# **DEPARTMENT OF AGRICULTURE TECHNOLOGY**

(http://tegeo.teiep.gr/en/)

## **1.ABOUT THE DEPARTMENT**

The Department of Agricultural Technology of the Technological Education Institute of Epirus (TEI of Epirus), offers highest level academic, research and development services regarding crop science, animal science and floriculture – landscape architecture.

# 2. STUDIES

The Department of Agricultural Technology of the Technological Education Institute of Epirus (TEI of Epirus), offers tertiary (higher) level academic, research and development services regarding animal science, crop science and floriculture – landscape architecture.

The infrastructure of the department, include laboratories for animal and plant tissues analysis, soil and plant nutrition laboratory, plant protection laboratory, open field experimental setups and state of art greenhouses (soil and hydroponic). Three directions are operating in the department representing its three main categories of interest.

The curriculum of the direction of Animal Science covers the cognitive object of Animal Science and relevant sectors, with an emphasis on the research and application of modern technology to production, nutrition, improvement, reproduction and health of domestic, companion, exotic and laboratory animals. It also involves production methods, processing and standardization of animal products. The directions of Crop Production and Floriculture – Landscape Architecture, offer curriculums based on agronomy, biology and engineering and their objective is to provide highest level education and conduct research in relevant fields.

The latest external evaluation reports of the three directions of the Dept. of Agricultural Technology of TEIEP can be found at:

- <u>Animal Production (3/2010)</u>http://www.adip.gr/eks/Final%20Report\_Animal%20Production\_Epirus.pdf
- <u>Crop Production (12/2011)</u>http://www.adip.gr/eks/EPITEI\_Crop%20Production\_Final\_Report.pdf
- <u>Floriculture Landscape Architecture (1/2012)</u>http://www.adip.gr/eks/Final%20report%20TEI%20Epirus%20revised%2006%2027% 20%2012.pdf

The department also cooperates with other academic institutions in the framework of professional, master and doctoral studies.

- <u>Erasmus IP</u>: <u>SUS-HORTO</u> (Advances in off-season vegetable production)
- <u>Master program</u>: "Agrochemistry and Biological Cultivation"

### **Division of Animal Production / Analytical data**

#### Personnel Data Animal Production Division

Employees (current year)	Research	Technical	Administrative	TOTAL
PhD or Post-Doctoral Level	4	-	-	4
Postgraduate Level	1	3	1	5
Higher Education Level	-	-	2	2
Superior Education Level	-	-	-	-
Secondary Education Level	-	-	-	-
Elementary Education Level	-	-	-	-

#### Presentation of the Division

The Animal Production Division covers the cognitive object of Animal Science and relevant sectors, with an emphasis on the research and application of modern technology in production, nutrition, improvement, reproduction, welfare and health of domestic, companion, exotic and laboratory animals. It also involves production methods, processing and standardization of animal food products.

The Division of Animal Production:

- a. Applies modern technological and scientific methods, as well as managerial practices, in animal production, in the processing of products of animal origin as well as the control of their quality and safety.
- b. Applies methods of hygiene in farm facilities, in the packing-processing plants and applies health management programs in the farm, biosecurity programs and preventive measurements in the farm sector.
- c. Applies modern technological and scientific methods enchasing productivity and reproductive performance.
- d. Develops rationalistic methods of feeding formulation from an economic and scientific perspective.
- e. Undertakes the environmental and legal problems of stock-breeding businesses and enterprises.
- f. Participates in the technological research, education and development and application of innovations in the sector of Animal Production.
- g. Innovative production of functional foods, mainly concerning goat, sheep milk, cheese and poultry and pig meat.
- h. Designs and supervises the application of agricultural-animal production studies and organizes the establishment and the production phases of animal production farms.

The Department is involved in postgraduate studies such us Agrochemistry and Organic Farming, Agriculture and Environment, Production of Animal and Plant originated Quality Products in a Mediterranean Environment and the last one started in 2014 in Aquacultures, all of them in collaboration with the University of Ioannina and the University of Thessaly. The scientific interests of the scientific personnel involve objectives focusing on animal health, with particular interest in small ruminants' mastitis in relation to sheep and goat behavior, or to disease resistance in local breeds. An increase number of publications relevant to the present proposal prove that our assortment with indigenous breeds and animal welfare coming from the local production, lights a modern and crucial part of our scientific perspective.

