



Biological control of skeleton weed

Skeleton weed gall midge

Skeleton weed gall midge (*Cystiphora schmidtii*) was released in south-eastern Australia in 1971 for control of skeleton weed. It attacks all 3 known biotypes of skeleton weed within Australia. This includes the narrow leaf, intermediate leaf and broad leaf forms.

Is it safe?

Skeleton weed gall midge is host-specific to skeleton weed and will not attack other plants. No off-target impacts have ever been reported in Australia in more than 50 years.

Lifecycle

Adult gall midges emerge during spring and females insert between 60 to 180 eggs just below the epidermis of skeleton weed leaves and stems. The larvae hatch and feed within the plant, forming raised purple galls. Larvae usually pupate within the galls, or sometimes large larvae will exit the galls and pupate in soil and leaf litter.

The gall midge can complete its lifecycle in 25 days in warm weather and up to 45 days in colder weather. At least 6 generations of gall midge can occur within one season in eastern Australia. Field trials in Narembeen suggest up to 10 generations per season are possible in Western Australia.

How does it work?

Heavily infested leaves and stems die off, causing the plant to continually replace leaves and stems in its efforts to regenerate. This process gradually exhausts the plant's root reserves and may stunt the plant's growth and reduce flowering and seed production. Over

time it will make the plant weaker and less competitive. Heavy galling can also kill young seedlings before they become established.

Field trials in Western Australia show promise

Gall midge was released in spring 2023 at several sites in Western Australia. It has done well in sites with healthy skeleton weed plants for it to breed in. Once established, it can survive light grazing, however heavy grazing will reduce numbers substantially. Skeleton weed in Narembene was showing signs of dieback 7 months after insects were released, however it may take years for the full impact to be seen. Gall midge has been able to infest skeleton weed up to 3km from its release site within 1 year.



Above left – Heavily galled skeleton weed in Narembene, which had not been treated with Picloram or other herbicides, showing signs of dieback 7 months after gall midge was released. Above right – heavily galled skeleton weed in Goomalling 3 months after gall midge was released.

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