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Interspecific hybridization between diploid species of Lotus (Leguminosae)

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An interspecific hybridization study has been carried out between seven diploid species of Lotus (L. alpinus Schleich., L. japonicus (Regel) Larsen, L. filicaulis Dur., L. schoelleri Schweinf., L. krylovii Schischk. and Serg., L. tenuis Waldst. et Kit., and L. corniculatus var. minor Baker) closely related to L. corniculatus L. A total of 139 interspecific hybrids were produced in 16 combinations of the 7 species. Nine of these crosses were produced for the first time and four were obtained by means of embryo-culture. The growth habit, number of florets per umbel, flower color expression, RCM reaction and 15 metrical traits were compared between parents and hybrids. The relative ease with which some hybrids were produced suggested that during the early evolutionary history of the genus species diversification could have originated through interspecific hybridization and subsequent gene differentiation. In some crosses, the hybrids resembled one parent more closely than the other. This close morphological affinity between the hybrids and one of their parents would make it extremely difficult to detect such hybrids in natural populations and probably accounts for the prevailing belief that there is little or no hybridization in nature.