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Legume Base
A new resource center of *Lotus japonicus* and *Glycine max* –

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1. What's Legume Base

Legume Base (http://www.legumebase.agr.miyazaki-u.ac.jp) was set up in April 2004 as a resource center for *Lotus japonicus* and *Glycine max*. The aims of Legume Base are development, collection, conservation and offer of the genetic resource of *L. japonicus* and *G. max*, to facilitate the material utilization by the research community.

Legume Base is organized by a core facility, Miyazaki University, and a sub facility, Hokkaido University. Miyazaki University is aimed at the collection, conservation and offer of the *L. japonicus* genetic resource and Hokkaido University is aiming to handle the *G. max* genetic resource. Some parts of the reproduction and investigation of data on characteristic features are carried out by following facilities on commission: National Agricultural Research Center for Hokkaido Region, Nihon University College of Bioresource Sciences and RIKEN Plant Science Center. The foundation of Bean's Base is supported by the National Bioresource Project in Japan (http://www.shigen.nig.ac.jp/shigen/nbrp/nbrp.jsp).

2. Resource type

Lotus japonicus

We distribute two experimental lines, accession lines collected throughout Japan, recombinant inbred lines and a root culture system. The activation tag lines and the EMS mutants are being developed and reproduced for distribution.

One of the experimental lines, Gifu B-129, was established by Stougaard *et al.* (1996), and another experimental line, Miyakojima MG-20, was established by Kawaguchi (2000). These lines are widely used throughout the world. The accession lines were collected throughout Japan and donated by Japanese researchers (Figure 1). We have reproduced 90 accessions, of

which 53 lines are available for distribution at present (July 2004).

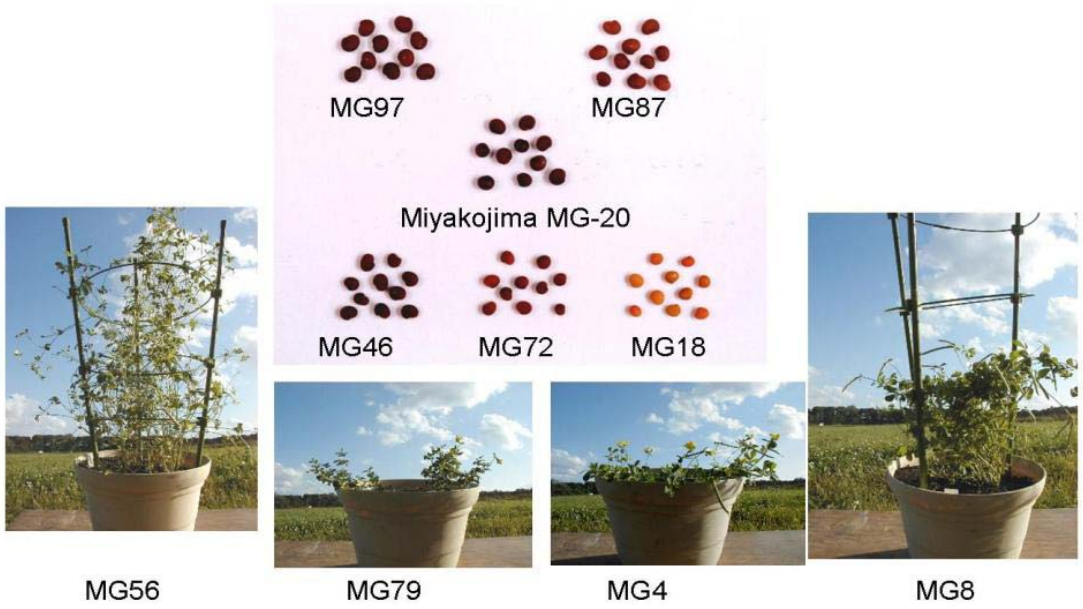

Figure 1. Phenotypes of the Accessions lines.

