

Location, acceptance and suitability of lepidopteran stemborers feeding on a cultivated and wild host-plant to the endoparasitoid *Cotesia flavipes* Cameron (Hymenoptera: Braconidae)

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Date: 2008-04

Abstract

Maize fields in Africa are usually surrounded by land occupied by wild plants many of which harbor lepidopteran stemborer species not found on crops. It is not known if the exotic braconid parasitoid *Cotesia flavipes*, which was released in Kenya in 1993 against the invasive crambid *Chilo partellus*, searches for and attacks these borers in their natural habitats and whether they are suitable for parasitoid development. The objective of this study was to assess the relationship between acceptance and suitability of six stemborer species attacking cultivated sorghum (*C. partellus*, *Busseola fusca*, *Sesamia calamistis*, and *S. nonagrioides*) or Napier grass (*Busseola phaia* and *Sciomesa piscator*) to *C. flavipes*. Although all stemborer species were equally accepted for ovipositor probing by *C. flavipes*, only *C. partellus* and *S. calamistis* were suitable and produced parasitoids. In olfactometric bioassays, *C. flavipes* females were more attracted to stemborer-infested than uninfested plants. Analyses of the volatile compounds showed that they produced richer volatile profiles, mainly comprising C5–C6 alcohols, terpenoids, aromatic and aliphatic compounds, than uninfested plants. It can be concluded that stemborer species, that were accepted for oviposition but were unsuitable for parasitoid development, form a reproductive sink and that the exotic parasitoid would not establish in areas where these are the predominant species.