Biology of ginger rhizome fly, *Mimegralla sp. nr coeruliefrons* (Diptera: Micropezidae)

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ABSTRACT: A survey conducted in the ginger growing areas of Thrissur and Palakkad districts of Kerala, during 2013 and 2014, revealed the presence of three species of flies infesting both healthy as well as diseased ginger rhizomes. The predominant, most injurious one was identified as *Mimegralla sp. nr coeruliefrons* (Macquart) (Diptera: Micropezidae). The biology of the same was studied in the laboratory on diseased ginger rhizomes. The mean incubation period was 3.75 days, while the mean duration of first, second and third larval instars was 2.25, 3.15 and 6.70 days respectively. The mean pupal period lasted for 8.80 days. The longevity of adult male and female flies was 43.90 and 51.00 days respectively, and the sex ratio was 1:1. The morphometric observations of each life stage are also described, with a note on the taxonomy of the fly. © 2016 Association for Advancement of Entomology

KEYWORDS: rhizome maggot, *Mimegralla* sp., ginger rhizomes, biology

INTRODUCTION

Ginger (*Zingiber officinale* Rosc.) is one of the earliest cultivated oriental spices grown throughout India. Nearly 46 species of insects are recorded to damage ginger in India (Devasahayam and Koya, 2005), among which rhizome maggots are considered to be the most important. Yield reduction of up to 31 per cent has been reported in ginger due to maggot infestation (Ghorpade *et al*., 1983), though it is often considered as a secondary pest, infesting diseased rhizomes (Devasahayam and Koya, 2005).

Several species of true flies *viz.*, *Calobata indica* Robineau-Desvoidy (Maxwell - Lefroy and Howlett, 1909), *Mimegralla coeruleifrons* Macq. [Micropezidae] (Khaire *et al*., 1972), *Chalcidomyia atricornis* Malloch, *Formosina flavipes* Malloch [Chloropidae] (Malloch, 1927), *Celyphus* sp. [Celyphidae] (Nair, 1975), *Eumerus albifrons* Walker (Sathiamma, 1979) and *E. pulcherrimus* Brunetti [Syrphidae] (CPCRI, 1986) infest ginger. Among these the biology of *M. coerulifrons* have been studied by several workers (Ghorpade *et al*., 1988; Koya, 1989; Sontakke, 2000). However, there is some uncertainty regarding the correct identity of *Mimegralla* sp. on ginger which remains to be resolved.

The present study was carried out with the objective of studying the biology of major species of rhizome maggot collected during survey conducted in 2013-14 in ginger growing areas of Thrissur and Palakkad districts of Kerala.

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