



Genetic diversity and differentiation in *Dalbergia sissoo* (Fabaceae) as revealed by RAPD

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ABSTRACT: *Dalbergia sissoo*, a wind-dispersed tropical tree, is one of the most preferred timber tree species of South Asia. Genetic diversity and differentiation among natural populations of *D. sissoo* were examined for the first time. We found a relatively high level of genetic diversity in *D. sissoo*, both at the species level (percentage of polymorphic bands = 89.11%; $H = 0.2730$; $I = 0.4180$) and the population level (percentage of polymorphic bands = 68.7%; $H = 0.239$; $I = 0.358$), along with a relatively low degree of differentiation among populations ($GST = 0.1311$; AMOVA = 14.69%). Strong gene flow among populations was estimated, $N_m = 3.3125$. The Mantel test suggested that genetic distances between populations were weakly correlated with geographic distances ($R = 0.3702$, $P = 0.1236$). The high level of genetic diversity, low degree of differentiation, strong gene flow, and weak correlation between genetic and geographic distances can be explained by its biological character and wide-spread planting. This information will be useful for the introduction, conservation and further studies of *D. sissoo* and related species.

Key words: *Dalbergia sissoo* Roxb.; RAPD; Genetic diversity; Genetic differentiation