

**PERFORMANCE OF *COTESIA FLAVIPES* CAMERON (HYMENOPTERA:  
BRACONIDAE) ON STEM BORERS OF CEREALS AND WILD CROPS.**

By

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## ABSTRACT

The braconid larval parasitoid *Cotesia flavipes* Cameron (Hymenoptera: Braconidae) was introduced into Kenya from Pakistan and India for the control of the exotic crambid stem borer *Chilo partellus* Swinhoe (Lepidoptera: Crambidae). In Africa, maize fields are usually islands surrounded by land occupied by wild gramineous plants. Many of the wild plants harbour borer species not found on crops. It is not known if the exotic parasitoid *C. flavipes* follows these borers into the wild habitat and whether they are suitable for its development. Thus, the purpose of this study was: (i). to assess the suitability of some borer species found in crops and wild host plants for the development of *C. flavipes*, (ii). to study the host-foraging behaviour of the parasitoid and (iii). to isolate and identify plant volatiles that could mediate host finding by *C. flavipes*. Seven stem borer species were used: *C. partellus* and *Busseola fusca* Fuller (control species), *Sesamia calamistis* Hampson, two populations of *S. nonagrioides* Tams & Bowden (from Eastern and Western Kenya), *B. phaia* Bowden and *Sciomesa piscator* Tams. *C. partellus*, *S. calamistis* and *B. fusca* are mostly found on cultivated crops whereas *S. nonagrioides* (especially eastern population), *B. phaia* and *S. piscator* are mostly found on wild host plants.

The stem borer species exposed to *C. flavipes* were equally acceptable for oviposition. However, the suitability varied with species. Parasitoid emergence occurred only on *C. partellus*, *S. calamistis* and the *S. nonagrioides* West population, while species feeding on wild hosts plants were not suitable. *C. flavipes* females were significantly more attracted to volatiles from stem borer-infested plants than to volatiles from uninfested plants regardless of stem borer and the plant species used. This was probably due to the richer chemical profile of stem borer-infested plants and especially in green leaf volatiles and terpenoids compared to uninfested plants. It can be concluded that the unsuitable borer species used in the present experiment form a reproductive sink.