Abstract

Interspecific competition between *Xanthopimpla stemmator* and *Dentichasmias busseolae* was studied using pupae of the invasive crambid stemborer *Chilo partellus* as the host. While *X. stemmator* is an old association, *D. busseolae* formed a relatively new association with *C. partellus* in East Africa. Two different time intervals between parasitism (0 and 48 h) and two parasitoid sequences [i.e., *X. stemmator* before *D. busseolae* (Xs–Db) and *D. busseolae* before *X. stemmator* (Db–Xs)] were chosen. In addition, the parasitoids' performance on pupae in maize stems and ears was assessed. For both *X. stemmator* and *D. busseolae*, there was no difference in foraging time between unparasitized pupae and pupae previously parasitized by the other species, indicating that the two species were not capable of interspecific host discrimination. In the Xs–Db sequence, the time interval between parasitism did not have an influence on the percentage of pupae producing either parasitoid species. By contrast, in the Db–Xs sequence, the percentage of pupae producing *X. stemmator* was almost 8 times higher in the 0-h than the 48-h interval, while for *D. busseolae* it was the reverse. In the 0-h interval, *X. stemmator* outcompeted *D. busseolae* irrespective of whether it parasitized first or second, while in the 48-h interval, the parasitoid parasitizing first won. While *D. busseolae* successfully searched for and parasitized pupae in both stems and ears, parasitism of pupae in ears by *X. stemmator* was negligible. It was concluded that the two species could co-exist because they partly exploit different ecological niches.