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POLLINATION AND BREEDING BIOLOGY OF *VATERIA COPALLIFERA* (RETZ.) ALSTON (DIPTEROCARPACEAE)

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Vateria copallifera is an under exploited rain forest tree species occasionally cultivated in home gardens. Its large fruits are a source of carbohydrate while its bark is used to arrest fermentation of the sugary sap of Caryota urens L. The potential economic value of the species makes it suitable for domestication and any information on its reproductive biology would be a necessary prerequisite towards this end.

Among the floral biological features of the species examined, those of particular importance to its breeding biology were the following: In different individuals the number of stamens per flower ranged between 41-72. Longevity of individual flowers was only 24 hours. Another dehiscence accompanied anthesis and insects such as Apis spp. and Trigona sp. visited its flowers between 8.00 am and 2.00 pm primarily for pollen gathering.

Breeding experiments carried out included selfing, crossing and open pollinated treatments using emasculated and non-emasculated flowers of three trees. A set of emasculated flowers were bagged without pollination to examine the presence of pseudogamy (apomixis). Average fruit set in crossed, selfed and open pollinated treatments using non-emasculated flowers were 63%, 64%, and 44% respectively. The corresponding values for treatments using emasculated flowers were 59%, 54% and 33% respectively. Fruit set in emasculated and bagged flowers was 24%. The difference in fruit set between crossed and selfed treatments was not significant (at 5% level) while those between the open pollinated and crossed or selfed treatments were significant (at 1% level).

These results suggest that Vateria copallifera has a self compatible breeding system and that the low fruit set in open pollinated treatments as compared to hand pollinations is limited by pollinator activity, a factor to be considered in its domestication.

This work was supported by a grant from USAID through NARESA (RG/AID/8).