

EFFECT OF DIFFERENT DISTURBANCE REGIMES ON POLLINATOR AND NON-POLLINATOR FIG-WASP RELATIONSHIPS AND SYCONIAL CHARACTERS OF *FICUS EXASPERATA* VAHL (MORACEAE) IN KANDY DISTRICT, SRI LANKA

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Reproduction of partners, figs and their pollinating fig-wasps of species specific fig/fig-wasp obligatory mutualistic system are closely dependent on each other. Role of non-pollinator fig-wasps of the fig/fig-wasp system is also important due to negative impacts of them on fig-wasp mutualism. *Ficus exasperata* Vahl (Moraceae) is a gynodioecious fig species and its pollinator fig-wasp species is *Kradibia gestroi* (Hymenoptera: Agaonidae: Agaoninae). This study was carried out from January 2012 to December 2013. After pre-visits to the sites and using satellite images highly disturbed urban core of Kandy Municipal Council Area (KM), moderately disturbed Park of University of Peradeniya (UP) and a less disturbed traditional village setting in Tumpane/Hataraliyadda DS area (TP) were selected to investigate the effect of different disturbance regimes on pollinator/non-pollinator fig-wasp relationships and the syconial characters of *F. exasperata*. GPS locations of *Ficus exasperata* trees within 1 km radius area were recorded. Mature syconia were picked randomly; length and diameter of syconia were measured, cut into two equal halves and kept in laboratory to rear the wasps. Florets of syconia halves and pollinator and non-pollinator fig-wasps emerged were sexed and counted. Percentage emergence of wasps was highest in the syconia from TP (95.83%). Syconial length (LS), syconial diameter (DS), syconial volume (VS) and number of florets per syconia (FI/S) of three sites were significantly different ($P < 0.05$) and mean values of all characters were recorded highest in TP (LS=18.96±1.24mm, DS=18.09±1.42mm, VS=3371.8±674.3mm³, FI/S=716.6±225.0). Total fig-wasps per syconium (TFW), pollinator fig-wasp males (PFWM), non-pollinator fig-wasp females (NPFWF), non-pollinator fig-wasp males (NPFWM) and fig-wasp sex ratios were significantly different ($P < 0.05$) among the three sampling sites. Mean TFW (248.0±138.3) and pollinator fig-wasp females (148.6±108.4) and PFWM (92.93±61.33) were highest in TP site. However, NPFWF (18.85±9.86) and NPFWM (15.12±7.36) were highest in KM site. Mean number of both males and females of pollinator fig-wasps per syconium was higher in TP than in others and the mean number of both males and females of non-pollinator fig-wasps per syconium were higher in KM than in others. Accordingly, less disturbed non-urbanized TP site harbours more pollinators; whereas, highly disturbed urban KM site harbours more non-pollinators. Reduction of pollinators results in reduced seed production adversely affecting long term existence of both fig and the fig-wasps. Fig-wasp sex ratios were significantly different ($P < 0.05$) among sites and sex ratios were female biased. The study reveals that the disturbance to vegetation negatively affects the syconial characters, pollinator/non-pollinator relationships and overall fig/fig-wasp system of *F. exasperata*.

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