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ASSESSMENT OF PUPAL PARASITOID GUILD OF HOUSE FLY (*MUSCA DOMESTICA* L.) IN LOW AND MID COUNTRY REGIONS OF SRI LANKA

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The common house fly (*Musca domestica* L.) (Diptera: Muscidae) is one of the most annoying insects in domestic habitats. The house fly population is a nuisance and it has long been suspected as a vector of several human and animal diseases. Accordingly, controlling of house flies is very important and integrated housefly management is regarded as the best approach. Biological control is one of the key elements of a successful integrated housefly management program. During recent times, the prospect of using parasitoids is higher than the other biological controlling agents and it has been practiced in North America and several other countries in the world. Although a considerable amount of research data are available on the global scale, no work has been done on these parasitoids of house flies in Sri Lanka.

As the first step towards developing a biological control method for houseflies in Sri Lanka, this study was conducted in two locations in the mid- and low-country of Sri Lanka with the objectives of assessing the pupal parasitoid community associated with housefly pupae. Samples of housefly pupae were collected from two sites at Peradeniya, namely a goat rearing facility and a poultry rearing facility and two sites at Dankotuwa, a garbage dumping site and poultry rearing facility at two-week intervals from June to August, 2012. Collected pupae were placed in separate micro well plates and incubated under room temperature until the emergence of parasitoids. Emerged parasitoid species were identified using the taxonomic key of Rueda and Axtell and evaluated for their capacity of parasitism.

Six species of parasitoids belonging to Family Pteromalidae were identified and their relative abundances were *Spalangia cameroni* Perkins (34.9%), *Spalangia endius* Walker (22.2%), *Spalangia nigroaenea* Curtis (33.3%), *Spalangia drosophilae* Ashmead (0.5%), *Muscidifurax raptor* Girault and Sanders (8.8%) and *Nasonia vitripennis* Walker (0.2%). Identities of *S. cameroni*, *S. endius* and *S. nigroaenea* were confirmed by the Natural History Museum in London. Out of these six species of parasitoids, *S. cameroni*, and *S. nigroaenea* were the most predominant parasitoids attacking the house fly pupae. The levels of parasitism on house fly pupae by parasitoids were different with sampling time throughout the survey and it varied with the geographical location in addition to its association with breeding habitats. Among the two sampling locations, Peradeniya had a higher level of total parasitism of house fly pupae (60.7%) as compared to Dankotuwa area (55.0%).