



The lady beetle *Mada polluta* Mulsant 1850 (Coleoptera: Coccinellidae) was collected on yellow bells (*Tecoma stans*) in 2007 in Mexico, where the plant is native, and imported into quarantine in South Africa for screening as a potential biocontrol agent. Following several years of testing, the lady beetle was found to be host specific on yellow bells. Permission was obtained for its release, and the first insects were released at various sites in KwaZulu-Natal, Mpumalanga, Gauteng, and North West in the summer of 2013/2014. Releases are on-going, and the distribution map will be updated once establishment has been determined.

DESCRIPTION

Adult beetles are yellow and black (i), and are about 5 mm long and 4.34 mm wide. Larvae are yellow, with long, branched spines on the dorsal and lateral surfaces. From first instar to fourth instar, larval body length ranges between 2.51 mm and 5.3 mm. Pupae are yellow and brown, and are covered by the old hard, spiny skin of the larva.

LIFE CYCLE

Adult females lay clusters of 3-59 eggs on the underside of leaves (ii). The larvae hatch within 7-10 days and feed on the leaves immediately (iii). Larvae go through 4 larval instars (growth stages) before pupating, and emerge as adults within about 36 days. Adults live for up to 4 months, and females reproduce several times during that period.

FEEDING DAMAGE

Both adults and larvae feed on the leaves and, to a lesser extent, on the stems of yellow bells. They consume the leaf area in narrow, short band sets from left to right, then start again below the first set, but without ever consuming the thin line of leaf area that separates the two adjacent sets. In this manner, they skeletonise the leaf.

IMPACT ON YELLOW BELLS

The lady beetle is expected to contribute significantly to the biological control of yellow bells in South Africa, owing to several factors. Firstly, both adults and larvae are extremely damaging to the plant (iv). Laboratory studies demonstrated that the insects decrease leaf density significantly, stunting the plant's growth and reducing its competitive ability. Secondly, adult females reproduce rapidly, thus, beetle populations and their associated damage should increase in the field accordingly. Thirdly, this group of beetles (coccinellids) protect themselves chemically from predators and parasitoids, which enhances their chance of survival and, ultimately, their effect on the target weed. Biological control is the only sustainable solution for yellow bells infestations, and it is hoped that the lady beetle will reduce these plants throughout the country, thereby encouraging the indigenous vegetation to recover.



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

