ABSTRACT

Diadegma semiclausum (Hellen) was introduced to Kenya from Taiwan for the control of diamondback moth (DBM), *Plutella xylostella* L., and released for the first time in July 2002. Seven and twelve months after release, field mortality studies using the cage exclusion method were conducted at two release sites (Werugha/Taita Hills and Tharuni/Central Kenya). Four treatments were applied: fully closed and partially open cages, both with and without glue applied to the base of the plants for the exclusion of crawling predators. During this time interval, parasitism of exposed larvae rose from 15 to 60% at Werugha and from 8 to 18% at Tharuni, with a concomitant decrease of parasitism by indigenous parasitoids. Crawling predators did not seem to have an effect on mortality. Unexplained mortality increased by half between the first and second experiment at both sites, indicating additional mortality due to the parasitoid. A subsequent field simulation with different parasitoid populations showed that in the presence of parasitoids more larvae died because of abandoning the plant than due to parasitism. Dissections of larvae on the ground showed most were parasitized. Thus, it appears that mortality due to *D. semiclausum* is more than twice the measured rate of parasitism. Additional information on parasitism was collected from concurrently executed DBM yield loss trials. Parasitism by *D. semiclausum* was in the same range as in the cage exclusion method. Seven months after release, local parasitoids were present at Werugha and dominant at Tharuni, after one year, they were almost completely displaced at both locations.