FEDERATION OF VETERINARIANS OF EUROPE

Monitoring of farm animal welfare using animal indicators

'Position paper'

SUMMARY

FVE advises all involved in animal farming to use animal-based indicators for assessing the welfare conditions of farmed animals on a routine basis. The regular monitoring of animal welfare allows the early identification of animal health and welfare issues at farm level and timely implementation of corrective measures. Veterinarians play a key role in high-profile areas, including animal health, animal welfare, public health, environmental protection and preventing antimicrobial resistance.

Introduction

There is general agreement that a farm animal is in a good welfare state[1] if it is healthy, well fed and cared for, also by means of adequate shelter, and able to exhibit its normal behavioural patterns. Animal health is a key component of animal welfare. Animals experiencing poor welfare conditions are more prone to disease, including increasing shedding of pathogens, with possible detrimental effects on public health.

Several requirements have already been streamlined at European level for the protection of farm animal welfare. These mostly focus on measuring the adequacy of input factors, such as the physical environment and resource availability ("resource-based indicators"), and management provisions ("management-based indicators"). Recent progresses in the field of animal welfare science demonstrate that these indirect methods indicate the risk of welfare problems rather than providing an actual measure of welfare state. Therefore, in recent years, effort has been concentrating on the identification of direct measures of animal welfare, using "animal-based indicators". It needs to be emphasised that using these indicators will never replace the role of a good stockman who daily inspects and knows the herd inside out. Nevertheless, these indicators give the stockman an extra tool to early detect welfare risks.

This working document discusses the importance of implementing basic animal welfare monitoring systems at herd or flock level, using existing data and reliable science-based indicators, emphasising the role of veterinarians.

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[1] 5 Freedoms Farm Animal Welfare Council:
http://webarchive.nationalarchives.gov.uk/20121010012427/http://www.fawc.org.uk/freedoms.htm

Measuring and monitoring animal welfare

The legislation in place in the European Union requires all farm animals to be inspected routinely by the competent authorities. However, the frequency of official inspections is commonly low, and these are based only on the criteria specified in the current legislation. This lacks the necessary details concerning the required indicators. Similarly, there is no guidance or tools for the compulsory inspections that need to be carried out by the animal owners/keepers. The existing legislation defines a few animal welfare indicators to be collected at slaughterhouses for some species.

In recent years, sub-optimal and, on occasion, catastrophic animal health and welfare conditions in farms have been found by NGOs dealing with animal protection, and in some cases the competent authority only found out in response to this signalling.

The adoption of suitable tools/protocols for the implementation of routine checks at adequate frequency is fundamental to improve responsiveness allowing the prevention and/or early identification of animal health and welfare issues. Technological tools to support data collection and analysis exist and are in constant development; these could represent valuable supports for the measuring and monitoring of animal welfare.

Selection of indicators

Animal welfare science has advanced enormously over the last decades and has led to established assessment protocols for the main farmed species. The FVE recognises that these advances are outstanding. However, most of the protocols available to date present significant practical constraints (*e.g.* time, practicality and cost) making their use limited in the field.

Assessment protocols require a minimal subset of animal-based measures that may predict the overall welfare state of an animal. They need to be based on sound science, practical and designed to ease the data collection as well as to promote uptake by all stakeholders.

Since welfare relates to mental states and individual/groups of animals can react differently to the same stimulus, direct measurement of animal welfare, using indicators collected from the animal itself ("animal-based indicators") is preferable to the collection of input factors. Nonetheless, the FVE recognises that in some areas where animal-based indicators are unavailable, or their collection is too costly (*e.g.* economic, time), reliable resource or management-based indicators can be used instead.

The role of veterinarians

Veterinarians play a key role in many high-profile areas, including animal health, animal welfare, food safety, environmental protection, sustainable animal production, and preventing antimicrobial resistance. Veterinarians should play a major role in the selection of validated indicator sets to allow the early recognition of signs of sub-optimal animal health and/or welfare. These lists should be species-specific and, in some cases, need to be adapted to the farming system in place as well as updated overtime. The early recognition of sub-optimal conditions would enable timely action to be implemented.

