

research is necessary to identify and validate protocols for ABMs for welfare consequences where none are currently suitable for on-farm assessment (eg prolonged thirst in ewes and lambs, restriction of movements in lambs)” and, “Harmonised methods to implement and maintain accurate and verifiable farmer records of mortality, incidence of diseases and welfare outcomes should be actively developed, in order to facilitate a systematic data collection”.

Scientific Opinion on the Welfare Risks Related to the Farming of Sheep for Wool, Meat and Milk Production (December 2014). A4, 128 pages. European Food Safety Authority, Animal Health and Welfare Panel. *EFSA Journal* 12(12): 3933. doi: 10.2903/j.efsa.2014.3993. Available online at: www.efsa.europa.eu/efsajournal.

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CCAC publishes guidelines on marine mammal care

Established in 1968, the Canadian Council of Animal Care (CCAC) is a not-for-profit, national agency responsible for setting and maintaining standards for the ethical use and care of animals in science (research, teaching, and testing) throughout Canada. Twenty-four scientific and animal welfare member bodies make up the CCAC and together they seek to advance the welfare of animals used in science through four key areas: a Standards Program; an Assessment and Certification Program; Public Affairs and Communication; and Operations.

Under the Standards Program, CCAC develops and revises guidelines according to: current and emerging needs of the research community; advances in laboratory animal care; and the needs of the CCAC Assessment and Certification Program. Guidelines are produced by a sub-committee of experts, selected according to their knowledge in one or more areas to be covered by the guidelines, and are based on scientific evidence and expert opinion. Guidelines also undergo extensive peer review.

The latest guidelines produced by the CCAC cover the care and use of marine mammals and are intended for all Canadian institutions that house these animals. The recent guidelines replace a previous CCAC document which covered marine mammal care (*Chapter XVII — Marine Mammals, Guide to the Care and Use of Experimental Animals, Volume 2*, published in 1984).

Marine mammals are defined as all members of the Order Cetacea (whales, dolphins and porpoises), the Order Sirenia (manatees and dugong), and within the Order Carnivora, the Family Phocidae (true seals), the Family Otariidae (eared seals and sea lions), the Family Odobendidae (walrus), and the sea otter (*Enhydra lutris*).

The bulk of the guidelines focus on providing information within the following chapters: General Considerations; Facilities; Facility Management, Operation and Maintenance; Acquisition and Disposition; Transportation; Husbandry; and Animal Health Care. Each chapter is divided into subsections

and, where applicable, a specific guideline is given. Guidelines may be mandatory (in which case the term ‘must’ is used), or a guideline may indicate an obligation (in which case ‘should’ is used, and any exceptions must be justified and approved by an ACC). Sixty-four specific guidelines are presented in total.

For example, within the chapter considering Husbandry there are 11 subsections and information and guidelines are presented on: Quality of Life; Daily Care and Maintenance; Record Keeping and Documentation; Standard Operating Procedures; Housing; Nutrition and Feeding Practices; Handling and Restraint; Animal Training; Quarantine and Isolation; Behavioural or Management Separation; and Breeding Management. Within section 7.1, Quality of Life, Guideline 43 states that: “Institutions housing marine mammals must give careful attention to the quality of life of the animals and address their social and behavioural requirements throughout the duration that they are held, as the interests and activities of the animals may change with age”.

The CCAC emphasise that in order to successfully cater for the many needs of captive marine mammals, an interdisciplinary approach must be used, involving the Animal Care Committee (ACC), management, animal care personnel, veterinary personnel, and investigators.

It is hoped that the guidelines will improve the care of marine mammals and the way in which experimental procedures are carried out.

Other guidelines currently under development by the CCAC include: genetically engineered animals; care and maintenance of rats; care and maintenance of mice; and care and maintenance of non-human primates.

CCAC Guidelines on the Care and Use of Marine Animals (December 2014). A4, 73 pages. Canadian Council on Animal Care. Print ISBN 978 0 919087 55 2. Available at: http://www.ccac.ca/Documents/Standards/Guidelines/CCAC_Marine_Mammals_Guidelines.pdf.

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Californian legislation to prevent the confinement of veal calves, egg-laying hens and pregnant pigs now in effect

In November 2008, Californian voters passed, by a margin of 63 to 37%, an initiative measure called Proposition 2. Proposition 2 sought to improve the welfare of farmed animals by preventing the cruel confinement of calves raised for veal, egg-laying hens and pregnant pigs, and resulted in a number of new provisions being added to the Californian Health and Safety Code, Chapter 13.8, Farm Animal Cruelty.

The new legislation, cited as the Prevention of Farm Animal Cruelty Act, states that: “a person shall not tether or confine any covered animal, on a farm, for all or the majority of any day, in a manner that prevents such animal from: a) lying down, standing up, and fully extending his or her limbs; and b) turning around freely”. The Act includes a division on definitions which explains the meaning of a number of terms. For example, “fully extending his or her limbs’

means fully extending all limbs without touching the side of an enclosure, including, in the case of egg-laying hens, fully spreading both wings without touching the side of an enclosure or other egg-laying hens”.

