



The bugweed flowerbud-feeding weevil *Anthonomus santacruzi* occurs throughout the native range of bugweed (*Solanum mauritianum*) in South America. Insects collected in Argentina were imported into quarantine in South Africa, tested for host-specificity, and released on a number of bugweed infestations in 2008/2009.

DESCRIPTION

The adult is a small (2-3 mm) black weevil with a characteristically elongated snout (i). These move around actively on the plants, feeding on the stamens of open flowers, or chewing through flower buds to feed on stamens (ii). However, in the absence of floral material, they also feed on apical leaflets and shoot tips. Adults are able to fly, and disperse well. Female weevils may live for over 3 months and actively lay eggs over this period. Since the larvae feed and develop inside the flowers, they are seldom seen.



LIFE CYCLE

Female weevils chew into the flower buds and lay their minute eggs (± 0.3 mm) in small cavities hollowed in the sides of the anthers of both immature and mature buds. Larvae usually develop singly (iii), but up to 3 may be found per flower bud. Larvae complete their development within 10 to 18 days, while pupation, which takes place within the cavity of the bud, takes a further 4 to 10 days. The emerging adults chew their way out of the buds in which they have developed (iv). From egg to adult, the entire life cycle takes 15 to 25 days.



FEEDING DAMAGE

The insects' feeding prevents the flower buds from opening. Although the adults also feed on the floral material, the larvae cause far more damage. Once the eggs are laid, the tiny larvae develop firstly within the anthers but, as they mature, they eventually consume the entire contents (petals and anthers) of the flower buds.

IMPACT ON BUGWEED

Bugweed is a major weed in the eastern higher rainfall areas of South Africa. Seed set is extremely high, and dispersal is mainly by fruit-feeding birds. Mechanical and chemical control may be used, but these methods are time-consuming, costly, and require regular follow-up treatments, since fast-growing seedlings emerge rapidly after clearing. *Anthonomus* is a very promising biological control agent that prevents fruit set and, thus, could potentially reduce the plant's enormous potential for seed dispersal. In addition, feeding on the flowers causes the abortion and abscission of buds and flowers, while feeding on apical leaf shoots in the absence of flowers causes further damage.

