SAGA UNIVERSITY
ACADEMIC STAFF IN FACULTY OF AGRICULTURE

Resource Management and Society

Economics of Agricultural Marketing ..... Shiratake, Y.
Market structure and organization.

Regional Agriculture and Farm Management Kobayashi, T.
The change of the regional agriculture and the development of the farm management.

Regional Resource Management ..... Igarashi, T.
1. Geographical studies on landscape, communities, and land utilization of rural settlement.
2. Land improvement and sustainable developments.

Human Ecology ..... Inaoka, T.
1. Environmental change and human survival in Asia and South Pacific.
2. Development- and conservation-related issues in rural community.

Agrobiology

Crop Science ..... Arima, S. and Suzuki, A.
1. Morpho-physiological analyses on crop plants and their application to crop production.
2. Molecular mechanism on symbiosis between leguminous plants and rhizobia.

Plant Production Science..... Zheng, S.H.
1. Analysis on eco- physiology and productivity in leguminous plants.
2. Crop resources and sustainable agriculture.

Improvement of Tropical Crops ..... Nose, A. and Agarie, S.
1. Genetical and biochemical analyses of disease resistance of rice.
2. Genetics and physiology on development of productivity in tropical and sub-tropical crops.

Agricultural Production Engineering ..... Tanaka,M.
1. Environmental control for hydroponic culture of vegetables.
2. Nondestructive quality evaluation of agricultural products.

Animal Production ..... Wada,Y.
Effective animal production by animal genetics and animal reproduction science.

Integrated Field Science Ono, Y., Ueno, K. and Komai, F.
1. Production methods for sustainable agriculture.
2. Breeding and production for horticultural crops.
3. Animal production and management.

Agricultural Information Science

Agricultural System Information and Technology ..... Inaba, S.
1. Running resistance of agricultural rubber crawler.
2. Vibration analysis for agricultural vehicles.
3. Database for an agricultural production.
4. Measurement of glassy ratio of rye with image processing technology

Regional and Environmental Planning ..... Kondo,F.
1. Sedimentation and Self-Weight Consolidation of Clay Suspension.
2. Consolidation Settlements of Clay Ground.

Water Environmental Engineering ..... Haraguchi,T.

1. Preservation of the water environment in agricultural field
2. Water utilization for agriculture

Agricultural Environmental Engineering

Environmental Subsurface Science ..... Handa, S. and Cho, H.

1. Transport of water, salts, ions and heat in unsaturated soil.
2. Geo-electromagnetic surveys of ground water, the crust and the upper mantle by the GDS and MT methods.

Environment Science on Shallow Sea and Tidal Flat Seguchi, M.

1. Environment characteristics of the Ariake Sea as seaweed and fish production area.
2. Remote sensing for analyzing river water flow and suspending matter diffusion in shallow sea.
3. Development mechanism of tidal flat. Environmental characteristics of shallow sea and tidal flat as seaweed and fish production area.

Physical Environmental Information for Agriculture ..... Tanaka, A.

The environmental analysis of soil, water and atmosphere, and the application of this information to help evaluate crop-productivity of land.

Biotechnology and Plant Breeding

Genetic Engineering ..... Tanimoto, S. and Ishimaru, K.

1. Identification of plant flowering-hormone.
2. Genetic analysis of plant differentiation.
3. Elucidation of plant salt tolerance.
4. Biosynthetic regulation of poly-phenols in plant cells.
5. Production of poly-acetylenes in plant cells.
6. Transformation of medicinal and horticultural plants with *Agro-bacterium rhizognenes*.

Plant Propagation ..... Isshiki, S.

1. Genetics and systematics of eggplant and its related *Solanum* species.
2. Cell, tissue and organ culture of vegetables and ornamentals.
3. Breeding of eggplant.

Genetics and Plant Breeding ..... Anai, T.

1. Molecular breeding in rice and soybean.
2. Development and utilization of breeding methods based on gene manipulation.
3. Improvement of soybean fatty acid composition by induced mutation.

Fruit Tree Science ..... Matsumoto, R.

Fruit tree science; Citrus breeding.

