

Life history aspects of two monophagous insect species feeding on *Calotropis gigantea* in Sri Lanka

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Calotropis gigantea is a plant native to Sri Lanka with an Ayurvedic medicinal value, yet it is known to be invasive in countries where it has been introduced. *Dacus persicus* and *Paramecops farinosus* (Aak weevil) are monophagous insects that feed on *C. gigantea*. Present study is aimed to elucidate the life history aspects of *D. persicus* and *P. farinosus* with their damage to the plant, in order to assess the potential of them to be used as a bio-control agent against *C. gigantea* in countries where the plant is invasive. The field sampling was done throughout the island covering 108 sampling sites during December 2014 to October 2015, and *C. gigantea* fruits were examined for life stages of the two insect species, and for any signs of damage to the fruit. *D. persicus* eggs were found in seed chamber as only one cluster of eggs per fruit, and three larval instars were recorded feeding on *Calotropis* seeds. Infected fruits drop pre-maturely with fully developed larvae inside. Subsequent pupation takes place in soil, and cocoons are creamy white and cylindrical in shape. Similarly, *P. farinosus* lay yellowish, oval and mostly one-clustered eggs in the inner-pericarp fibrous layer of the *Calotropis* fruit. Newly emerged larvae were apodous, pale yellowish-white with brown head capsule whereas developing larvae were creamy-white, curved and stout. *P. farinosus* larvae voraciously feed on *Calotropis* seeds while adults feed on leaves, buds and flowers. Fifth larval instar of Aak weevil pupated by forming silky cocoons within seed chamber of *Calotropis* fruits. Both species being seed predators highly damage reproductive structures of *C. gigantea*, thus directly influences on reproductive output of the plant. These results provide baseline information needed in adopting *D. persicus* and *P. farinosus* as potential bio-control agents against *C. gigantea*.

Keywords: Bio-control, *Calotropis gigantea*, *Dacus persicus*, invasive species, *Paramecops farinosus*

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