

***Lotus glaber* productivity changes under different management conditions.**

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Lotus glaber productivity changes pure and in mixtures with other species were analyzed. *L. glaber* productivity was high in the first year, but it declined in time (Colabelli and Miñón 1994; Quadrelli *et al.*, 1997). The changes in the productivity and quality of pasture sown in the Flooding Pampas (Buenos Aires, Argentina) have been studied with a succession viewpoint. The pasture was gradually replaced by native species, present in the seed bank (León and Oesterheld, 1982; Oesterheld and León, 1987). Pasture changes were caused by soil compaction (Oesterheld and León, 1993), plant mortality and nutrition deficiency (Guaita *et al.*, 1996), among other factors. *Lotus glaber* productivity declined in three years' time while the productivity of native and exotic species increased, some of them of poor quality (Colabelli and Miñón, 1994; Quadrelli *et al.*, 1997). *Lotus glaber* productivity changes may be due to reduction of stem density (Miñón and Refi, 1993; Acuña and Cuevas, 1999) and seedling mortality caused by *Fusarium spp.* (Monterroso *et al.*, 1998). *Lotus glaber* plant mortality caused by flooding (Vignolio *et al.*, 1994) and soil compaction (Striker *et al.*, 2005) was also reported. Plant mortality by mechanical shoot cut carried out at the beginning of the reproductive season also was recorded. *Lotus glaber* spreads by seed; therefore, if seed production is affected by grazing (Miñón and Refi, 1993; Acuña and Cuevas, 1999) or mechanical cut (Colabelli and Miñón, 1993; Quadrelli *et al.*, 1997), besides the aspects previously mentioned, it is possible to understand the reduction of its productivity in time. Bovine can spread *L. glaber* seeds, but, the number of seedlings dying in dung during the establishment phase is very high (Sevilla *et al.*, 1996). Furthermore, if the animal eats immature pods and seeds, the seed bank could exhaust and delay *L. glaber* population recovery. In order to recover pasture productivity is recommendable: (a) to control weeds, although some studies have reported that the weeds biomass was increased with fertilization (Quadrelli *et al.*, 1997.); (b) to fertilize with P (Guaita *et al.*, 1996); (c) to sow the species that are in low quantity and (d) to maintain the seed bank for natural reseeding (Taylor *et al.*, 1973). The persistence of *L. glaber* populations in pasture and in grassland could be possible by means of seeds bank. *Lotus glaber* has an important seedling emergence pulse at the end of winter (Sevilla *et al.*, 1996); therefore, if the farmers generate favorable conditions for its establishment, *L. glaber* population could be maintained.

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