

#### Institute of Vegetable and Floriculture Science, NARO



Institute of Vegetable and Floriculture Science, NARO (NIVFS) conducts basic and practical research for breeding and cultivation of vegetable crops and ornamental plants, reduction of the impact of production on the environment, and development of technology for improvement of quality and efficient distribution of vegetables and cut flowers.

# **Overview of Research**

# **Division of Vegetable Breeding**

Anou Vegetable Research Station

Development of pioneering vegetable varieties for stable production with high profitability and advancement of breeding technology

- Brassicaceae Unit Breeding research for Brassicaceae crops
- Allium unit Breeding research for Allium crops
- Solanaceae Unit
- Breeding research for solanaceous crops
  Cucurbitaceae and Fragaria Unit
  Breeding research for supurbitaceous crops and strend process
- Breeding research for cucurbitaceous crops and strawberry
  Breeding Technology Unit Research for innovations in breeding of vegetable crops



#### **Division of Vegetable Pest Management and Functional Analysis** Anou Vegetable Research Station

Development of an integrated pest management system and technology for elucidation of the quality and functionality of the high-value added vegetables.

- Phytopathology Unit Research on sustainable management of vegetable diseases
- Insect Pest Management Unit Development of insect pest management for vegetables using indigenous natural enemies and physical control agents
- Quality and Function Research Unit Research on elucidation of the quality and functionality of the high value added vegetables
- Fruit-vegetables Physiology Unit Research on elucidation of the physiological mechanism of fruit formation for high-quality and high-yielding cultivation



(no treatment) 新技術 (new techno) Tea and coffee dregs as sterilization agents

Tomato varietal differentiation

### **Division of Vegetable Production System** NIVFS Headquarters, Tsukuba

Elucidation of the physiological and ecological characteristics of vegetables, and development of an innovative production system in greenhouse and open-field vegetable cultivation.

- Vegetable Physiology Unit Research on elucidation of the physiological and ecological response of vegetables and usage of the breed characteristics
- Leaf and Root Vegetable Unit Research to stabilize and maintain a high-yielding production of open-field vegetables to meet the market demand
- Greenhouse Crop Physiology Unit Research on high-quality, high yielding, high profitability and stable production of vegetable crops in greenhouse facilities
- Production Technology Unit Research on the environmental regulation, efficient usage of information, and improvement of operation system in vegetable production facilities
   Production Environment Unit
  - Research on reducing the impact of vegetable production on the environment, utilization of organic resources, and ensuring the safety and reliability of vegetable crops and the production environment



Vegetable production using the Optimum Subsurface Irrigation System (OPSIS)



**Tsukuba Plant Factory** 

#### **Division of Floricultural Genetics and Breeding**

Fujimoto, Tsukuba



Development of new traits in major ornamental plants via genetic transformation technology and utilization of genetic information in molecular breeding

- Genetic Engineering Unit Development of innovative flower traits by genetic transformation
- Genetics and Molecular Breeding Unit Genome analysis and elucidation of specific genes to develop new lines of ornamental plants with novel traits
- Quality Breeding Unit Development and breeding of high-value ornamental plants with important traits associated with flower color, disease resistance, long shelf-life etc.



Development of blue chrysanthemum by genetic transformation

# **Division of Floricultural Production and Postharvest Technology**

Fujimoto, Tsukuba

Development of high quality and stable production technology and post-harvest technology of major ornamental plants based on physiological studies on their growth and senescence.

- Physiology and Cultivation Unit Studies on the physiology of growth and flowering mechanism for the development of a stable production system.
- **Production Control Unit** Development of technology for environmental control and disease protection to facilitate high-quality flower production.
  - **Quality Control Unit** Development of technology for improvement of quality preservation and utilization of cut-flowers.



Technology for preservation of flower quality in cut roses

#### Towards recovery and reconstruction from the Great East Japan Earthquake and revitalization of agriculture in the Tohoku region

The Reconstruction Agency and Ministry of Agriculture, Forestry and Fisheries (MAFF) are promoting a research project on the advancement of technology for revitalization of food production in order to facilitate the development of new food production areas and recovery from the Great East Japan Earthquake.

#### **Research Activities of NIVFS**

- Development of production technology for year-round cultivation of strawberry in the Tohoku region Development of highly profitable tomato production system under Tohoku weather conditions
- Development of fundamental technology for large-scale crop production facilities in cold regions
- Development of high quality production system of lisianthus by large-scale hydroponic cultivation Implementation of open-field lighting technology for efficient production of summer-to-autumn flowering
- chrysanthemum Lisianthus production using advanced greenhouse technology

(Iwaki City, Fukushima)

# Organization

#### **Director-General**

Department of Planning and General Administration **Technical Support Center** Director of Vegetable Research - Director of Floricultural Research Division of Vegetable Breeding **Division of Vegetable Pest Management and Functional Analysis**  Division of Vegetable Production System Division of Floricultural Genetics and Breeding Division of Floricultural Production and Postharvest Technology

X Offices and divisions indicated in black are based in Tsukuba Headquarters, pink corresponds to Fujimoto campus, and blue corresponds to Anou Vegetable Research Station.

# NIVFS Access Info

- NIVFS Headquarters (Tsukuba) 3-1-1 Kannondai, Tsukuba, Ibaraki 305-8519, Japan TEL +81-29-838-6669 FAX +81-29-838-6673
- From TX Tsukuba Station, about15 min by taxi. Or take the Tsuku-bus south shuttle bound for Norin-Danchi Chuo and get off at Norin-Danchi Chuo bus stop (about 5 min walk).
- From TX Midorino Station, take the Kanto Tetsudo bus bound for Norin-Danchi Chuo and get off at Norin-Danchi Chuo bus stop (about 5 min walk).
- Fujimoto, Tsukuba 2-1 Fujimoto, Tsukuba, Ibaraki 305-0852, Japan
- From TX Tsukuba Station, take a taxi (about 15 minutes)
- · From TX Tsukuba station, take the Tsuku-bus south shuttle bound for Norin-Danchi Chuo and get off at Yatabe bus depot (about 10 min walk)
- · From TX Midorino Station, take the Kanto Tetsudo bus bound for Norin-Danchi Chuo and get off at Enokido bus stop (about 10 min walk).
- Anou Vegetable Research Station 360 Kusawa, Anou, Tsu, Mie 514-2392, Japan TEL +81-59-268-1331 FAX +81-59-268-1339
- · From Tsu station, about 20 min by taxi.
- From Kintetsu Tsushinmachi station, take the Miekōtsū bus and get off at Araki bus stop (about 30 min walk).

· · ·	1902	The National Agricultural Research Station in Okitsu, Shizuoka Pref. established a horticultural division.
	1986	National Research Institute of Vegetables, Ornamental Plants and Tea (NIVOT) was established with a department for floriculture research.
	2001	National Institute of Vegetable and Tea Science and National Institute of Floricultural Science were separately established as part of the National Agricultural Research Organization.
	2016	As part of the reorganization of National Agriculture and Food Research Organization (NARO), vegetable and floriculture researches were integrated into -Institute of Vegetable and Floriculture Science, NARO.





Institute of Vegetable and Floriculture Science, NARO (NIVFS) http://www.naro.affrc.go.jp/nivfs/index.html



# History