The Act, which came into force on 1st January 2015, following a 6-year phase-in period, effectively bans traditional egg-laying battery cages, gestation stalls for sows, and veal crates for calves. Non-compliance may result in a fine up to US\$1,000 and/or imprisonment in a county jail for up to six months.

There are a few exceptions during which these new provisions will not apply, including: scientific or agricultural research; examination, testing, individual treatment or operation for veterinary purposes; transportation; rodeo exhibitions, state or country fair exhibitions, 4-H programmes, and similar exhibitions; slaughter of a covered animal in accordance with humane slaughter provisions; and to a pig during the seven-day period prior to the pig's expected date of giving birth.

The industry most affected by the change in legislation is laying hens. California is one of the top 10 egg-producing states in the United States of America (USA), and has a laying hen population of 13 million birds (the total population of laying hens in the USA is 362 million) (USDA 2015). With regards to veal calves, it is estimated that California raises approximately 120,000 each year (an estimated total of 566,000 are reared in the USA each year) (USDA 2014a). It is likely that only a minority of these animals are raised in traditional veal crates since a number of states in America have already banned veal crates and in 2007 the American Veal Association introduced a resolution to phase out veal crates and transition to group-housing by 2017, and many AVA farmers have already converted to group-housed systems. California also houses around 6,000 breeding pigs (1% of the total 6 million breeding pigs in the USA [USDA 2014b]).

California Health and Safety Code: The Prevention of Farm Animal Cruelty Act (January 2015). Chapter 13.8, Sections 25990-25994. California Proposition 2, Standards for Confining Farm Animals, was voted on and approved as a new state statute on 4 November 2008 and was operative from 1 January 2015. The California Health and Safety Code is available at: <http://www.ca.gov/HealthSafety/LawsAndRegs.html>.

Chickens and Eggs (February 2015). A4, 20 pages. United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). 27 February 2015. ISSN: 1948-9064. Available from the following website: <http://www.nass.usda.gov/>.

California Livestock Reviews (December 2014). United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). 2014(a). Records accessed for months January 2014 to December 2014. Available at: http://www.nass.usda.gov/Statistics_by_State/California/Publications/Livestock/Review/index.asp.

Quarterly Hogs and Pigs (December 2014). A4, 18 pages. United States Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). 2014(b). 23 December 2014. ISSN: 1949-1921. Available from the following website: <http://www.nass.usda.gov/>.

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Smartphone App seeks to assist broiler and turkey producers in tracking bird health and welfare

Approximately 17 million broiler chickens and 280,000 turkeys are slaughtered every week in the United Kingdom (UK) (Defra 2015). The majority of these birds are reared in closed-housed systems in large flocks (often several thousand birds) and the environment is carefully controlled (eg temperature, lighting, ventilation, humidity, feed and water are all automated). In the UK, a daily inspection of poultry houses must be carried out to check that birds are behaving normally and that automated systems are running correctly. It can be challenging for poultry producers to assess and record the health and welfare of birds in their care due to the vast numbers of birds and the frequent turnover of flocks.

To assist turkey producers in successfully monitoring their birds a new smartphone App has been developed by Professor Inma Estevez at Neiker-Tecnalia, Spain. Professor Estevez specialises in poultry behaviour and welfare and has been working on the development of turkey indicators as part of the Animal Welfare Indicators (AWIN) project. AWIN is financed by the EU VII Framework Program and seeks to develop animal welfare assessment protocols, with a focus on sheep, goats, horses, donkeys and turkeys. In collaboration with other scientists at Neiker-Tecnalia, Spain, the University of Milan, Italy, and Purdue University, USA, Professor Estevez tested and validated the use of transect walks when sampling commercial poultry (Marchewka 2013, 2015). The team then went on to develop a suitable, and user-friendly platform that poultry producers could use to assess and record information for their flocks.

The result is i-WatchTurkey, a smartphone App available for download from Google Play, which allows users to quantify the health and welfare status of their birds in a standardised and science-based way. Initially, users are required to enter some data specific to their farm and flock by completing a short survey (eg bird strain, age, housing). Following this, users can begin to evaluate their flock by walking in transects through the house and using the touch screen of their smartphone (or tablet) to record their observations. Observations that may be recorded include: immobility, severe lameness, injuries and unwanted behaviours, amongst others. Users may also include other parameters of interest or score birds with multiple problems. The incidence of health and welfare measures collected is automatically standardised by the number of birds in the flock at the time of assessment and the number of transects performed. If using the App in the online mode during inspection, then the date, time, geographic location and weather conditions are also automatically recorded. All data collected when using the App are saved in comma-separated values (CSV) format (which is .XLS compatible) thereby facilitating further analysis if desired. Additionally, the App can automatically