Organization

- Director General
  - Planning and General Administration
    - Planning Team
    - Management Team
    - Assistant Manager
    - Senior Research Coordinator
  - Ornamental Plants Research Division
  - Research Support Team

The NARO Institute of Floricultural Science (NIFS) is an institute belonging to The National Agriculture and Food Research Organization (NARO). In April 2011, NARO launched its third five-year mid-term plan (2011 to 2015), focusing on research and development in the following fields:

1. Development of an efficient system for producing ornamental plants
2. Molecular breeding of ornamental plants
3. Development of quality control technologies for ornamental plants

NIFS will continue to work hard to achieve these goals in floral science.

data

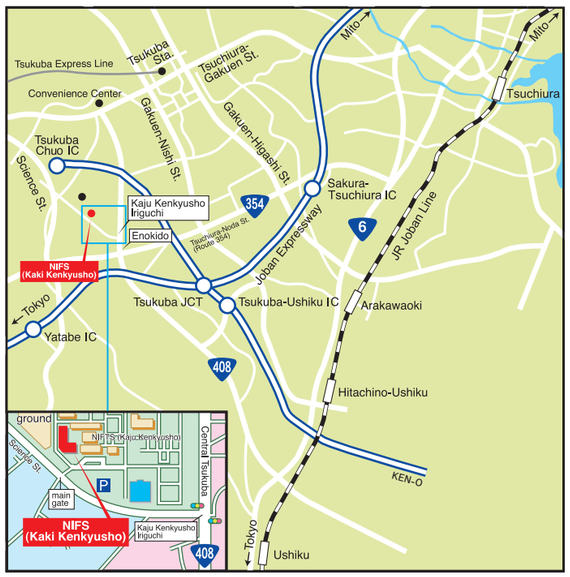
Human Resources (1 April, 2012)

Secretary	4
Technical Assistant	3
Scientist	34

Main Research Facilities (total area)

The main building	2599.59 (㎡)
Glasshouses (6)	1143.44
Closed glasshouse	446.95
Laboratory for multipurpose use	619.5

Map



History of NIFS and its antecedents

1902 Horticultural division was established in National Agricultural Research Station at Okitsu, Shizuoka.

1921 National Horticultural Research Station (NHRS) was re-established as an independent institute at the same location.

1951 Lab. of Flower Breeding was founded in Kyusyu branch of NHRS at Kurume, Fukuoka.

1958 Lab. of Flower Cultivation was founded in NHRS at Hiratsuka, Kanagawa.

1973 National Research Institute of Vegetables (NRIV) was established at Isshiden, Mie. Floricultural research was carried out in the five laboratories at Isshinden, Taketoyo (Aichi) and Kurume.

1981 Headquaters of the NRIV was moved from Isshinden to Anou, Mie.

1986 National Research Institute of Vegetables, Ornamental Plants and tea (NIVOT) was established, in which Dept. of Floriculture was founded. Lab. of Tree Planting was founded in Kurume branch at Makurazaki, Kagoshima.

1991 Lab. of Breeding Technology was founded at Anou in place of Lab. of Tree Planting at Kurume.

1996 Lab. of Plant Pathology was founded in Dept. of Floriculture of NIVOT.

2001 National Institute of Floricultural Science(NIFS) was established as one of the institutes of National Agricultural Research Organization (NARO) at Tsukuba, Ibaraki by reorganization of the part of the NIVOT.

2003 NARO was renamed to National Agricultural and Bio-oriented Research Organization.

2006 NARO was renamed to National Agriculture and Food Research Organization.

Access to NIFS

Train

1) From Midorino Sta. on Tsukuba Express Line
Bus for 'Yatabe-Shako Mae/Norin-Danchi Chuo/Tsuchiura'→ Enokido, 10min on foot (25min)

2) From Tsukuba Sta. on Tsukuba Express Line
a. Bus for 'Yatabe-Shako Mae/Norin-Danchi Chuo'→ Kaju Kenkyusho Iriguchi, 5 min on foot (20min)
b. Tsukuba Sta. → (Taxi, 6km) → NIFS

3) From Ushiku Sta. on JR Joban Line
a. Bus for 'Seibutsuken Owashi Campus' → Kaju Kenkyusho (20min)
b. Bus for 'Tsukuba Daigaku Byoin'→ Kaju Kenkyusho, 5 min on foot (20min)
c. Ushiku Sta. → (Taxi, 10km) → NIFS

Highway bus

1) From JR Tokyo Station (Yaesu-Minamiguchi)
For 'Tsukuba Center Tsukuba University' → Tsukuba Center (70min) → (Taxi, 6km) → NIFS

NARO Institute of Floricultural Science(NIFS)

National Agriculture and Food Research Organization

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http://www.naro.affrc.go.jp/flower/

(2012.8 1,000)

National Agriculture and Food Research Organization (NARO)

Institute of Floricultural Science (NIFS)

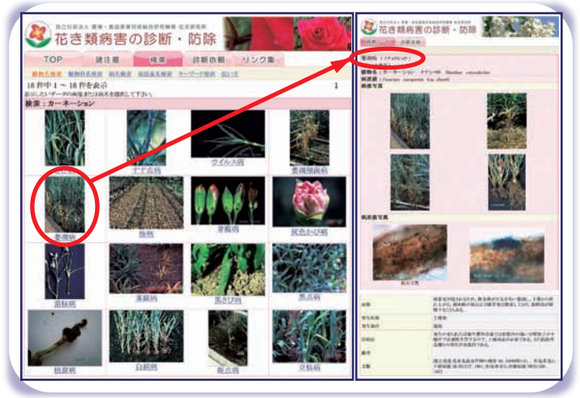
NIFS mid-term research program (2011~2015)

