

Siam weed

Chromolaena odorata



Siam weed (*Chromolaena odorata*) is considered one of the world's most invasive weeds. It has the potential to spread across northern Australia and down the eastern and western coastlines.

Siam weed was first identified in Australia in 1994 as several large infestations along the Tully River and at Bingil Bay in Far North Queensland. Siam weed infestations have also been found in the Townsville, Mossman, Innot Hot Springs and Mount Garnet areas.

The grazing industry, agricultural production systems (particularly horticultural crops such as bananas, pawpaw and sugarcane) and forestry plantations are at risk.

Siam weed also has the potential to seriously degrade large areas of the wet tropics, dry tropic savannah grasslands, subtropical and coastal regions, and ecologically important conservation areas.



Queensland Government

Declaration details

Siam weed is a Class 1 declared plant under the *Land Protection (Pest and Stock Route Management) Act 2002*.

All landholders are required by law to keep their land free of Class 1 pests. It is a serious offence to introduce, keep or sell Class 1 pests without a permit.

Description and general information

Young Siam weed looks similar to blue top or Billy goat weed (*Ageratum* spp.), but mature plants have a growth habit similar to lantana (*Lantana camara*). Some graziers have referred to Siam weed as ‘white lantana’.

In the open, Siam weed grows as a dense tangling bush to 2–3 m. However, it can scramble up trees to a height of 20 m. Several stems develop from the crown of the plant.

The root system is fibrous and shallow in most soils, and develops an enlargement at the junction of the stem and root, which is referred to as the basal ball.

Siam weed dies back in the dry season but re-shoots after rain. Due to the presence of the basal ball, regrowth also occurs rapidly after fire, slashing and inadequate or ineffective chemical application.

Leaves

The leaves of Siam weed are soft, green, hairy and triangular in shape, with a distinctive three-vein ‘pitchfork’ pattern (see Figure 1). New growth exhibits a purple colouration.

The stems are smooth, round and fairly brittle, becoming woody at the base when old.



Figure 1 Siam weed leaves

Flowers

Siam weed flowers from May to July and again in September to October, producing masses of pale lilac flowers that appear white from a distance. They turn a darker lilac when mature (see Figure 2).

Flowering is triggered by the shorter day lengths in winter and, due to the prolific flowering, this can be a good time to identify new infestations. Any new infestations should be treated immediately to reduce the production of viable seed, and reported to Biosecurity Queensland on 13 25 23.



Figure 2 Siam weed flowers

Seeds

Siam weed produces huge numbers of windborne seeds within 8–10 weeks after flowering (more than 80 000 seeds per plant per season).

Each seed has a tuft of white hairs that allow it to be transported by wind and water. Seeds will also attach to vehicles, machinery, clothing, footwear and animals.

Most seeds germinate immediately after rain, though some appear to remain dormant for several years. Seed longevity research is continuing.

Life cycle

Siam weed is a perennial that can out-compete and smother crops and native vegetation because of its phenomenal growth rate (20 mm per day or 5 m per year) and ability to scramble up taller plants to a height of 20 m.

Health issues and toxicity

Siam weed may also cause skin complaints and asthma in allergy-prone people.

Siam weed contains very high nitrate levels. In other tropical countries it has caused cattle deaths and abortions where stock have been fed contaminated fodder.

Fire hazard

In the dry season, dense thickets of Siam weed can cause frequent and intense bushfires. Dry Siam weed stalks burn hotter and flames reach higher into trees compared to a grassfire.

Habitat and distribution

A native of Central and South America, Siam weed has spread throughout the tropical and subtropical areas of the world (see Figure 3), and is now a major weed in central and western Africa, tropical America, India and South-East Asia.

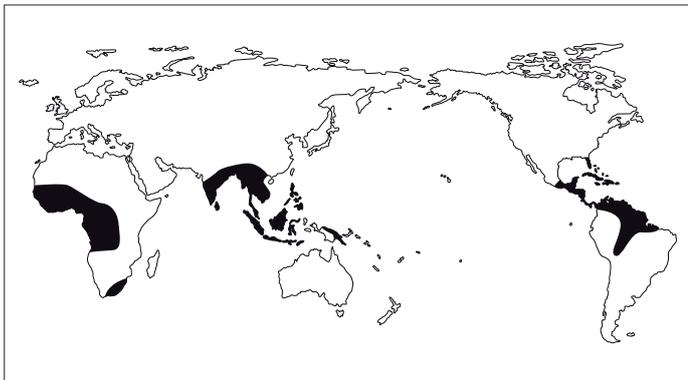


Figure 3 Distribution of Siam weed

Siam weed is spreading rapidly through the Philippines, south-west China and South Africa. Especially worrying is its spread through our near neighbours Papua New Guinea and eastern Indonesia.

Siam weed will grow in disturbed areas and also readily invades creeks, riverbanks and remnant patches of rainforests. It can also grow under dense rainforest canopies.