The assessment of animal welfare should be conducted using a team approach, with shared responsibilities and interconnected and complementary roles. In most cases,

animal owners would be the ones performing the data collection; it is fundamental for them to understand the advantages of this practice to ensure its implementation. Veterinarians should provide guidance to owners and others responsible in promoting animal well-being and preventing animal suffering, allowing them to take appropriate management and husbandry decisions and to find long-term solutions for possible animal health and welfare issues.

Veterinarians employed by the competent authority, are required to work toward risk-oriented planning of inspections[2]. Collected data, both at farm and at slaughterhouse, should be analysed as to identify herds or flocks presenting higher welfare risks, allowing planning and improving controls. To this end, it should be considered that inspections based only on the minimal legal requirements might not be sufficient, and that additional and reliable information should be collected. To achieve this, the harmonisation of data collection system is key.

Conclusions

The FVE advises all involved in animal farming to use animal-based indicators for assessing the welfare conditions of farmed animals on a routine basis. The regular monitoring of animal welfare would also allow the early identification of animal health and welfare issues at farm level, allowing timely and ad hoc implementation of corrective measures.

FVE encourages veterinarians to work in close relation with animal owners, to educate them and to facilitate their understanding of the advantages of animal welfare monitoring and their acceptance of such practice.

The FVE urges stakeholder groups and farmers umbrella organisations to define, based on the available scientific literature and other published protocols, lists of indicators for all species and the frequency of collection. It is fundamental that veterinarians play a major advisory role in this matter. The close collaboration between veterinarians and farmers, based on regular farm visits, will contribute to establish more sustainable animal husbandry practices, helping to optimise animal health and welfare[3].

The FVE highlights that the assessment of animal welfare should go beyond the daily health check, and promotes the inclusion of animal-based indicators for assessing animal welfare in the Herd Health Planning[4] and the use of the collected information to be fed into the Food Chain Information[5].

The FVE recognises the role that quality assurance schemes can play in improving the implementation of monitoring requirements at farm level. Although some of these schemes already require the monitoring of animal welfare, this topic should be covered more broadly.

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[2] Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules.
[3] Ref. Veterinarians' Contribution to the UN Sustainable Development Goals (SDG), FVE/16/doc/006
[4] Ref. FVE Herd Health Planning, Adopted 05 June 2015, FVE/doc/2015/003
[5] Ref. FVE guidance document on Food Chain Information, 06 June 2015, FVE/pp/2015/_005_FINAL

The FVE encourages the implementation of scientific studies aiming at the definition and validation of reliable and feasible indicators for assessing welfare of minor species (*e.g.* rabbits, sheep and goats, horses). FVE also recognises that further work will be required in the future for some indicators to improve the reliability and feasibility of measures when used in commercial settings.

This working document investigates ways the veterinary profession can contribute continuously to the development of more sustainable animal husbandry practices, aimed at optimising the health and welfare of the animals themselves and indirectly improving producer knowledge and work satisfaction. The monitoring data should be recorded and used to identify systemic welfare risks and to guide future decisions (both specific to an animal and generalised to a herd, flock or farm). The use of slaughter data records as health-related indicators could also strengthen the current system of communicating inspection result to farms as required by the current community food hygiene regulations.

As an example, lists of animal-based indicators for pigs, cattle and poultry are provided. The list is not exhaustive and will be improved and/or superseded in the future, such indicators can and should be used by veterinarians, other professionals, farmers and their organisations, inspectors and workers to assess farm animal welfare, and by scientists to measure welfare. This paper aspires to promote constructive discussion between veterinarians, scientists, farmers, policy-makers and the public to ensure continued improvements in farm animal welfare.

Annex: Non-exhaustive list of suggested animal-based/resource-based welfare indicators to be used in a welfare assessment protocol of pigs, poultry, and cattle

PIGS

A. Health-related indicators
1. Farm production records
     1.1 Percentage of dead animals (died and euthanised on farm), *e.g.* cumulated over a suitable time period
     1.2 Percentage of animals treated with antimicrobials or anti-inflammatories

2. **Slaughter data records** (cumulated data over several months per herd as a "rolling average" months)
     2.1 Percentage of runts
     2.2 Percentage of dirty animals
     2.3 Percentage lame animals
     2.4 Percentage of carcasses with severe pneumonias (≥ 30% of the lung tissue)
     2.5 Percentage of carcasses with severe pleurisy (≥ 30% of the pleura)
     2.6 Percentage of carcasses with severe abscesses (multiple abscesses or big abscesses)
     2.7 Percentage of carcasses with multiple skin lesions (beating marks or ranking order wounds)
     2.8 Percentage of carcasses with docked tails
     2.9 Percentage of carcasses with moderate to severe tail biting