Soil Fertility and Plant Protection

Soil Environment and Plant Nutrition ..... Inoue, K.

1. Environmental control of soil and water cultures for high quality crop production.
2. Development of novel, high-efficiency fertilizers continuously supply Ca or Fe with plants.
3. Agro-chemical technology for land application of food waste compost and industrial organic waste.

Soil Microbiology ..... Someya, T.

1. Fluorescent microscopic estimation of soil microbial biomass.
2. Bioremediation of contaminated soil and groundwater.
3. Microbial community structure analysis of soil and manure.

Environmental Chemistry ..... Ueno, D.

1. Analytical chemistry for quantification of environmental pollutants (toxic man-made chemicals).
2. Evaluation of environmental quality (air, water, soil, biota etc.).
3. Method development of chemical analysis for environmental chemicals.

Plant Virology ..... Ohshima, K.

1. Functions of plant virus genes.
2. Genetic structure of populations of plant viruses.
3. Molecular evolution and ecology of plant viruses.
4. Interactions between host and plant virus genes.

Plant Mycology ..... Kusaba, M.

1. Classification and identification of plant pathogens.
2. Genetics of pathogenicity of plane pathogens.
3. Genetic diversity in fungal population.

Terrestrial Invertebrate Zoology

Entomology

Hayakawa, Y.

1. Physiological roles of insect cytokines.
2. Neurochemical and endocrinological regulation insect metamorphosis and diapause.
3. Defense mechanism in insect hemolymph.
4. Chemical ecology and physiology of provisioning shield bug, *Parastrachia japonensis.*

System Ecology .....Suzuki, N.

Intra- and inter- specific relationships in animals, and systematic analysis in the population and community.

Animal Behavioral Ecology ..... Nomakuchi, S.

Behavioral ecology of insects and other animals, and theoretical analysis using mathematical models and quantitative methods.

Biofunctional Chemistry

Biochemistry ..... Watanabe, K. and Sato, T.

1. Structure-function analyses of enzymes and protein engineering. (present target proteins: cold-active enzymes from antarctic organisms, ribosome-inactivating and antiviral RNA N- glycosidases, Gam protein from bacteriophage Mu).
2. The roles of proteins in complex cellular processes such as signal transduction, regulation, and transport (Phenoloxidases and related molecules are the targets presently).
3. Method development for protein structure and functional analyses.

Applied Microbiology ..... Kanda, K.

1. Gene analysis in temperate phages.
2. Molecular breeding of insecticidal bacteria.
3. Regulation system of gene expression in *Bacillus thuringiensis*.

Biomolecular Chemistry ..... Ueda, T.

1. Structure-activity relationship of antibacterial and antifungal peptides.
2. Interaction mode of peptides with polyphenols.

Food Resource Science

Food Science ..... Fujita, S. and Hayashi, N.

1. Mechanism and biochemical control of enzymatic browning in fruits and vegetables.
2. Isolation and characterization of polyphenoloxidase and other oxidases in plants.
3. Difference spectral analysis of polyphenolic compounds and L-ascorbic acid in foods.
4. Oligosaccharide and ethanol production from biomass waste through pressurized hot water process.

Food Chemistry ..... Mitsutomi, M.

1. Isolation and characterization of chitin-related enzymes.
2. Enzymatic modification of chitin and chitosan.
3. Enzymatic synthesis of functional oligosaccharides.

Food Hygienics ..... Hama, Y.

1. Structure and function of mucus glycoproteins and algal polysaccharides.
2. Isolation and characterization of novel glycolipids from marine animals.
3. Biochemical functions of deaminated neuraminic acid (KDN) and poly N-glycolyl-neuraminic acid.
4. Isolation and characterization of novel glycosidases from marine animals and microorganisms.

Nutrition Biochemistry ..... Yanagita, T.

1. Control of lipid and lipoprotein metabolism by food ingredients and drugs.
2. Nutrition and physiology of polyunsaturated fatty acids.
3. Enzymatic and genetic regulation of glycerolipid metabolism.
4. Lipid metabolism and cytokine regulation in hepatic diseases.