Breeding for Seed Shattering Resistance in *Lotus corniculatus* using Interspecific Hybridization and Amphidiploidy

Louise O'Donoughue and W. F. Grant

Genetics Laboratory, Department of Plant Science, P.O. Box 282, Macdonald College of McGill University, Ste. Anne de Bellevue, Quebec, Canada H9X 1C0

The diploid species *Lotus coimbriensis* (2n = 12) and *L. ornithopodioides* (2n = 14) are resistant to shattering and the species *L. burttii* (2n = 12) exhibits a reduced level of shattering. Interspecific crosses among these species and the species *L. alpinus* (2n = 12) and *L. japonicus* (2n = 12), believed to be closely related to *L. corniculatus* (Somaroo and Grant, 1972), are presently being carried out. The hybrids obtained will be doubled through colchicine treatment to produce amphidiploids which will serve as a source of shattering resistance for the tetraploid *L. corniculatus*.

Crossing techniques involve air suction emasculation followed by a spray of the hormone 2,4,5-trichlorophenoxypropionic acid to prevent flower drop (Grant *et al.*, 1962). Interspecific hybrid embryos are rescued using embryo culture techniques modified from Grant *et al.* (1962) on a medium derived from Gamborg *et al.* 1968 (B5) and Williams 1980 (TF2).

Shattering evaluation will be carried out both under field conditions and in a dessicator. Parental species, hybrids and amphidiploids will also be submitted to a comparative morphological and cytological study.

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