

*Trichogramma* species parasitise eggs of Lepidoptera and have been extensively used in augmentative biological control. Studies were conducted during 1997-2001 on the native egg parasitoids occurring in Kenya. The objectives of the study were (i) to identify the native egg parasitoids that attack *Helicoverpa armigera* and *Plutella xylostella*, (ii) to study the conventional and molecular taxonomy of the native *Trichogramma* species, (iii) to evaluate the response of two native *Trichogramma* species to different temperature regimes, (iv) to determine the influence of host plants and host insects on parasitism of the two *Trichogramma* species.

In survey and field trials in Kenya, five native trichogrammatid egg parasitoids species: *Trichogramma bournieri* Pintureau & Babault, *Trichogramma* sp. nr. *mwanzai* Schulten & Feijen, *Trichogramma* sp. nr. *bruni* Nagaraja, *Trichogrammatoidea* sp. nr. *lutea* Girault and *Trichogrammatoidea* sp. were recovered from the eggs of *H. armigera*, *P. xylostella* and *Chilo partellus*. *Trichogramma bournieri* and *T. sp. nr. bruni*, recovered from *C. partellus*, are the first records for Kenya and probably the latter for Africa. The natural occurrence of *Trichogrammatoidea* sp. nr. *lutea* on *P. xylostella* eggs was also the first record for Kenya as well as for eastern Africa.

*Trichogramma* sp. nr. *mwanzai* was morphologically more similar to the Australasian *T. chilonis* Ishii than to *T. bournieri*. The genitalia of *T. sp. nr. mwanzai* was more similar to the Paratactic species, *T. evanescens* Westwood, than to the genitalia of *T. bournieri*. *Trichogramma bournieri* and *T. sp. nr. mwanzai* had 40% genetic similarity. The Kenyan species are more similar genetically than morphologically.

For all temperatures tested, *T. sp. nr. mwanzai* had the highest preimaginal survivorship. The developmental period for all the species decreased as the temperature increased to a maximum of 34°C. Sex ratio was female biased at all temperatures for *T. bournieri* and *T. chilonis*. In contrast, *T. sp. nr. mwanzai* sex ratio was males biased.

The life table study showed that *T. sp. nr. mwanzai* had a significantly higher fertility than *T. bournieri*. The respective proportions of female progenies were 52 and 72%. There was no significant difference in the intrinsic rate of natural increase and the net reproductive rate between the two native species at 26±1°C, 70±10% relative humidity and 16L: 8D photoperiod.

In the laboratory no-choice experiments, *T. bournieri* and *T. sp. nr. mwanzai* showed a high preference for *C. partellus* and *Corcyra cephalonica* compared to *H. armigera*. In the field cage experiment using *C. partellus* eggs, both species showed a stronger preference for maize plant than for tomatoes, in both choice and no choice tests. There was a strong host insect and host plant effect on the preference and suitability of the two native species.

*Trichogramma* sp. nr. *mwanzai* could be a candidate species for mass production and field release due to its high fertility and tolerance to higher temperature regimes. This study has generated new information on egg parasitoids in Kenya and it is hoped that this study will foster more research on the biology and ecology of egg parasitism.