

## WELFOOD VIRTUAL CAMPUS FOR ANIMAL WELFARE – ENVIRONMENT – FOOD QUALITY AND SAFETY STUDIES

Szücs, E.<sup>1</sup>, Geers, R.<sup>2</sup>, Praks, J.<sup>3</sup>, Sossidou, E.<sup>4</sup>, Jezierski, T.<sup>5</sup> and Poikalainen, V.<sup>3</sup>

<sup>1</sup> *Szent István University, Faculty for Agricultural and Environmental Sciences, Gödöllő, Hungary;* <sup>2</sup> *Catholic University, Zootechnical Centre R&D, Leuven, Belgium;* <sup>3</sup> *Estonian University of Life Sciences, Institute of Veterinary Medicine and Animal Sciences, Tartu, Estonia;* <sup>4</sup> *National Agricultural Research Foundation Animal Research Institute, Giannitsa Greece;* <sup>5</sup> *Polish Academy of Sciences, Institute of Genetics and Animal Breeding, Jastrzebiec*

### ABSTRACT

The WELFOOD Virtual Campus has been developed as a vocational training program on animal welfare – environment- food quality and safety interactions with a global look at all issues related to animal welfare in farms, during transport and slaughter, including processing of food and traceability of quality information implications. The reason was that training on animal welfare as such with regard to recent research results in relation to both environmental interactions, and food quality and safety, are becoming in the limelight of consumers and enhancing societal awareness. Modules are assigned into three Courses: (1) Animal welfare, (2) Environmental impacts on and of animals, and (3) Food quality and safety. The areas cover different topics and lessons. The basic materials are uploaded to the Project Homepage (<http://www.welfare.szie.hu>) and upgraded in English as lingua franca and languages of the Partner countries (Estonian, Flemish, Greek, Hungarian and Polish). In depth background materials on the topics are available in English. Access to further studies can be consulted through links to glossary, relevant literature and websites. For better understanding and demonstration video clips provide assistance the learners. The performance of students is evaluated through computer random generated quizzes, and assays/case studies depending on education levels (vocational training, BSc, MSc, and PhD). Impetus for applying e-learning was given to this development due to the high didactic value of ICT. E-learning can be defined as delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device in some way to provide training, educational or learning material (*Stockley, 2003*) which can also use a variety of equipments in online training or education, such as even CD-ROMs and DVDs. This web based system can be managed in a so called Moodle (Modular Object-Oriented Dynamic Learning Environment) program (*Vágvölgyi, 200*). Model is a software package for producing internet-based courses and web sites (<http://docs.moodle.org>; <http://www.moodle.org>; <http://www.moodle.com>) which is provided freely as an Open Source software package for course management system (CMS). The system is designed using sound pedagogical principles to help educators create effective online learning communities. The most important advantage of ICT assisted education system is the world wide and at any time accessibility in virtual environment. The paper was produced by the financial support of LEONARDO DA VINCI Pilot Project “Promoting quality assurance in animal welfare-environment-food quality interaction studies through upgraded e-learning – WELFOOD” HU-04-B-F-PP-170001 of the European Commission (2004–2007).

## INTRODUCTION

*The greatness of a nation and its moral progress can be judged by the way its animals are treated*” as Mahatma Gandhi put it (cit.: *Appleby and Hughes, 1999*). In the past and present people have always been concerned for animal welfare, but what is animal welfare, and what is good treatment? *Appleby (1996)* formulated the definition as “The state of well-being brought about by meeting their physical, environmental, nutritional, behavioural and social needs of the animal or groups of animals under the, supervision or influence of people.” In *Fraser’s (1989)* view “well-being” refers to endogenous states of being within an animal and “welfare” to human interventions designed to promote well-being. In *Hughes’s word (1976)* welfare is “a state of complete mental and physical health, where the animal is in harmony with its environment”, but it may be a subject of change. “Welfare can vary between very poor and very good. In order to use the concept of welfare in a scientific way it is necessary to specify the level of an animal’s welfare and not simply to reserve the word to indicate that the animal has, or does not have, problems” (*Broom and Johnson, 1993*). However what does “problems” mean? History, background and philosophy are dealing with “issues” and “problems” in which animals may suffer. To measure well-being we speak about assessment, to ameliorate suffering about solutions and about how to solve them in practice about implementation (*Appleby and Hughes, 1999*).

