

Segregation and Linkage Relationships of Allozymes in *Pinus Brutia* Ten.

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Abstract

Female gametophytes of *Pinus brutia* Ten. were analyzed to study Mendelian segregation and linkage among allozyme loci in a seed orchard composed of 28 clones. Isozyme variants of nine enzyme systems encoding 14 loci from megagametophytes were assayed by starch gel electrophoresis. While six of the 14 loci were monomorphic, the remaining eight were polymorphic. Analysis of observed segregation ratios of all polymorphic loci except for *Sdh1*, showed a good fit to the 1:1 ratios expected for Mendelian inheritance. Linkage relationships of the eight polymorphic allozyme loci were analyzed by testing 23 of the 28 possible two-locus combinations. Two-locus segregations in three pairs (*Got2-Mdh1*, *Got2-Pgi2* and *Pgd3-Sdh1*) were significantly heterogeneous ($P \leq 0.05$). Relatively weak linkage was observed between only one pair of genes (*Adh2:Got2*). Recombination fraction for *Adh2:Got2* was found to be 0.24 (± 0.06).

Key words: linkage, allozyme, inheritance, seed orchard, *Pinus brutia*