Masaru NAKANO, Ph.D.

Associate Professor
Program: Life and Food Sciences
Area: Agriculture and Bioresources
Undergraduate: Dept. of Life and Food Sciences
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Professional Expertise

Horticultural science (especially floricultural science), plant breeding, plant biotechnology.

Research Fields of Interest

1. Breeding of floricultural plants by somaclonal variation and chromosome doubling.
2. Breeding of floricultural plants by wide hybridization using embryo rescue.
3. Breeding of floricultural plants by genetic transformation.
4. Micropropagation and *ex situ* conservation of endangered plants.

Education

1993: Ph.D. in Agriculture, Graduate School of Science and Technology, Chiba University, Japan
1990: M.S. in Agriculture, Graduate School of Science and Technology, Chiba University, Japan
1988: B.S. in Horticulture, Faculty of Horticulture, Chiba University, Japan

Flower form alteration in lettuce by ectopic expression of class B MADS box genes from agapanthus.
Left: non-transgenic plant.
Right: transgenic plant.

Flower morphology of an intergeneric hybrid produced via ovule culture in Colchicaceae. Left, *Littonia modesta*; middle, *L. modesta* × *Gloriosa superba* 'Lutea'; right, *G. superba* 'Lutea'.

Professional Societies and Activities

1. Japanese Society for Horticultural Science
2. International Society for Horticultural Science
3. Japanese Society of Breeding
4. Japanese Society for Plant Cell and Molecular Biology

Major Publications

Papers

[1] "Chromosome doubling of *Lychnis* spp. by *in vitro* spindle toxin treatment of nodal segments" *Scientia Horticulturae*, vol.129, pp.832-839, 2011.

[2] "Genomic *in situ* hybridization (GISH) analysis of intergeneric hybrids in Colchicaceae" *Euphytica*, vol.181, pp.197-202, 2011.

[3] "Plant regeneration via direct and indirect adventitious shoot formation and chromosome-doubled somaclonal variation in *Titanotrichum oldhamii* (Hemsl.) Solereder" *Plant Biotechnology Reports*, vol.5, pp.187-195, 2011.

[4] "Morphological variation in *Tricyrtis hirta* plants regenerated from heavy ion beam-irradiated embryogenic calluses" *Plant Biotechnology*, vol.27, pp.155-160, 2010.

[5] "Promotion of somatic embryo production from embryogenic calluses of monocotyledonous and dicotyledonous plants by heavy-ion beam irradiation" *Plant Growth Regulation*, vol.60, pp.169-173, 2010.

[6] "Intergeneric hybridization among colchicaceous ornamentals, *Gloriosa* spp., *Littonia modesta* and *Sandersonia aurantiaca* via ovule culture" *Plant Biotechnology*, vol.26, pp.535-541, 2009.

[7] "Stability of GUS gene expression in transgenic *Tricyrtis hirta* plants after two years of cultivation" *Biologia Plantarum*, vol.52, pp.513-516, 2008.

[8] "Morphological characterization of three intergeneric hybrids among *Gloriosa superba* 'Lutea', *Littonia modesta* and *Sandersonia aurantiaca*" *HortScience*, vol.43, pp.115-118, 2008.

[9] "Flower form alteration by genetic transformation with the class B MADS-box genes of *Agapanthus praecox* spp. *orientalis* in transgenic dicot and monocot plants" *Molecular Breeding*, vol.20, pp.425-429, 2007.

[10] "Somaclonal variation and stability of GUS gene expression in transgenic agapanthus (*Agapanthus praecox* ssp. *orientalis*) plants at the flowering stage" *In Vitro Cellular and Developmental Biology – Plant*, vol.43, pp.79-87, 2007.

[11] "Early identification of intra- and intergeneric hybrids among Colchicaceous ornamentals, *Gloriosa* spp., *Littonia modesta* Hook. and *Sandersonia aurantiaca* Hook., by flow cytometry and random amplified polymorphic DNA analyses" *Journal of the Japanese Society for Horticultural Science*, vol.76, pp.73-78, 2007.

[12] "Somaclonal variation in *Tricyrtis hirta* plants regenerated from 1-year-old embryogenic callus cultures" *Scientia Horticulturae*, vol.110, pp.366-371, 2006.

[13] "Adventitious shoot regeneration and micropropagation of the Japanese endangered *Hylotelephium sieboldii* (Sweet ex Hook.) H. Ohba and *H. sieboldii* var. *ettyuense* (Tomida) H. Ohba" *Plant Biotechnology*, vol.22, pp.221-224, 2005.

[14] "The modified ABC model explains the development of the petaloid perianth of *Agapanthus praecox* ssp. *orientalis* (Agapanthaceae) flowers" *Plant Molecular Biology*, vol.58, pp.435-445, 2005.

Book Chapters

[1] Nakano, M., Mori, S., Suzuki, S., Hoshi, Y., Kobayashi, H. 2006. "Floriculture, Ornamental and Plant Biotechnology: Advances and Topical Issues, Volume II" Global Science Books, pp.172-183.

[2] Nakano, M., Hoshino, Y., Mii, M. 2001. "Biotechnology in Agriculture and Forestry, Vol. 49, Somatic Hybridization in Crop Improvement II" Springer-Verlag, pp.33-42.