In a recent, comprehensive presentation discussed central moral issues involved in the treatment of animals in agriculture and introduces the major ethical concepts and principles that pertain to animal bioethics (*Pascalev, 2004*). It explores critically the concept of animal rights, animal suffering, animal welfare, and the moral values behind such movements as vegetarianism and animal liberation. Special attention is given to the issue of animal welfare in light of the latest advances in biotechnology such as cloning, genetic engineering and xenotransplantation. Some of the addressed questions are: What are the main ethical challenges that animal agriculture faces today? Is it moral to genetically engineer farm animals and can the need for greater productivity justify the genetic modification of such animals? Should we change the natural capacities of animals e.g., to reduce their ability to feel pain and increase their resistance to disease? What is the moral status of animals with human genes or genes from other animal species? What is involved in respecting animals?

Ever since there have been raised quite a lot of open questions to be answered. Consumers require healthy, safe and high quality food. Food production systems are tending towards those which are safe, sustainable, environment- and welfare- friendly, and which have low requirements for inputs. Interest of public has recently focussed mainly on three main areas in this issue such as animal welfare; environmental impacts on and of animals; and last but not least high quality and safety of foods. For this reason, significance of knowledge on quality assurance has been increasing in all phases of food production of animal origin. This novel approach of the topic requires special skills in sectors involved such as animal husbandry and food industry. Following the principle “from fork-to-farm approach” in foods of animal origin, i.e. traceability, transparency and labelling, research on production methods should aim to meet the consumer's requirements. Recent experiences and requests from commercial practice reveal expanding demand for experts who are skilled in the subject matter. Thus, knowledge on animal welfare x environment x food quality and safety interaction is needed for the development of competitive technologies with a global look at all issues related to animal welfare in farms, housing, processing and food safety of commercialised products. In the WELFOOD project multidisciplinary approach is applied for the transfer of recent scientific findings and knowledge on the specific area of this pilot project. Driving force for the application of e-Learning will be

dedicated to apply ICT having high didactic and added value and rapid transfer of knowledge in a fast and efficient way.

WELFOOD addresses objectives such as improvement and competencies of the skills in vocational training to promote employability and facilitate integration and reintegration in terms of capabilities and knowledge needed for improved technologies in animal husbandry and food industry. Emphasis is laid on skills in food quality assurance issues related to animal welfare x environment x food quality interactions required by public perception due to their role in food safety and security as well as ethical considerations. Significance and novelty of this area are in line with the recent developments in the EU and the rest of the world.

### **STRUCTURE AND DESCRIPTION OF COURSES**

Teaching materials of WELFOOD are structured into three Courses:

#### **1. Animal welfare**

- Ethical views concerning how to treat animals and their justifications
- Definitions of animal welfare in domestic animals
- Welfare assessment of production systems
- Improving welfare status of animals in different phases of production chain
- Animal welfare and preslaughter handling

Thus, the first course of the WELFOOD project focuses on the welfare of animals. The aims of this course are first of all to talk about the ethical views concerning how to treat animals. Secondly the definitions of animal welfare in domestic animals are described. The third objective is to speak about the assessment of welfare in different production systems. The ways to improve the welfare status of animals in different phases of the production chain and the effect of transport en preslaughter handling on welfare are also aims of this course.

#### **2. Environmental impacts on and of animals**

- Challenge of artificial environments to domestic animals
- Nutrient efficiency, direct and indirect emissions, manure handling and processing

This second course focuses on main aspects of environmental impact on and of animals. Animal husbandry and production chain of food of animal origin are characterized by complex interrelations with environment. Animal husbandry creates a burden to the environment e.g. by pollution with manure and on the other hand the quality of animal products depends on the quality of environment in which the animals are maintained and production takes place. Today's environment becomes more and more artificial and may have undesirable impact on animals. The quality of animal products and animal welfare may be influenced in a positive and desirable way by changes of the environment. This course is divided into two areas related to: (1) impact of environment (mainly feeding) on animals, and (2) impact of animals on environment (mainly manure handling and processing). Special attention is given to the most important animal products as milk, beef and pork and to possibilities to improve the quality of these products by modifications of feeding and animal maintenance systems. In relation to the growing interest of consumers for local food products of special taste, some materials are devoted to such local products at least in some countries.

