Intrinsic competition between two oligophagous arasitoids, *Sturmiopsis parasitica* and *Cotesia sesamiae*, attacking the same life stages of lepidopteran cereal stemborers

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Abstract

Host acceptability and suitability of four cereal stemborers (Lepidoptera) commonly occurring in eastern Africa, *Sesamia calamistis* Hampson, *Busseola fusca* (Fuller) (both Noctuidae), *Chilo partellus* Swinhoe (Crambidae), and *Eldana saccharina* Walker (Pyralidae), for a West African strain of *Sturmiopsis parasitica* (Curran) (Diptera: Tachinidae) were assessed. In addition, the outcome of multi-parasitism was studied using a local strain of the endoparasitic *Cotesia sesamiae* Cameron (Hymenoptera: Braconidae) as the competing parasitoid. Various parasitism sequences and time intervals between parasitism were chosen. Parasitism increased linearly with the number of planidia used per larvae and was 80% with eight planidia. All species were accepted for larviposition, but suitability varied greatly; parasitism was 75.2, 37.9, 34.8, and 23.8% with *S. calamistis*, *B. fusca*, *E. saccharina*, and *Ch. partellus*, respectively. *Sturmiopsis parasitica* outcompeted *Co. sesamiae* irrespective of the time interval between parasitism, and whether it was the first or second species to parasitize. This was mainly due to a longer egg-to-cocoon development time and a high cocoon-to-adult mortality in *Co. sesamiae*. The implications of these results for expanding the geographic range of the West African strain of the tachinid in Africa are discussed.