

## Abstract

*Xanthopimpla stemmator* (Thunberg), a solitary endoparasitoid of lepidopteran stemborer pupae, was recently imported into East Africa as a candidate biological control agent of gramineous stemborers. Suitability of *Busseola fusca* Fuller, *Chilo partellus* (Swinhoe), *Eldana saccharina* (Walker) and *Sesamia calamistis* Hampson, for the development of *X. stemmator* was studied in the laboratory. One- to 6-day-old laboratory reared pupae of the four stemborer species were exposed to naïve *X. stemmator* females. All host pupae and ages were acceptable for oviposition. The parasitoids inflicted multiple probe wounds on 67.8% of pupae exposed. *B. fusca*, *C. partellus* and *S. calamistis* were equally suitable with 56.4, 59.4 and 52.3%, respectively, of probed pupae leading to emergence of adult parasitoids. *E. saccharina* was less suitable with only 22.6% of probed pupae producing parasitoids. Emergence of parasitoids did not differ significantly across the six pupal ages for *B. fusca* and *S. calamistis*, but varied for *C. partellus* and *E. saccharina*. No parasitoids emerged from 6-day-old *E. saccharina* pupae. Realized fecundity of females reared on the four stemborer pupae showed that fewer progeny were produced by females emerging from *E. saccharina* than females reared on the other three stemborer species. *Eldana saccharina* may be a poor host for *X. stemmator* in Kenya, but this parasitoid is a potential candidate for biological control of *B. fusca*, *C. partellus* and *S. calamistis*.