Environmental friendly animal production is an interesting task and also the in vitro and in vivo actions in specific cell lines and animal models of native natural volatile aromatic compounds, which can play a possible role in preventing human health. Functional food is also a part of our present scientific work, related with pork and poultry production, furthermore proteomic and lipidomic analysis of rare breeds of sheep and goats and food products from indigenous breeds and production of biomaterials and tissue engineering from productive animals are our key work for the future. The factors show our progress in the scientific field is the collaboration with well known Institutes and Universities worldwide, the increase numbers of papers published in International scientific periodicals and the recent expenses regarding scientific and laboratory equipment, expanding in that way our expertise in modern technologies. The scientific staff is consisted by Athina Tzora Professor Ph.D in Veterinary, Parasitology-Microbiology, D.V.M in Veterinary Medicine, Sotirios Kandrelis Professor Ph.D Range Ecology M.Sc in Range Science, B.Sc in Forestry, Ioannis Skoufos Professor Ph.D in Physiology and Animal Health, MSc in Animal Health, D.V.M. in Veterinary Medicine, Anastasios Tsinas Professor Ph.D in Animal Medicine and Pharmacology, D.V.M. in Veterinary Medicine, and Chatzizisis Lambros, Lecturer B.Sc in Animal Science. In addition, 13 part time scientific personnel undertaken post graduate degrees, assist as lectures and research fellows in the Department studies and in research and technology activity areas. Finally, 3 expert technicians working full time in three different laboratories, (Microbiology - Parasitology and Molecular Biology, Animal Nutrition and Nutrition Technology and Milk and Meat Technology) and 2 employees working the administrative office. at Basic target of the Animal Production Division is to prepare Animal Production Scientists able to support successfully the introduction of specialized scientific and technological knowledge of Animal Science to all Animal Production sectors. To achieve this, Dept. infrastructure mainly includes: (a) Units taken from the Science and Technology of Animal Husbandry, where emphasis is laid not only on the basic principles of genetics and domestic animal improvement and feeding, but also on the administrative practices of animal husbandry, which one must follow in order to achieve effective production of animal products, as well as on the control of the quality of these products I units taken from the Science of Animal Health and Welfare, where emphasis is put on the application of methods for the prevention of diseases, on the hygiene of animal housing and on the quality control and safety of animal and dairy products, and (b) Units taken from Sciences relating to the Protection of Environment, where stress is laid on the general principles of ecological exploitation of livestock production as well as on the production of organic animal and dairy products.

Study and research objects cover the following areas: (a) Animal Production and Management - Lab of Animal Anatomy and Physiology (Farm animal breeds, comparative

anatomy of domestic animals, physiology of growth and development of domestic animals, Livestock production methods, housing design and housing equipment, organization of farm enterprises performance and financial control of their efficiency productivity), (b) Animal Nutrition and Feeding - Lab of Animal Nutrition and Range Technology (General principles of animal nutrition, physiology of nutrition and metabolism of nutrients, nutritional requirements of productive farm animals, applied animal nutrition, feedstuff technology, common methods of analysis for nutrients and feedstuffs, general principles of ratio formulation, computing domestic animal diets, feeding systems and techniques, feed preparation and processing, Nutritional disorders, feed safety, applications of biotechnology in the feeding industry), (c) Genetics and Domestic Animal Improvement and Reproduction -Lab of Animal Reproduction, Genetics and Molecular Biology (Qualitative and quantitative genetics, estimation of breeding values and performance testing - Mating systems -Selection methods, Genetic and domestic animal improvement and preservation of genetic material, genetic material management and technology, Reproductive physiology - Endocrinology and application to animal production, artificial insemination, reproductive biotechnology), (d) Animal Health and hygienic procedures - Lab of Animal Microbiology and Parasitology and Laboratory of Animal Hygiene and Infectious Diseases (Food Safety and Public Health, animal health and infectious diseases, applied methods for disease prevention, animal ethology and behavior, principles of applied veterinary pharmacology, nursing of companion animals and pets, safety and quality control on meat, milk and egg production systems, farm biosecurity, animal microbiology and immunology, animal parasitology), (e) Animal production and Protection of Natural Environment - Lab of Animal Husbandry and Agricultural Environment (Introduction to ecology and principles of ecological exploitation of livestock production, environment and extensive, semi-intensive animal production systems, gaseous waste, animal waste management, exploitation of abattoir sub products, organic animal production, environmental microbiology, farm waste management and environmental protection, welfare of domestic animals), and, (f) Technology of Animal Food Products - Lab of Meat and Milk Technology (Milk technology and dairy products, meat science and technology, organization and operation of industrial abattoirs, food Safety and quality control, certification of farm animal food products).

#### **3. SCIENTIFIC INTERESTS, PUBLICATIONS**

The scientific interests of our team involve objectives focusing on animal health, with particular interest in small ruminants' mastitis in relation to sheep and goat behavior, or to disease resistance in local breeds. An increase number of publications prove that our assortment with indigenous breeds and functional foods coming from the local production, lights a modern and crucial part of our scientific perspective. Environmental friendly animal production is an interesting task and also the in vitro and in vivo actions in specific cell lines and animal models of native natural volatile aromatic compounds, which can play a possible role in preventing human health. During the last 7 years, a number of papers have been published, in collaboration with well known Institutes and Universities worldwide. <u>Click here to visit publication's list.</u>

# 4. STAFF

# **Faculty Members**

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