The recombinant inbred lines, LjMG RILines, were made by crossing Gifu B-129 and Miyakojima MG-20 (Figure 2). These lines were self pollinated to the F8 generation at Kazusa DNA Research Institute, starting from the F2 seeds offered by Dr. M. Kawaguchi. The number of lines in the final set is going to be 205, of which 172 lines are available for distribution at present (July 2004). The typing data for a total of 48 SSLP markers distributed along the six chromosomes are available from the Kazusa DNA Research Institute (http://www.kazusa.or.jp/lotus/RIline/).

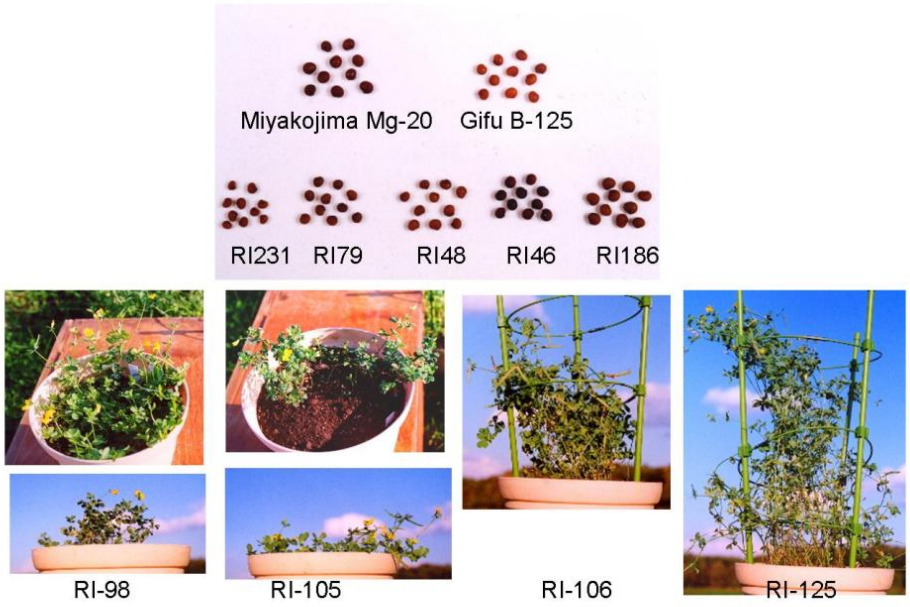

Figure 2. Phenotype segregation of the LjMG RI Lines.

The root culture system, super growing roots (SR), was discovered by Akashi *et al.* (1998a) from *Lotus corniculatus* L., which grows efficiently after removing the above-ground organs and cultured in a medium containing no plant hormone (Figure 3). This root possesses high regeneration competence. Also, protoplasts can be extracted easily and these protoplasts show a vital proliferation. These characteristics are maintained until now after 5 years have passed since the discovery (Akashi *et al.* 1998b, 2000). The SR can be used in physiological researches of the root, and also in functional analysis of genes by transformation.

Figure 3. A root culture system: Super growing root.

Glycine max

Cultivated accession lines, wild accession lines which were collected throughout Japan, RILines between Misuzudaizu and Moshidou Gong 503 and mutants of fatty acid composition are being developed and reproduced for distribution.

3. Conditions for providing the resources

The National Bioresource Project provides resources to domestic and foreign researchers on the basis of the conclusion of the material transfer agreement (MTA). The MTA form will be sent to the researcher by e-mail after the receipt of the request order form. The researcher is then asked to return the MTA after filling the necessary items. The requested resource will be sent to the researcher after the receipt of the MTA. The user of the resource should clarify that the research material was provided by the National Bioresource Project (*Lotus japonicus, Glycine max*) in his/her presentations and publications in the "materials and methods" or the "acknowledgment" section. Also, the user of the ‘LjMG RILines’ should mention that the lines were established at Kazusa DNA Research Institute. For a resource of which the depositor submits a special condition on its use, additional documents will be sent.

4. To make an order

The order is accepted through the web site. To make an order and for more detail information, please check the web site,

http://www.legumebase.agr.miyazaki-u.ac.jp

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