

Biocontrol for Salvation Jane

Six species of insects are suitable biological controls for Salvation Jane, a declared plant under the *Landscape South Australia Act 2019*.



What is Salvation Jane?

Salvation Jane is an annual weed that forms large rosettes made up of broad oval leaves. Plants produce tall, flowering stems with purple/blue flowers in spring and early summer.

Salvation Jane contains pyrrolizidine alkaloids which cause accumulative chronic liver damage, loss of condition and occasionally death. Ruminants such as sheep, cattle and goats are less affected compared to horses and pigs. It is known to have caused several horse fatalities.

How do these biocontrol insects work?

There are six species of insect that have been released in Australia. Five of these are well distributed in South Australia. The suite of five active insects target different parts of the plant including the leaves, roots, crown and flowers, providing one of the most

comprehensive and successful biocontrol options.

Leaf mining moth (*Dialectica scalariella*)

Larvae feed within the upper and lower leaf tissue in winter and spring. Heavy attack can reduce photosynthetic material, decreasing plant vigour.

Crown boring weevil (*Mogulones larvatus*)

The adult weevil will feed on the rosette leaves leaving shot holes, but the real damage is done by the larvae feeding at the intersection of the rosette leaves and the tap root – generally called the crown – from winter into spring. Plant deaths can be significant and surviving plants are often very small and produce less seed.

Over summer adult insects feed on pollen before going through a dormant period over mid-summer and early autumn. The best time to



collect adults is when they are feeding in the flowers.

Root weevil (*Molgulones geographicus*)

The adult root weevil is slightly larger than the crown weevil with the adult having the same general feeding pattern. The damage is caused by the larvae, which feed in the taproot. As for the crown weevil, adult root weevils feed on pollen in the flowers over late spring and early summer before entering a summer dormancy period.

Flea beetle (*Longitarsus echii*)

This small, shiny, dark beetle can be observed on sunny days on the rosette leaves in autumn and winter. Adult feeding is distinctive often leaving a distinctive “lace” effect on the leaf. The larvae are longer and thinner than weevil larvae and attack the taproot and the secondary roots.

Pollen beetle (*Meligethes planiusculus*)

The adults feed on pollen and the larvae feed on the pre-flowering buds, developing flowers and immature seed.

How do I disperse the insects?

You can collect your own biocontrol insects from late winter through spring. Typically, when flowers are present. Place a white sheet or tray under a Salvation Jane plant and hit the plant with a stick to dislodge the insects onto the sheet or tray. Alternatively, using a butterfly net or sweep net, steadily swing the net from side to side making a 180-degree arc. In shorter plants swing the net as deeply as possible. In taller plants sweep only deep enough to keep the upper edge of the net opening even with the top of the plants. Shake the content to the bottom of the net and close the netting halfway, trapping the insects. Push the content of the netting inside out, depositing the insects into a ventilated container.

Collected biocontrols can be stored in a ventilated container for up to a few days if needed. Additional Salvation Jane stems, leaves and flowers should be included to keep them fed and the container humid. During dispersal, open the ventilated container over healthy Salvation Jane plants. Gradually shake container content across multiple plants to prevent overcrowding and reduce competition. Biocontrols will spread to other Salvation Jane plants to do their job.

Where can I source the insects?

Landholders can contact the Northern and Yorke Landscape Board and register for Salvation Jane biocontrol distribution. A Landscape Officer will contact registered landholders to organise collection at the appropriate time.

Note: Salvation Jane is a declared plant, prohibited from movement on public roads. Outside of the Board’s distribution events landholders are only permitted to move Salvation Jane material on the same land parcel as collected.

Acknowledgements

The content of this publication has been developed with information sourced from Primary Industries and Regions, South Australia and the Hills and Fleurieu Landscape Board.

More information

Email: ny.landscapeboard@sa.gov.au

Phone: 08 8841 3444

www.landscape.sa.gov.au/ny