED MEASURES AND THEIR RELATIONSHIP

The links between input-based measures and welfare outcome measures are typically complex, and specific features of a production system or management interventions can lead to a number of behavioural and physical impacts on the animal. Conversely, several changes to a production system or to management practices may be required to improve a particular welfare outcome. The table below details some of the inputs (care practices) relevant to chicken production, linked to each of the recommended welfare outcome measures.

Welfare outcome measure (WOM)	Indicator of	Related inputs (care practices)
Impaired mobility	Leg or foot disease or injury, poor skeletal confirmation, growth rate. Improper lighting programmes or feed	Breed selection, housing conditions (stocking density, group size), indoor environment (litter, enrichment, lighting), feed
Skin lesions on footpad, hock or breast	Poor litter conditions, ventilation, or water line management	Breed selection, housing conditions (stocking density, group size), indoor environment (litter, enrichment, lighting, ventilation)
Mortality, cull rate and DOA (dead-on-arrival)	Poor bird health, litter condition, ventilation or handling and transport comfort	Breed selection, housing conditions (stocking density, group size), indoor environment (litter, enrichment, lighting, ventilation), handling, transport conditions
Injuries and fractures (legs and wings)	Handling at catch and transport, unloading, shackling and ineffective stunning (high voltage water bath)	Breed selection, housing conditions (stocking density, group size), handling, transport and slaughter conditions, stunning parameters

Inputs and outcomes – two complementary approaches:



CONSIDERATIONS FOR WORKING WITH WELFARE OUTCOME DATA

ACCESS TO DATA

Welfare outcome measure data is primarily collected on farms and slaughterhouses (at arrival and after slaughter), although in the case of broiler chickens, data may also be collected at hatcheries. For companies without direct access to farms and slaughterhouses, assurance or certification schemes and third-party auditing bodies are often the primary source of data. Some companies choose to work with in-house auditors or with supplier questionnaires and other self-report tools. The most effective route for accessing the required data will be specific to each company and their individual supply chain management processes.

DATA QUALITY AND COMPARABILITY

In order to be able to compare welfare outcome measure data from different flocks, farms or producers, the data needs to have been collected in a similar way. It is therefore important that guidance is developed on how to assess welfare outcome measures and that the process is practical, standardized and repeatable. Some welfare outcome measures may be relatively straightforward to monitor, whereas others will require more guidance and training for farm staff. In some cases, post-mortem inspections may be preferable to on-farm assessments as variability is reduced.

GCAW encourages the development and adoption of standardized protocols for measurement of welfare outcome measures, such as being developed by the IPWA, in order to facilitate data comparability and align demands of producers.

For each measure, it is important to specify the data sample size (i.e., the number or proportion of chickens that are assessed in a flock). The appropriate sample size may differ depending on the purpose of the assessment, whether it is to inform management practices, to identify high risk farms, or for defining thresholds for action. Other factors that may impact the comparability of welfare outcome measure data include the age of the birds and the time of day at which the assessment is conducted.

INTERPRETING DATA AND DRIVING CONTINUOUS IMPROVEMENT

Once a baseline of data for each welfare outcome measure has been established, it becomes possible to set specific targets for improvement and begin tracking progress over time. It is important for buyers and producers to work in collaboration during this process, not least because the priority areas for improvement and actions required are likely to differ between farms.

Provided that welfare outcome measure data has been collected in a similar way, the data can be used to compare performance between flocks, farms or producers. A data sharing community can be created, in which comparable data from different supply chains is pooled and evaluated jointly. This may consist of the members of a producer group, or farms that are part of a specific assurance scheme. Such initiatives allow companies to benchmark themselves against their peers and help drive improvements at industry level.

Focusing on positive results is more likely to encourage engagement with producers and drive continuous improvement.

Data pooling can also help identification of minimum thresholds and targets for welfare outcome measures. However, welfare outcome measures do not always have defined thresholds or set endpoints, in contrast to input-based measures which are aimed at achieving specific management conditions (e.g., providing environmental enrichment to 100% of supply). As a result, welfare outcome measures are best used for identifying deviations in welfare performance and driving continuous improvement through relevant interventions. Actions for improvement that may be indicated by welfare outcome measures include, for example, adjustments in barn temperature, modification of feed, or reduction of stocking density.

EXTERNAL COMMUNICATION

Whilst the main value of monitoring welfare outcome measures is in monitoring and managing animal welfare in the supply chain, the data can also provide a basis for external communications. With growing calls for increased corporate transparency from customers, investors and NGOs, many companies have now expanded their reporting on farm animal welfare performance to include welfare outcome measure data.

The most frequently reported welfare outcome measure data for broiler chicken welfare include mortality rate, DOA (dead-on-arrival), footpad dermatitis and hock burns, lameness, injuries (e.g., to feet, legs or wings) and effectiveness of stunning. There may be sensitivities regarding public reporting of actual performance figures for some supply chains, but it may still be possible to report year-on-year progress (e.g., percentage improvement), accompanied by the targets and actions identified, and a narrative on challenges or successful interventions over the reporting period.

Increased monitoring and public reporting of welfare outcome measure data by companies can facilitate the identification of industry-level barriers to progress and priority areas for improving broiler chicken welfare.

SUMMARY RECOMMENDATIONS

- Monitor both input-based measures and welfare outcome measures to provide data that can be used to inform changes in management practices and drive continuous improvement in broiler chicken welfare.
- Focus initially on the set of recommended welfare outcome measures for broiler chickens: Impaired mobility; Skin lesions on footpad, hock or breast; Mortality, cull rate and DOA (dead-on-arrival); and Injuries and fractures (legs and wings).
- Where available, adopt standardized protocols for measurement of welfare outcome measures in order to improve data reliability and comparability and align demands of producers.
- Engage closely with supply chain partners and producers when designing and managing welfare outcome measure programmes to ensure the protocols are practical and produce reliable data.
- Publicly report welfare outcome measure performance to help identify industry-level barriers to progress and priority areas for improving broiler chicken welfare.