

Estimation of outcrossing rates in *Koompassia malaccensis* from an open-pollinated population in Peninsular Malaysia using microsatellite markers.

ABSTRACT

Koompassia malaccensis (Leguminosae), locally known as kempas, is an important tropical timber species in South-East Asia. Although studies have shown that most tropical tree species are predominantly outcrossing, there is no empirical support for this species prior to this study, with regard to its mating system. Information on its reproductive biology is also scanty. We report the estimation of the outcrossing rates of *K. malaccensis* using microsatellite markers, based on a fruiting season at the Semangkok Forest Reserve, Selangor. Microsatellite analysis was performed for an average of 46 seeds each from nine adult *K. malaccensis* trees, using four polymorphic microsatellite loci (Kma050, Kma067, Kma147 and Kma180). Single and multilocus population outcrossing estimates (t_s and t_m respectively) were determined using the software MLTR version 3.0. Results showed that this timber species was predominantly outcrossing ($t_m = 0.890$). Biparental mating ($t_m - t_s$) was very low, only 0.026, suggesting low tendency of mating between relatives. Outcrossing estimates obtained for individual mother trees were in the range of 0.637 to 0.994. The relatively lower outcrossing rates exhibited by a few progeny arrays indicated that *K. malaccensis* was not completely self-incompatible.

Keyword: Kempas; Tropical rain forest; Leguminosae; Bee-pollinated.