1. Development of an efficient production system for ornamental plants
2. Molecular breeding of ornamental plants
3. Development of quality control technologies for ornamental plants

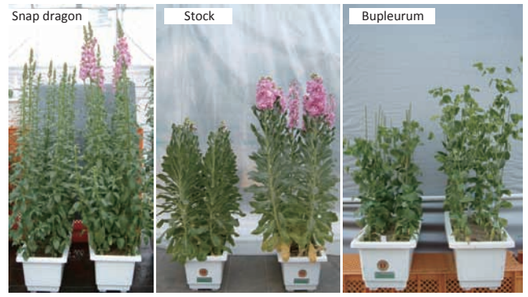
Development of an efficient production system for ornamental plants

For major ornamental plants, such as chrysanthemum and *Eustoma*, effects of light quality and photoperiod on flowering response are studied at the molecular level. We develop a method of pathogen detection to produce disease-free seedlings and study effects of light on disease resistance. In addition, we are developing a highly regulated flowering system based on flowering response to environmental stimuli, and an energy-saving production system that enables high yield with better quality using energy-saving management during winter.

Cultivation manual of *Eustoma* in winter season



A pictorial guide for flower diseases in Japan. https://kakibyo.dc.affrc.go.jp/
It includes more than 800 diseases.

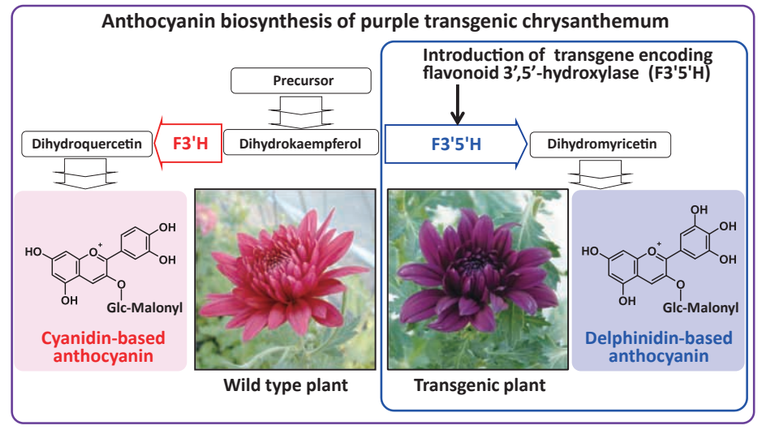


Effect of a brief end-of-day (EOD) far-red (FR) exposure on growth and flowering in several ornamental plants.
control(left), EOD-FR(right)

Molecular breeding of ornamental plants

Mechanisms controlling important ornamental characters such as flower color, fragrance, and flower shape are clarified through isolation and analysis of related genes. Modification technology for these characters by genetic transformation is also developed. In particular, we are trying to create blue chrysanthemums with sterility characteristics for practical use of the genetically modified new-colored flower. Moreover, basic breeding technologies that lead to improved breeding efficiency, such as identifying DNA markers linked with important characteristics are being developed for important ornamental plants such as carnations. We intend to breed high- value ornamental plants such as carnations with excellent flower longevity and high-yield performance.

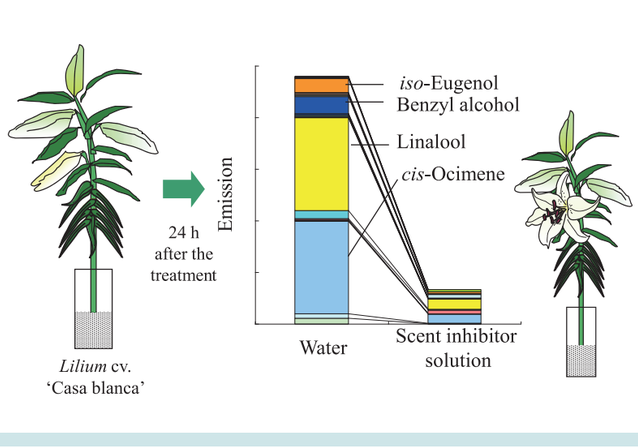
'Karen Rouge' (top), the first bacterial wilt resistant carnation cultivar carrying the resistance derived from *Dianthus capitatus* (bottom).



Flower color modification of chrysanthemum by genetic engineering

Development of quality control technologies for horticultural crops and animal products

We clarified flower senescence physiology and have developed preservation technologies for a guaranteed selling system, especially of promising flowers and/or under high temperature conditions. We elucidated flower coloration and scent emission mechanisms and have developed techniques for regulating them. We also evaluated the effects of appreciating ornamental plants on human health.



Cut lily flower before flowering is put in the scent inhibitor solution to decrease amounts of the scent compounds and make the scent of lily milder.

Differences in the vase life of *Eustoma* 'Umi-Honoka' cut flowers pulsed with distilled water (left) or AVG + NAA solution (right). Photographs were taken 7 days after the pulse treatment.