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EM5-Induced Mutants in Birdsfoot Trefoil Lotus corniculatus

Seeds of Lotus corniculatus, cv Mirabel, were treated with 0.1% ethylmethanesulfonate (v/v) for 6 hours at pH 5.6. M_1 plants obtained from treated seed were selfed and the M_2 obtained displayed two mutant segregants; one is of the virescent type, with yellow-green leaves near the apical regions demonstrating a gradual darkening to the basal leaves, the other demonstrates chlorosis in the cotyledonary stage of development. Preliminary results indicate that both mutant types appear to be tetrasomic recessives, and further experiments are being carried out to determine the precise mode of inheritance.

A third mutant tupe was obtained after treatment of dry seeds (cv. Mirabel) with 9 KR unfiltered X-rays at a rate of 230 rad/min. M_1 plants obtained from treated seed were selfed and the M_2 generation obtained in this manner produced a mutant in which the first foliar leaf was singular vs. the normal trifoliate condition. A segregating ratio of approx. 35:1 and a back-cross ratio of 5:1 have indicated that this mutation is a tetrasomic recessive. The symbol ul has been tentatively proposed for this mutation. An attempt at multiplying seed is underway. Research on mutagenesis in this species is being carried on for both qualitative and quantitative characteristics.