

ABSTRACT

GENOTYPIC CHARACTERIZATION OF RHIZOBIA NODULATING ADJACENT PLANTS OF *LUPINUS BICOLOR* AND *LOTUS PURSHIANUS*

The population structure, host specificity, and long term persistence was analyzed of 118 *Bradyrhizobium* spp. isolates infecting root nodules of California native legumes. *Lotus purshianus* and *Lupinus bicolor* were collected in both 1983 and 2003, as paired plants growing within 15 cm of each other, in the central Sierra Nevada foothills. The *Bradyrhizobium* spp. were characterized using 16S-23S IGS RFLP analysis, 16S ARDRA, and REP-PCR fingerprinting methods, along with partial 16S rDNA sequence comparisons. Two distinct genotypes of *Bradyrhizobium* spp. were found that have apparently persisted over twenty years, but with modifications. Both genotypes were able to infect the two host plant genera: additionally a significant preference between *Lotus purshianus* and Cluster 1 from 2003 was observed at one site. Both 2003 clusters were differentially distributed across sampling sites, suggesting that environmental factors external to the symbiosis are more important than partner choice in structuring the *Bradyrhizobium* spp. population.

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