### 3. Food quality and safety

- On-farm risk analysis
- HACCP at farm level
- Food and other products deriving from GMOs
- Animal welfare implications of farm assurance schemes
- Traceability and transparency
- Animal welfare-environment-food quality interactions : production consequences

This course focuses in the farm animal welfare quality specifications and standards and aims to promote food quality and safety in animal welfare-environment-food quality interaction studies through upgraded e-Learning. The course aims to support new knowledge and skills on quality assurance in all phases of sustainable food production of animal origin by further improvement of curricula in vocational training. In this module the candidates will first get an introduction to on-farm risk analysis, HACCP at farm level, GMOs products, they will study animal welfare implications of farm assurance schemes and the 'fork to farm' approach and then, they will explore the role of the quality assurance schemes at initial stages of the supply chain, from the point of production to slaughter. Basic specific concepts, ethics and legal aspects will be discussed and detailed examples will refer to human attitudes to farm animals, welfare and conservation. Further, the candidates themselves will test and study different systems and assurance schemes used in the livestock sector, through the use of scenarios, role-play and different collaborative tools in relevant subject contexts.

### COURSE E-LEARNING ACTIVITIES

For participating into the WELFOOD Course, students are urged to enrol on the website <http://welfood.szie.hu>.

The WELFOOD Educational Platform is based onto Model Open Source E-Learning platform (<http://docs.moodle.org>; <http://www.moodle.org>; <http://www.moodle.com>). Logging into the platform, students are introduced into the WELFOOD project and gets an overall idea of the structure of the Educational Material organized into the three major e-Courses. The front page of the website gives a general introduction to the WELFOOD project and an overview of the main content of the different courses included in the WELFOOD project. The student can choose between three different courses. Courses consist of a number of lessons. For every lesson there is an Internet-lesson and the full material is available in PDF-format. As a rule, the Internet lessons are destined for users who consider themselves as beginners and full material is destined rather for higher education, however, some full materials that are labelled as for vocational training are suitable for beginners.

For each topic there is a practice quiz, where students can test their skills without being graded. In the practice quiz students can submit each question separately to check their answer. The practice quiz can be saved without submitting so the student can continue with the quiz later. When the quiz is submitted the correct answers are shown. Practice quizzes can be applied several times. At the end of a course there is a final quiz. Students have two attempts to do this final quiz and this quiz is graded.

In the courses there is a link to the main Glossary where specific terms can be browsed alphabetically. There are different ways to communicate with other student(s) and with teacher(s).

There are forums for asynchronous communication. By adding a new discussion topic on a forum students can post their question which can be answered by other students or teachers on another moment. A student can also check the existing forum for other information. In the chat-rooms for synchronous communication student can communicate in real time with other students and teachers.

On the calendar students can check for upcoming events. It is also possible to check the grades.

A student enrolled in the course should follow the lessons. If he/she wants to learn more about the subject, he/she can read the full material added to each lesson or can use the different links whit the internet inside the lessons. To see pictures, tables or other available information there are links inside the presentation. To test their skills student can use the practice quizzes available for every topic. If student have questions they can ask them to teachers and other students by using forums and chat-room.

The WELFOOD web based system can be managed in a so called Model (Modular Object-Oriented Dynamic Learning Environment) program (*Vágvölgyi, 2004*). Model is a software package for producing internet-based courses and web sites (<http://docs.moodle.org>; <http://www.moodle.org>; <http://www.moodle.com>) which is provided freely as an Open Source software package for course management system (CMS). The system is designed using sound pedagogical principles to help educators create effective online learning communities. The most important advantage of ICT assisted education system is the world wide and at any time accessibility in virtual environment.

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### Links

<http://welfood.szie.hu>  
<http://docs.moodle.org>  
<http://www.moodle.org>  
<http://www.moodle.com>