

## Genetic diversity in the rhizobia isolated from endemic *Lotus* to the Canary Islands

[MILAGROS LEÓN BARRIOS](#) \* and JAVIER DONATE CORREA.

*Departamento de Microbiología y Biología celular. Universidad de La Laguna. 38071 La Laguna. Tenerife. Islas Canarias. España.*

\* *Corresponding author*

[click here for Spanish version](#)

The genus *Lotus* includes numerous endemic species in the Canary Islands. They usually show an island distribution pattern, which is exclusive of single Island and has a reduced area, being many of them threatened or in danger of extinction. The rhizobia were obtained from root nodules of plants collected from their native locations. When this was not possible due to the reduced number of specimens, germinated seeds or cuttings were used as tramp-plant on soils where the wild populations were growing. In this study the rhizobia were isolated from *L. callis-viridis*, *L. kunkelii* and *L. arinagensis* in Gran Canaria Island, from *L. berthelotii*, *L. sessilifolius* and *L. campylocladus* in Tenerife, from *L. pyranthus* in La Palma and from *L. lancerottensis* in Lanzarote. The isolates were characterized through their restriction patterns and sequencing of the 16S ribosomal DNA and the symbiotic gene *nodC*. The results showed a great diversity among the rhizobia nodulating the different *Lotus* species in the Canary Islands, finding that they belong to different species from the genera *Mesorhizobium*, *Sinorhizobium* and *Rhizobium*. The genus *Mesorhizobium* was more frequently isolated, appearing in all the *Lotus* species tested. This rhizobia genus was represented by genotypes that belong to several different species, many of which may constitute new species for this genus. In general, the genotypes detected did not correlate with a particular *Lotus* species nor with a single Island, although some seem to correlate with a particular environment. Thus, one genotype dominated in the halopsamophile environments. Symbiotic genes do not correlate with the rhizobial classification and intragenetic horizontal gene transfer seems to be a usual phenomenon in these natural environments.