

GIFU B-129-S9 *LOTUS JAPONICUS* GERMPLASM

J. Stougaard¹ and P. R. Beuselinck²

¹Department of Molecular Biology, Aarhus University
Gustav Wiedsvej 10, DK-8000, Aarhus C, Denmark

²USDA-ARS, Plant Genetics Research Unit, Columbia, MO 65211

GIFU B-129-S9 *Lotus japonicus* (Regel) Larsen germplasm was released by the USDA-ARS in cooperation with the Department of Molecular Biology, Aarhus University, Denmark in April 1995. Handberg and Stougaard (1) reported that *L. japonicus* is suitable for genetic and molecular biology research because: (i) it is a diploid ($2n=2x=12$), perennial, autogamous legume with good seed set, and a sexual regeneration time of approximately 3 mo, (ii) it has a relatively small haploid genome size, estimated at 0.5 pg per haploid complement, and (iii) it is susceptible to *Agrobacterium tumefaciens* and transgenic plants can be regenerated after hygromycin, geneticine, or kanamycin selection. Stable transformation followed by regeneration has been demonstrated (1,2). Transformed plants can be generated efficiently and quickly using GIFU B-129-S9 germplasm.

GIFU B-129-S9 germplasm, was developed from the 'Gifu' accession B-129 obtained from William F. Grant, McGill University in Quebec, Canada. The original source of B-129 was collected near Gifu, Japan, by Professor I. Hirayoshi, of Kyoto University. An inbred line of B-129 was established from plants multiplied in pollinator-free growth cabinets. Through the S₃ generation, seed of a maximum of 10 plants were bulked. Single-seed-descent was practiced, starting with the S₄ through the S₇. Seed of the S₈ and S₉ were bulked. The S₉ constitutes the GIFU B-129-S9 germplasm.

The growth form of mature GIFU B-129-S9 plants is intermediate with multiple branches up to 30 cm long. Flowering is indeterminate. Plants are cross-fertile making classical genetic studies possible. Fast-growing strains of *Rhizobium loti* and some slow-growing strains of *Bradyrhizobium* spp. will nodulate GIFU B-129-S9 germplasm (1), but *R. loti* strain NZP 2235 is recommended for fast and effective nodulation.

Seed of this release has been deposited in the National Plant Germplasm System through the USDA-ARS Regional Plant Introduction Station, Pullman, WA 99164-6402 where it is available for research purposes as PI 591056.

REFERENCES

Handberg, K. and J. Stougaard. *Lotus japonicus*, an autogamous, diploid legume species for classical and molecular genetics. *Plant J.* 2:487-496.

Handberg, K., J. Stiller, T. Thykjær, and J. Stougaard. 1994. *Cell biology: A laboratory handbook*. Academic Press, New York.