

# 動物科學系

## 教育目標

- ◆培養學生具備遺傳育種、營養、生理、飼養管理、經營、動物產品加工、動物福祉、野生動物保育、休閒牧場規劃管理、生物技術等相關專業知識。
- ◆配合國家經濟建設及因應時代需要，造就理論與實用技術兼具的動物科技人才。
- ◆培養指導及服務農民的動物生產技術推廣人才。
- ◆培養動物資源生產計劃、管理及加工等人才。

## 課程規劃

本系設有大學部、碩士班及博士班，課程主要分為動物遺傳與育種知識、動物生殖與生理知識、動物營養、飼料與經營管理知識、動物產品加工利用與安全知識，同時訓練學生數理統計能力，並學習關懷、尊重生命與動物保育。目前本系畢業條件為，大學部需修足128學分，碩博士班學生需修足30學分始得畢業。

## 主要研究領域

- ◆**家禽育種研究室**：研究範圍涵蓋土雞選育、純種土雞保種、動物行為與福祉等。
- ◆**營養生理研究室**：開發多功能之益生菌，包括篩選菌株、探討在動物體之生理機能與免疫效果、醱酵量產之條件及商業化產品之研發。
- ◆**畜產經營研究室**：為目前全國各大學中唯一從事研究動物生長與生產之電腦模擬模式、專家系統在動物生產上之應用、以及畜產經營決策支援系統之研究室。
- ◆**肉品與副產物加工研究室**：是目前國內唯一以家禽副產物作為生醫材料的研究室，如雞腳膠原蛋白、雞冠玻尿酸、雞冠膠原蛋白及雞三角軟骨膠原蛋白等之萃取及醫學應用。
- ◆**動物產品貯藏研究室**：主要著重肉品之加工與貯存相關之研究，包含了加工技術、貯存保鮮、肉質改進等。
- ◆**動物產品利用及安全研究室**：從事動物性產品利用及安全相關之研究。
- ◆**動物蛋白質體研究室**：主要任務為應用分子遺傳學及蛋白質體學技術平台進行家畜禽繁殖力分子標記之研究與開發，同時參與基因轉殖家畜禽GMO隔離試驗場計畫，負責基因轉殖畜禽之蛋白質體監控。
- ◆**發育生物研究室**：應用核糖核酸干擾（RNA

interference, RNAi）技術、嵌合動物（chimeric animals）與二維蛋白質電泳分離技術等進行胚早期發育之研究。

- ◆**細胞生理研究室**：研究方向為動物生產中經濟性狀基礎機理之探討。
- ◆**乳製品加工研究室**：主要研究方向為研究動物產品有關之乳製品、微生物及益生菌，分析乳原料特性對於加工過程之影響。
- ◆**動物營養與生產研究室**：主要進行反芻動物營養與分子生物技術之研究。
- ◆**營養與生物技術研究室**：主要探討的方向與重點為以中草藥與農業副產物開發機能性動物飼料（添加物）。
- ◆**動物生理內分泌研究室**：研究方向著重於動物基礎內分泌學研究。

## 教研成果

全國最悠久的土雞研究中心及全國唯一的雞種源保育中心，禽畜性別、種別鑑定與SNP基因鑑定，產製台灣第一頭嵌合兔與第一頭基因轉殖兔、家畜卵子與胚胎學之細胞週期與抗熱機制之研究，首創密閉水簾式鵝舍調節產季，提高鵝農收益、全國唯一的飼料酵素檢驗中心，飼料戴奧辛、重金屬、黴菌毒素、環境賀爾蒙試驗中心，應用電腦科技於畜產經營研究，首創建置豬胃動態模擬器，多項副產物機能成分應用研發成果並申請專利。



▲動物科學系系館大樓  
The building of department of animal science.



▲本系教師從事雞種保育  
Professors engaged in conservation.

## Mission

To strengthen the common interests and collective good of member societies through a unified science-based voice that supports animal agriculture, animal products, and food systems globally through the effective and efficient management services.

## Curriculum

The department offers B.S., M.S. and Ph.D. degrees on basic and applied animal science. Major fields include nutrition, physiology, feed technology, food technology, feeding and management, animal production, behavior, breeding, genetics, endocrinology, and decision support systems. The department building, animal housings and various accessory facilities provide an excellent environment for extensive research in poultry, waterfowls, swine, dairy cattle, and goats, as well as in the processing of milk, meat, and egg products. Undergraduate enrollment is 180 and graduate enrollment is 70.

The B.S. degree has a course requirement no less than 128 credits, of which more than 50 credits must be taken in animal science. The graduate program is offered in five major areas of study, namely: animal breeding, animal nutrition and feed technology (in ruminant and monogastric animals), animal products processing, reproductive biology, and management of animal production.

## Core Research Topics

### ◆ Animal Genetics and Breeding

The breeding selection markers for livestock farming are developed through the application of molecular biotechnologies and genetic markers. It also conducts several genome research projects on reproduction, disease-resistance, behavior and functional genomic studies on Taiwan native chicken.

### ◆ Nutrition and Feeds

Research has been focused on the improvement of feed utilization, production and management techniques for poultry and animals.

### ◆ Livestock Processing

It covers the processing of milk, meat, eggs and fur/leather, with an emphasis on making best use of their physical and biochemical characteristics.

### ◆ Molecular Biology

They are focused on the applications of transgenesis to improve egg and meat qualities, and evaluate the productions of foreign proteins for medical uses by transgenic animals.

### ◆ Physiology and Reproductive Biology

Research projects are on the regulations of hormones, and the effects of day length on milk production and reproduction of seasonal breeders.

### ◆ Management of Animal Production

Many researches have been conducted on the bio-economic models for the simulation of animal production including pigs, sows, poultry and cattle, expert system, computerized feed formulation calculation, and recording and management system of animal production.

### ◆ Animal Physiology and Endocrinology

The research aim of this laboratory is to investigate the endocrine factors which regulates reproductive performance and production efficiency on livestock, and figure out the practicable management strategy to against environmental stresses and optimize reproductive performance in order to improve the production efficiency in native dairy farms, particularly in cows and goats.

### ◆ Dairy Processing and Microbiology

We want to develop novel dairy products which are suitable for Taiwan and we are also interested in physicochemical changes during dairy processing and in effects of raw milk properties on dairy processing and quality. Another research topic is microbiology and probiotic. We will investigate the role of microbes in animal product production and quality control.

## Achievements

In addition to the educational goals, we are conducting several research projects as follows:

- (1) Establishment of the techniques of DNA finger printing, cloning and construction of high economic-value genes for production of transgenic animals.
- (2) Breeding and preservation of Taiwan native chicken.
- (3) Development of the food preservative, mucopeptide N-acetyl muramylhydrolyase extracted from eggs.
- (4) Application of various animal resources and new materials for feeds.
- (5) Cloning, construction and transfer of many genes into E. coli or yeast for expression studies.
- (6) Production of transgenic and cloned animals.
- (7) Decision support system online.