

**HOST-MARKING BEHAVIOUR AND PHEROMONES IN MAJOR FRUIT FLY
SPECIES (DIPTERA: TEPHRITIDAE) INFESTING MANGO
(*MANGIFERA INDICA*) IN KENYA**

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ABSTRACT

A laboratory study was conducted on six major fruit fly species infesting mango in Kenya (*Ceratitis capitata*, *C. fasciventris*, *C. rosa*, *C. cosyra*, *C. anonae* and *Bactrocera invadens*) regarding host-marking behaviour and pheromones in order to get insight into the potential of the host-marking technique for their management. Slices of ripe mango fitted in 50 mm diameter petri dish covers were used as oviposition substrates in bioassays to determine incidence of host-marking behaviour among the fruit fly species and efficacy of their host-marking behaviour and faecal matter in deterring conspecific and heterospecific oviposition. High pressure liquid chromatography was used to determine presence of potential host-marking pheromones of the fruit flies in their faecal matter. Host-marking behaviour was found to be prevalent in *C. capitata*, *C. fasciventris*, *C. rosa* and *C. cosyra* only, but duration of host-marking bout was significantly shorter in *C. rosa* than in the other three species. In addition, *C. cosyra* was found to have a unique behaviour of pausing for some time after oviposition before engaging in host-marking. For each host-marking fruit fly species, three chemical components, which could be its host-marking pheromones were found in its faecal matter. However, the chemical components in faecal matter of *C. capitata*, *C. fasciventris* and *C. rosa* seemed to be similar while for *C. cosyra*, two of the chemical components were those found in faecal matter of the other three species but the third one was specific to it. When tested for behavioural activity, the unique chemical

component of *C. cosyra* elicited conspecific oviposition deterrence, suggesting that it was indeed the host-marking pheromone of *C. cosyra*. The findings of the study indicated apparent potential of the host-marking technique in the management of some of the major fruit fly species infesting mango in Kenya.