

NAWAC GUIDELINE 05:

Role of science in setting animal welfare standards

1. Introduction

Science makes a central contribution to promoting good animal welfare, and this is recognised in the Animal Welfare Act 1999. The Act requires that, when NAWAC considers the content of draft codes of welfare – in particular, regulations, minimum standards and recommendations for best practice – it must, among other things, have regard to good practice, scientific knowledge and available technology. Science is therefore expected to play a major part when NAWAC seeks to define animal welfare standards.

However, NAWAC recognises that science is not value-free and results of animal welfare studies will depend very much on the particular framework under which the research is carried out. The three common approaches – biological functioning, affective states and “natural living” – may all come to different conclusions about the same issue. There are still many gaps in our scientific knowledge in the field of animal welfare. This guideline also discusses how NAWAC deals with scientific uncertainty.

2. Type of science relevant to the setting of standards

Animal-based, as opposed to physical, sciences are clearly the most relevant to animal welfare, and these may be classified according to the recognised disciplines of, for instance, anatomy, biochemistry, genetics, nutrition, physiology, pharmacology, parasitology, pathology, microbiology, behavioural science and clinical sciences. Superimposed on these disciplines, and evident within each, are three orientations. They relate to whether research activity in particular is directed towards:

- (a) acquiring knowledge of biological processes simply to improve understanding (fundamental studies);
- (b) seeking solutions to practical, husbandry, clinical or other problems in the medium term by acquiring fundamental knowledge in a more directed way (strategic studies);
or
- (c) seeking such solutions in the near future by using established knowledge to solve specific problems (applied studies).

Animal welfare science has emerged during the past 15 to 20 years as a recognised discipline and encompasses animal-based facets of nutritional, environmental, health, behavioural and cognitive/neural sciences. Consideration of all five areas is necessary to achieve comprehensive coverage of the different dimensions of animal welfare. Moreover, it is necessary for fundamental, strategic and applied research to be conducted in all five of these areas. Although strategic and applied orientations are emphasised at present, fundamental studies remain imperative to advancing animal welfare. That is because it is fundamental knowledge of biological processes that provides a sound basis for understanding what animals' needs are and validates the indices used to determine the extent to which they are met. Fundamental knowledge is acquired by studying biological processes rigorously and objectively for their own sake and, although it is an essential starting component of strategic and applied studies, fundamental knowledge may also be generated during such studies.

Although current animal welfare science research has obvious welfare purposes, advances in animal welfare also occur by using knowledge from wider contexts. Much of the knowledge used now to enhance animal welfare was generated over many decades in animal production/husbandry, veterinary, wildlife and biomedical contexts without explicit animal welfare purposes in mind. This knowledge clearly had wider relevance than was originally envisaged, and adopting a similarly broad approach will continue to be beneficial in the future.

3. Animal sentience, science and setting of standards

The understanding that animals are sentient, that they have emotions, feelings, perceptions and experiences that matter to them, has always been integral to NAWAC's development of codes of welfare and minimum standards. With the official inclusion of animal sentience in the Act in 2015 and advances in the understanding of animal sentience, the predominant approach of preventing or reducing negative experiences will be complemented by an increased focus on positive experiences when setting standards.

Science plays an important role in determining how indicators of positive experiences can be used for developing minimum standards.

4. Application of science to the setting of standards

Science plays a major role when NAWAC considers regulations, minimum standards and recommendations for best practice. Scientific *knowledge* with the dimensions outlined above and the scientific *method* in terms of its rigour and objectivity of evaluation, including critical peer review, are both employed. However, it is not only experimental support for animal care and management practices that is considered. Also included are common sense (critically evaluated), experience with the practical care and management of animals in the circumstances of their use, clinical observation of health and welfare status, and experience with the outcomes of veterinary therapies.

These elements of knowledge and experience are not sufficient in and of themselves, individually or collectively, to determine precisely what are and are not acceptable minimum welfare standards. They allow the known and unknown, theoretical and practical, workable and unworkable facets of each problem to be evaluated, and thereby provide a basis for decision-making. In some cases, it is obvious what a standard should be, whereas in others it is less clear. In all cases, however, it is a matter of *judgement*, judgement undertaken collectively through the combined expertise of NAWAC members whose knowledge and experience include agricultural, animal and veterinary sciences, the commercial use of animals, the care, breeding and management of companion animals, ethical standards and conduct in respect of animals, animal welfare advocacy, the public interest in respect of animals, and environmental and conservation management.

No such animal welfare decisions can be made on the basis of science alone, but science does underpin all of them. Judgement, broadly based and carefully exercised, is the other major element. Thus, NAWAC defines regulations and minimum standards and makes recommendations for best practice by exercising *scientifically informed best judgement*.

This guideline was approved by NAWAC on 11 February 2004 and has since been updated. This guideline is not a legal interpretation of the Animal Welfare Act 1999. It is anticipated that this guideline will be updated from time to time in light of experience gained by NAWAC during its deliberations.