

Biological Control of Bellyache Bush

(Jatropha gossypifolia)

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Family: Euphorbiaceae

Class of Declared Weed: B (spread to be controlled - all of the Territory) and C (not to be introduced to the Territory)

DESCRIPTION

Bellyache bush is an erect, woody perennial shrub, which grows up to 3 m high. It has thick sappy stems, leaves with three to five lobes, and small red and yellow flowers. Leaves can be glossy green or purple. Stems, leaf stalks and leaf edges are covered with coarse brown hairs, which have sticky globules on the ends. Fruits have three lobes, are oblong and are 12 mm long and 10 mm across. Each fruit capsule contains three seeds, which are about 8 mm long. The plant is highly toxic, and consuming small amounts of it can cause severe stomach upsets and possibly death in humans and in stock.

DISTRIBUTION

Bellyache bush is a native of tropical America and has become a weed in many tropical regions throughout the world. It is a serious pest in Queensland, northern Western Australia and in grazing land in the Darwin, Katherine and Gulf regions of the Northern Territory.

BIOLOGICAL CONTROL

Infestations of bellyache bush should be eliminated with herbicides or by physical means, wherever possible. Control should be followed up regularly to remove any plants that survived treatment or any new seedlings that have emerged. If eradication is not possible, then biological control may be the best long-term option for the weed.

Biological control is simply a means of using natural enemies against a weed to bring it into balance with the environment. Biological control will not eradicate a weed, but can hopefully make it less of a problem, less likely to spread and easier to control with other means. To date, only one natural enemy of bellyache bush – the seed sucking bug *Agonosoma trilineatum* - has been released in Australia.

THE SEED SUCKING BUG

The seed sucking bug *Agonosoma trilineatum* feeds on bellyache bush across Central America and the Caribbean. The bug inserts its mouthparts into bellyache bush fruit and injects a liquid into the seed, which dissolves it. It then sucks up the liquid. This method of feeding destroys seeds before they develop.



Description

This bug is interesting because adult females can look very different from each other. Females can be either black with three yellow stripes, or light brown with black spots. Adult males are always striped (see photo). Adults are around 13 mm long. Young bugs are black; they then turn shiny green-gold as they shed their skin and grow, before maturing into adults.

Life Cycle

Eggs are laid in clumps under leaves and females guard the eggs. Eggs are around 2 mm across, and take around nine days to hatch. The young insects look similar to adults – they never go through the caterpillar or pupa stages. The whole life cycle takes approximately nine weeks. Immature bugs will not survive if no fruit is available.



Photo by Richard Chan, CSIRO

Two spotted females (left and centre), and one male (right) seed sucking bugs on a bellyache leaf

OTHER BIOLOGICAL CONTROL AGENTS

Several other biological control agents against bellyache bush are being screened in Mexico and at CSIRO quarantine facilities in Brisbane. If we discover that these insects will feed only on bellyache bush, then we will apply to release them in Australia. These insects include:

- A root and leaf-feeding beetle.
- Two stem-feeding beetles.
- A leaf fungus.
- A tip and leaf-feeding moth.

FURTHER INFORMATION

Agnote F22 *Bellyache Bush* describes bellyache bush and how to control it.

Agnote F39 *Biological Control of Weeds* describes the theory and practice of biological control.

For more information on biological control of weeds or other noxious weed issues, please contact the Fire and Weeds Branch of the Department of Infrastructure, Planning and Environment in Darwin, Katherine, Tennant Creek or Alice Springs.

Please visit us at our website:

www.nt.gov.au/dpifm

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