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Research Paper

SEX AND SEASON SPECIFIC PARASITIC INTERACTION BETWEEN *XANTHOPIMPLA PEDATOR* FABRICIUS (HYMENOPTERA: ICHNEUMONIDAE) AND SPINNING LARVA OF *ANTHERAEA MYLITTA* (LEPIDOPTERA: SATURNIIDAE)

Narendra Kumar Bhatia

Silkworm Seed Production Centre, National Silkworm Seed Organisation, Central Silk Board, Udhampur (J&K) 182101, India.
E-mail:nkb1123@rediffmail.com

ABSTRACT

Ichneumon fly, *Xanthopimpla pedator* is an idiobiont, solitary larval-pupal endoparasitoid of *Antheraea mylitta* that deposits single egg inside spinning larva subsequently causing pupal mortality that affects seed production. Understanding on insect-host interface between ♀ *X. pedator* and *A. mylitta* is not yet complete. To explore this a bit further, four experimental rearing trials of Daba ecorace (BV) of *A. mylitta* were conducted on seven forest tree species at Forest Research Institute, Dehra Dun (Uttarakhand) during 2012 to 2014. Results indicated that ♀ ichneumon fly prefer to attack *A. mylitta* larvae during the morning (6.30-11.00 am) and evening (4.00 - 6.30 p.m.) hours by locating its host accurately, even if concealed amidst leaves. It takes 45 (±5) seconds for host selection through antennal probing, 25 (±5) seconds for choosing oviposition site and 5 (±1) seconds for depositing an egg; however, sunshine and forest tree species were found affecting its orientation pattern. β coefficient of multiple regressions indicates that length and shell thickness of ♂ cocoons and shell thickness of ♀ cocoons are strong predictors for parasitic behaviour of *X. pedator*. Cocoon shell thickness of both the sexes had negative correlation and length of ♂ cocoon had positive association with parasitic behaviour of *X. pedator*. Rearing season (DF 1, $P<0.05$) and host plant (DF 6, $P<0.05$) significantly affected parasitoid-host interactions. Results indicated that parasitization rate of 2.89 % of first rearing season increased to 14.52 % in second season. But, interestingly, out of all infested pupae, 85.59 % were ♂, indicating sex specific parasitic behaviour of *X. pedator*. Protandrous nature of *A. mylitta*, higher ♂ sex ratio, small sized hammock and thin shell thickness of freshly formed cocoon by ♂ spinning larvae are the main reasons to elicit sex specific parasitic behaviour of *X. pedator*.

Key words: Cocoon loss, livelihood, pest and predator, tasar seed sector, vanya silk.