

FORAGING BEHAVIOR AND ROLE OF HONEYBEES IN CITRUS MAXIMA AND ITS IMPACT ON FRUIT PRODUCTION

SANDIP CHOUDHURY*, SUBRATA MONDAL
AND SUDHENDU MANDAL

The active role of honeybees (Apis sp.) in Citrus maxima (Burm.) Merr. has been presented here with reference to pollen dispersal, pollination and fruit production. The sweet scented, nectariferous flower showed late afternoon pattern of anthesis with a mean number of 18,725 pollen grains with pollen/ovule ratio 585:1. The best pollen germination ($95 \pm 1.4\%$) with a mean of 975 mm long pollen tube was observed in 20% sucrose supplemented with 100 ppm boric acid. Stigma showed maximum receptivity after 12hrs of anthesis with reference to in vivo pollen germination, esterase and peroxidase activity. Presence of copious esterase and peroxidase over stigma surface coincided with its receptivity. The field experimental data on the effect of netting and bagging on fruit set of Citrus maxima suggest that Apis sp. were dominant pollen vector among other flower visitors belonging to Thysanoptera, Hymenoptera and Diptera. The plant favours xenogamy showing delayed pollen and stigma receptivity. The plant attracts nocturnal flower visitors instead of its late afternoon pattern of anthesis which might be a positive selection force for the reproductive fitness and maximum fruit production. Percentage of fruit-set was considerably high in natural open flowers compared to netted and bagged flowers indicating the vital role of insects for successful pollination and suggests that fruit yields may be enhanced by introducing manageable bees together with their nesting requirement.
