

*Diadegma semiclausum* (Helle'n) (Hymenoptera: Ichneumonidae), an exotic diamondback moth parasitoid, was released in two pilot areas (Werugha in Coast Region and Tharuni in Central Province) in Kenya. Fifteen months before release, observations on the diamondback moth, *Plutella xylostella* (Linnaeus), and local natural enemy population dynamics and pest damage were initiated in both areas and continued for three years after release. The *P. xylostella* population was bimodal with higher records during dry seasons. At Werugha, the peak population of *P. xylostella* was 16.8 per plant (October 2001); at Tharuni it was 12.8 (February 2002). Populations at Werugha declined from three months after release and decreased from 5.4 per plant (before release) to 0.8 (year 3 after release). Concurrently, average damage (1.9 to 1.5) (on a 0–5 scale), proportion of attacked plants (72 to 31%) and proportion of plants in damage group > 2 (plants with head damage) decreased (21.4 to 5.3%), while total parasitism increased from 14.4 (before) to 52.5% (year 3 after release, 90% due to *D. semiclausum*). At Tharuni, *D. semiclausum* was only recovered 3 months after release. Average populations of *P. xylostella* declined from 5.9 per plant (before release) to 2.4 (year 3 after release) and damage scores from 2.3 to 1.7. The proportion of plants in damage group >2 declined from 39.7 to 4.5% while overall parasitism increased from 4.2 to 40.6% (98.3% by *D. semiclausum*). Four species of indigenous parasitoids (*Diadegma mollipla* (Holmgren), *Oomyzus sokolowskii* (Kurdjumov), *Apanteles* sp. and *Itopectis* sp., all primary parasitoids) were almost completely displaced by *D. semiclausum*. Possible reasons for the different parasitoid development between the two release areas and the displacement of the indigenous species are discussed.