

We investigated conspecific and heterospecific oviposition host discrimination among four economically important fruit fly pests of mango in Africa (*Ceratitis capitata*, Wiedemann; *C. fasciventris*, Bezzi; *C. rosa*, Karsch, and *C. cosyra*, Walker) with regard to host-marking behavior and fecal matter aqueous solutions. The objective of the study was to get insight into the potential of managing these pests using the host-marking technique. Observations were done on mango slices marked by the flies and treated with aqueous solutions of fecal matter of the flies, respectively. In both host-marking and fecal matter experiments, *C. cosyra*, which is the most destructive species of the four on mango, was exceptional. It only discriminated against hosts treated with its fecal matter but with lower sensitivity while *C. capitata* and *C. fasciventris* discriminated against hosts marked by it or treated with its fecal matter and with higher sensitivity. Our results provide evidence for potential of managing some of the major fruit fly species infesting mango in Africa using the host-marking pheromone of the mango fruit fly, *C. cosyra*.