3. **Farm clinical records**
     3.1 Frequency of coughing and sneezing
     3.2 Frequency of diarrhoea
     3.2 Frequency of lameness, arthritis and bursitis
     3.3 Frequency of tail/ear/flank biting
     3.4 Frequency of wounds and skin lesions
     3.5 Degree of uniformity within the age groups
     3.6 Body condition scoring
     3.7 Percentage of animals huddling or panting

B. Behaviour-related indicators
1. Frequency of deviations from normal behaviour
     1.1   Stereotypies (*e.g.* tail biting, bar biting in sows)
     1.2   Lying patterns in grouped pigs (heaps, sitting, unrest, lying on the belly)
     1.3   Percentage of animals showing fear to humans (to assess good stockman-animal relationship)

C. Resource-related indicators

    1.   Enough space with separated function areas
    2.   Suitable ratio of feeding places and permanent water access
    3.   Provision of sufficient and appropriate enrichment material
    4.   Percentage of solid floor

5. Good ventilation and air quality (NH3, CO2, CH4, etc)

POULTRY

A. Health-related indicators
1. Farm production records
    1.1 Percentage of dead (died or euthanised on farm) per production cycle
    1.2 Percentage of animals treated with antibiotics or anti-inflammatories

2. Slaughter data records
    2.1 Percentage of birds dead-on-arrival
    2.2 Percentage of birds not fit for slaughter
    2.3 Percentage of condemned carcasses
    2.4 Percentage of carcasses with severe pododermatitis
    2.5 Percentage of carcasses with severe hock burns
    2.6 Percentage of carcasses with severe breast blisters
    2.7 Percentage of carcasses with multiple skin lesions and wounds (injurious pecking)
    2.8 Percentage of birds with heavy feather loss (beware moulting)

3**. Farm clinical records**
    5.1 Percentage of birds with severely soiled plumage
    5.2 Percentage of severe lameness
    5.3 Percentage of severe pododermatitis
    5.4 Percentage of severe hock burns
    5.5 Degree of body weight uniformity
    5.6 Degree of injurious pecking
    5.7 Percentage of animals huddling or panting

B. Behaviour-related indicators
1. Frequency of deviations from normal behaviour
    1.1 Feather pecking
    1.2 Evenness of using the space
    1.3 Avoidance distance test (to assess good stockman-animal relationship)

C. Resource-related indicators

1. Access to an outdoor area, possibility of dust-bathing
2. Ratio of animals and feeders and water access
3. Availability of hay bales or pecking stones
4. Availability of sufficient perching space
5. Provision of adequate light
6. Air quality (ppm ammonia)

CATTLE

A. Health-related indicators
1. Farm production records
  1.1 Percentage of dead animals (died and euthanised on farm)
  1.2 Percentage of animals treated with antibiotics or anti-inflammatories

2. Slaughter data records (cumulated data over several months per herd as a "rolling average")
  2.1 Percentage of cow with low body condition scoring
  2.2 Percentage of dirty animals
  2.3 Percentage of lame animals
  2.4 Percentage of wounds, damaged udders or teats
  2.5 Percentage of animals with carcass bruising

3. Farm clinical records
  3.1 Percentage of cow with low body condition scoring
  3.2 Percentage and degree of lameness
  3.3 Percentage of animals with arthritis or bursitis
  3.4 Percentage of neglected claw trimming
  3.5 Percent of wounds, damaged udders or teats
  3.6 Young stock: percentage of diarrhoea, pneumonia and omphalophlebitis

B. Behaviour-related indicators
1. Frequency of deviations from normal behaviour
  1.1 Stereotypies (licking the wall, playing with the tongue)
  1.2 Undisturbed resting
  1.3 Average avoidance distance (to assess good animal-stockman-relationship)

C. Resource-related indicators
 1. Presence of tethered animals
 2. Access to pasture or at least paddocks
 3. Suitable space with separated function areas
 4. Suitable size of cubicles
 5. Availability of "cow comfort" equipment, such as rotating brushes