National Chung Hsing University

Introduction to Department of Horticulture

Department of Horticulture

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Taiwan, R. O. C.

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Introduction

Historical Background

The Department of Horticulture was originated from the Special Division of Agronomy and Forestry, which was affiliated to Taihaku (Taipei) Imperial University an independent campus named Taichung Academy of Agronomy and Forestry. After the restoration of Taiwan, the Academy was re-instituted as Taiwan Provincial College of Agriculture, and the Research Laboratory of Horticulture was established under the Department of Agronomy. The Department of Agronomy was then renamed as Department of Agronomic Science, and sub-divided into Agronomy and Horticultural groups in 1949. Department of Horticulture was founded and independent of the Department of Agronomy five years later. Master's and Doctoral programs were established in 1973 and 1992, respectively. At present there are 43 undergraduates, 33 Master of Science and 6 doctoral students enrolled annually.

Teaching Goals

1. In line with modern agricultural development as well as the demands of our society, we educate the future horticulturists with global views, modern concepts, advanced technologies, and the ability to apply theories into practice;
2. Using fruit, vegetable and flower crops as basic materials for developing modern breeding technique, biotechnology, postharvest handling and computer automation. Hopefully students with develop specialized skills with which to handle the problems that will confront in the future;
3. Beautification of environment and its related applications are emphasized to meet the high living standards of the modern society.

Research Areas

Research Areas

1. ***Pomology*** **:** It conducts researches on micropropagation of fruit trees, plant tissue analysis, controlled-atmosphere storage of tropical fruits, off-season production of fruits, mineral absorption of fruit trees, horticultural management, and improving production of grapevine, papaya, mango, and Indian jujube.
2. ***Olericulture*****:** The vegetable programs feature the influences of environmental factors upon crop yield and its quality, improving seed quality and viability, plug seedling production system, growth medium, and delicate horticulture.
3. ***Floriculture:*** Researches concentrate on the improvements of flower seedlings production techniques, regulation of flowering period, flower quality improvement, breeding and handling or storage of cut flowers.
4. ***Biotechnology*****:** It conducts researches on cloning and transformation of stress resistant genes into cruciferous vegetables, developing the transgenic plants as bioreactor, as well as establishment of the molecular markers in horticultural crops.
5. ***Landscape Gardening*****:** The programs highlight the planning and designing of outdoor spaces. Researches have been emphasized on the landscape evaluation and their applications, the testing of planting design principles, computer simulation, landscape ecology, the development and management of natural resources, as well as the benefits of landscape.

Faculty and Research Areas

Faculty

Sung, Yu Professor

Seed Physiology, Vegetable Production and Physiology

Lin, Huey-Ling Professor

Nutrient Analysis and Diagnosis in Fruit Trees, Post-Harvest Physiology and Storage of Fruit Trees, Floral Design and Application

Wu, Chen-Fa Professor

Evaluation of Landscape Ecology, Gardening Experiment and Simulation

Chang, Chen Professor

Orchid Cultivation and Breeding, Tissue Culture, Propagation of Flower Bulbs and Native Flowers

Chang, Jer-Chia Professor

Cultivation, Physiology and Breeding of Fruit Trees

Liu, Tung-Chi Assoc. Professor

Landscape Design and Planning, Tree Doctor

Hwang, San-Gwang Assoc. Professor

Vegetable Production and Physiology, Crop Molecular Genetics

Pan, I-Chun Assoc. Professor

Post-Harvest Handling, Molecular Breeding, Biotechnology of Horticultural Crops

Chen, Ching-Cheng Assist. Professor

Fruit Physiology, Variety Improvement, Plant Biotechnology

Chen, Yen-Ming Assist. Professor

Flower Breeding and Cultivation, Gene Transformation and Protoplast Fusion

Faculty and Research Areas

Chen, Chin-Mu Assist. Professor

Flower Breeding and Protected Culture, Ornamental Trees

Tu, Hung-Ming Assist. Professor

Landscape Planning, Landscape Ecology, Horticultural Activities, Leisure and Recreation, National Land Policy

Chen, Chang-Lin Assist. Professor

Stress Physiology, Post-Harvest Handling of Horticulture Crops, Breeding of Stress-Tolerant Crops

Teaching and Research Facility

1. *Teaching Facility and Laboratory*

There are four undergraduate teaching classrooms, three graduate teaching classrooms, one drafting classroom, one seminar classroom, two conference room, and library information room, as well as faculty and graduate student offices in Department's building. Laboratories specialized for teaching and research of various sections of this Department include pomology, vegetable crops, floriculture, biotechnology, plant mineral nutrition, plant tissue culture, horticultural products handling, and landscape horticulture. In addition, we also have a landscape design studio and an advanced computer classroom for the landscape majors. All laboratories are equipped with up-to date facilities and scientific instruments. Deep-freezing refrigerators, sterile culture rooms, phytotron and plant growth chambers are also furnished for teaching and research.

Teaching and Research Facility

2. *Experiment Farm*

There are five greenhouses, one transgenic plants greenhouse, two cultural practice fields, and one landscape-demonstrating field on campus. Besides, two research farms, Highland Horticultural Research Farm locating in Jen-Ai Village, Nan Tou County, and Viticulture Research Farm in the suburb of Taichung, provide teaching, research, and extension services.

3. *Equipment and Instrument*

The scientific instruments include: Atomic Absorption Spectrometry, Cell Microinjection Apparatus, Laser Densitometry, High-Performance Liquid Chromatographer, Temperature and Humidity Chambers, Automatic Seeding Operation System, High Speed Refrigerated Centrifuge, Digital Color Laser Copy Machine, Portable Photosynthesis and Transpiration System, Spectrophotometers, Gas Chromatograph System, Plant Water Potential Instrument, Electroporator, Gene Gun Instrument, Cell Fusion Apparatus, Vegetables Germplasm Storage Room, Thermal Gradient Germination Table, Gradient PCR Instrument, Fluorescent Inverted Microscope, Stomata Conductance Instrument, and Photosynthetic Apparatus.

4. *Books and Journals*

The library of Horticulture Department has a collection of five thousands books and one hundred and forty volumes of journals, periodicals and reports written in Chinese, English and Japanese.

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