

## Impact Objectives

- Create a global hub for research and education in animal welfare
- Study the impact of diseases and pain on animal welfare
- Develop animal welfare assessment protocols

# Knowledge is power

*Working collaboratively on the AWIN project, Coordinator **Professor Adroaldo Zanella** and Advisor **Professor Donald Broom** are focused on ensuring that the very best scientific information on animal welfare is easily available to stakeholders and the public. Through a series of videos and project newsletters the pair emphasise the importance of the collaborative nature of AWIN in achieving this. Here we survey the achievements of the project*

### **Can you outline how the Animal Welfare Indicators Project (AWIN) is structured?**

AWIN is a project sponsored by the European Commission and the Directorate-General for Research and Innovation and the project is organised in five work packages. The main goal of Work Package 1 is to develop a toolbox to assess the welfare of animal pain. Work Package 2 is to understand when a disease is a welfare concern. Work Package 3 takes into consideration the role of the pre-natal environment on health and welfare outcomes. Work Package 4 is the Global Hub for Research and Education in Animal Welfare which is a one-stop shop for animal welfare science that provides a portal to share information on animal welfare to a wider audience and also helps to share information from AWIN to the different actors that are involved in animal welfare.

### **How important is the Global Hub for Research and Education in Animal Welfare to disseminating the information gathered through the AWIN project to the wider husbandry community?**

Around the world people have a lot of concerns about the welfare of animals but

they really want to have facts about what is good and what is not good from the point of view of the animal. Nowadays, animal welfare scientists are able to measure this. So on the Global Hub for Research and Education in Animal Welfare information is going to be available for anybody who wants to get some facts about animal welfare. They can investigate, can find out for themselves, and will be able to evaluate, looking at their own animals. Whether they are a farmer or a pet owner or they own a horse, they will be able to evaluate how good things are for that individual animal or how good things are in their farm, in their unit where there are a lot of animals. How you precisely measure is an important thing and providing information to everybody around the world, I think, is a very important service which this global hub is now doing.

### **In what way is the project supporting leadership and international collaboration in animal welfare research?**

The most important mission of AWIN is to promote networks of excellence. Our beneficiaries, in 10 institutions, have been fostering local, regional and international relationships to create

long-lasting multidisciplinary networks in animal welfare science. The Scottish Agricultural College, as one example, has taken leadership in promoting interactions among Scottish organisations engaged in animal welfare research. We are working very hard to interface with other animal welfare initiatives in Europe and across the globe. The international outreach of AWIN is exceeding our expectations. New partnerships are developing across the 10 beneficiary institutions and are primarily supported as a result of the superb plan for mobility of PhD students and postdoctoral fellows. Integration across the beneficiaries has been tremendous and our team excels in promoting exchange of information and resources.



# Revitalising animal husbandry practices

*Through their work developing indicators for testing animal pain, the AWIN team is taking a balanced, science-based approach to animal welfare and by sharing knowledge and information is helping secure the future of Europe's animal industry*

The Lisbon Treaty, which came into force in 2009, essentially set the scene for the future of Europe's approach to animal husbandry in terms of outlining the minimum requirements for animal welfare. The Treaty recognises animals as sentient beings and requires that full regard is paid to the 'welfare requirements of animals'. The Treaty responded to growing concern amongst the general public about the treatment of animals and a call for reducing pain for farmed animals.

In response, the European Animal Welfare Indicators Project (AWIN) was launched in 2011 to address the development, integration and dissemination of animal-based welfare indicators, with a particular emphasis on the assessment of pain and on how animals recognise pain. The project is all about reducing animal suffering through the development, integration and dissemination of information on animal welfare indicators.

The recognition and assessment of pain is a focus of the work packages that make up AWIN because it is seen as a driver of animal welfare problems, but has tended to be overlooked in the past assessments on animal welfare. The relationship between pain, diseases and animal welfare is being studied by looking at five commercially important species: sheep, goats, horses, donkeys and turkeys. These species have been chosen for research

because, although they are commercially relevant worldwide, they have not generally been considered in previous assessments.

## A UNIQUE BLEND OF RESEARCH AND EDUCATION

The AWIN project has been set up in a way that truly integrates science with communication in a collaborative environment and aims to link animal welfare and education. All of the work packages are complementary, with each carrying out research and education on two or more of the key species, with some outputs relevant to all animals. For example, Work Package 1 has developed a list of key animal-based indicators for all of the five species which have then been incorporated into conversations about assessment protocols in the other work packages.

