

Diurnal attraction of fruit flies (Diptera: Tephritidae) to methyl eugenol in a village ecosystem in Tanjung Bungah, Penang, Malaysia

ABSTRACT

Diurnal rhythm of male *Bactrocera* fruit fly attraction to methyl eugenol (ME) was investigated using clear traps design in a village ecosystem in Tanjung Bungah, Penang, Malaysia. The diurnal rhythm pattern studied by half-hourly sampling from 07:00 to 18:00 hr showed significant male fruit fly attraction to ME in the morning from 07:30 to 09:30 hr, with a distinct peak at 08:30-09:00 hr. The male attraction to ME was significantly lower in the afternoon and remained low approaching late afternoon. The ME-responding fruit fly species captured were *B. dorsalis* (86%), which dominated the local *Bactrocera* community, followed by *B. umbrosa* (5.8%) and *B. carambolae* (0.1%). This showed that *B. dorsalis* is a more dominant species than its sibling species, *B. carambolae* in the area studied. In addition, *ca.* 8.1% of *Bactrocera* male flies that bore intermediate morphological characteristics between *B. dorsalis* and *B. carambolae* were also captured in those traps. The present study shows that for ME-responding *Bactrocera* spp., male attraction to ME occurs throughout the day with peak period of attraction to ME occurring *ca.* 30 mins following sunrise for 2 hrs before gradually tapering off.

Keyword: *Bactrocera* spp.; Methyl eugenol; Diurnal rhythm