To ensure the routine on-farm use of indicators, a network of stakeholders has been set up. This provides a forum where any barriers to application can be identified early on, a process that also improves the uptake of the indicators once finalised. These indicators then feed directly into Work Packages 2 and 3 to form a basis for selecting specific measures. Leigh Murray, Research Assistant, has been researching human-donkey relationships, developing welfare protocols and investigating indicators of pain in donkeys as part of the AWIN team. She explains that it is

important to help educate handlers and owners in how best to treat their donkeys, ultimately setting up a positive animal-human relationship in which both parties involved benefit. From her perspective the welfare measures being developed through AWIN are essential in improving animal welfare: 'Due to their stoical nature, it is very difficult to determine whether donkeys are in pain – they give nothing away. Thus the importance of developing protocols which may assist us with understanding what signs to look for, both physically and behaviourally, are crucial to improving a donkey's overall welfare.'

Work Package 2 is addressing how disease and pain impact on caring for all five species of animals through a Europe-wide survey, assessing production animals and collecting data on behavioural and physiological indicators. This work package is also looking at more in-depth biomarkers of pain, the biomarkers which tend not to be used routinely on-farm, and is being undertaken by research institutions in the United Kingdom, Portugal and Germany. The Animal Welfare Biomarkers Laboratory was set up to help create protocols for, and identify biomarkers of, animal welfare, using a range of experiments designed to prevent pain in pregnant or diseased animals. An important part of the work involves working closely with veterinarians to study the relationship between diseases



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and animal welfare, such as the genetic determination of the susceptibility of foot-rot in sheep.

The pre-natal environment is another area of husbandry that is being given attention by the AWIN team through Work Package 3. In particular, animal density, group size and human handling of pregnant females and their offspring in goats, sheep and horses. It is important for these scientists to understand factors that affect pre-natal welfare and where the validity of welfare indicators is compromised. To this end, this work package is using behavioural, physiological and brain measures in addition to the welfare measures developed by other work packages. For example, some of the preliminary results of AWIN research by the Czech Republic's Institute of Animal Science into changes in heart rate of horse mares as a result of pre-natal stress indicate that there are at least short-term negative effects of abrupt artificial weaning on domestic mares.

#### OPEN COMMUNICATION AND DISSEMINATION

One of the most exciting outputs from AWIN is produced by Work Package 4 in the form of the Global Hub for Research and Education in Animal Welfare, which was launched in 2013. This hub integrates scientific knowledge obtained by AWIN researchers with technology, pedagogy and design into an easily accessible online content management system. The idea behind it is to link scientists and their research information with a wider audience, including farmers, veterinarians and the general public. The AWIN team has also created a series of learning objects. For example, the 'Horse Grimace Scale' application has been developed to help horse owners and veterinarians score pain using facial expressions. All of the technology has been developed to make sure that access to the information is user-friendly.

The assessment protocols have been translated to interactive applications for smartphones and tablets and are free to

download. The application 'WelGoat' is for farmers and veterinarians who need easy access to on-farm practical pain assessment tools for dairy goats suffering from lameness and claw overgrowth. To ensure that the content on the hub is technically accurate, it is all peer-reviewed by the International Society of Applied Ethology. Research, teaching and outreach activities are managed through the Global Research and Teaching School in Animal Welfare Science. They have developed an online whiteboard animation targeting children between six and eight years of age to teach them about the different farming practices turkey farmers use to reduce unnecessary suffering. These types of products are valuable education tools and raise awareness of new information about animal pain.

The AWIN collaboration has been undertaking a number of stakeholder engagement initiatives. Information about the project was presented at a meeting between Brazil and the European Union designed to address animal welfare issues and highlighted at the Animal Welfare Legislation Workshop at the University of São Paulo. In addition, an open online course in Animal Behaviour and Welfare was developed, which incorporated a number of topics where AWIN science and educational materials were extensively used.

This project, having created the largest peer-reviewed portal for animal welfare science in the world, has proven to be very successful at reaching out to the community and engaging with stakeholders. The project's Welfare Indicators Report Summary states that 'AWIN delivered talks to more than 30,000 participants and was present in events with audiences exceeding 253,000 people'. With such huge efforts by the AWIN initiative to share information on animal perspectives and facilitate international discussions, its goal of improving science-based policies for animal welfare across the globe is certainly well on the way to being achieved.

## Project Insights

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### PARTNERS

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### PROJECT LEADER BIO

**Adroaldo Zanella** is based at the School of Veterinary and Animal Science at the University of São Paulo. After gaining his PhD from the University of Cambridge, he has been focusing his efforts on the role of early environmental factors in shaping adaptive responses of animals.