Siam weed has been found across a wide variety of environments in Australia, ranging from granite hill slopes through to saline and coastal environments. Siam weed is generally found in areas where rainfall exceeds 600 mm per annum. In Australia, this would be throughout coastal Queensland, northern New South Wales, the Northern Territory, northern Western Australia and along the west Australian coast (see Figure 4).

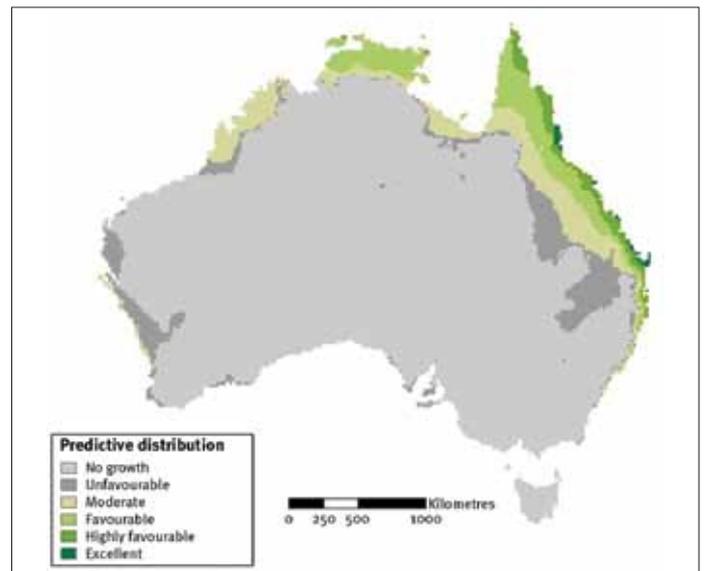


Figure 4 Potential spread of Siam weed in Australia. Image courtesy of Amanda McCall, 2004.

Control

Biosecurity Queensland's operational team is working with other government agencies, councils and the community to eradicate this weed. The Australian Government and some states and territories are contributing to this eradication program to prevent the spread of Siam weed interstate.

If you find Siam weed, call Biosecurity Queensland on 13 25 23 immediately and we can help you plan your efforts to eradicate this weed.

It is important that Siam weed be contained to currently infested areas. This can be achieved by:

- restricting entry to Siam weed infestations through fencing or other means
- cleaning down vehicles, machinery and equipment (if restricting entry is not possible)
- cleaning all clothing, shoes and camping gear before leaving an area known to have been infested with Siam weed
- quarantine of livestock for at least one week before they leave a Siam-infested property
- not moving sand or soil that may be contaminated with Siam weed material
- requesting a weed hygiene declaration when buying anything that may be contaminated with Siam weed seed
- use of signage to alert visitors to the presence of Siam weed infestations.

Mechanical control

Physical removal of the basal/root ball is very effective and recommended for smaller infestations. However, it is extremely important to make sure the removed plant does not remain in contact with soil, as any contact will result in the plant re-shooting.

Herbicide control

Chemical application at the correct rates, and before flowering, will provide effective control if carried out regularly (see Table 1 for approved herbicides and spray rates). Incorrect application can lead to chemical pruning, which will allow the plant to re-shoot. Always read the label before using any herbicide.

All control efforts should initially be aimed at halting the production of seeds.

Further information

Further information is available from your local government office, or by contacting Biosecurity Queensland (call 13 25 23 or visit our website at www.biosecurity.qld.gov.au).

Table 1 Herbicides registered for the control of Siam weed

| Situation | Herbicide/active Ingredient | Rate | Registration Status | Comments |
|--------------|--|--|---------------------|--|
| Foliar spray | Picloram + triclopyr (Grazon extra®) | 350 ml – 100 L water + BS wetting agent @ 100 ml – 100 L | Registered | Overall spray, spraying to point of run-off |
| Foliar spray | Fluxroxypyr 333 g/L | 45 ml – 900 ml per 100 L water Label rate for specific weed | PER11833* | High volume spray/dilute with water As per label instructions |
| Foliar spray | Fluxroxypyr 140 g/L Aminopyralid 10 g/L Liquid hydrocarbon 418 g/L | 500 ml – 700 ml per 100 L water Or label rate for specific weed | PER11833* | High volume treatment/spot spray As per label instructions |
| Foliar spray | Metsulfuron-methyl 600 g/kg | 10 g per 100 L water plus wetting agent Or 100 g/ha plus wetting agent Or label rate for specific weed | PER11833* | Spot spray |

* Herbicides used under permit 11833 can only be used in non-crop areas by people trained and experienced in the use of agricultural chemicals. All users of the chemicals listed under this permit must read and follow the directions in the permit (available online at www.apvma.gov.au). Other options for chemical application, including by licensed aerial operators, are also available under this permit.

Read the label carefully before use. Always use the herbicide in accordance with the directions on the label.

Fact sheets are available from Department of Employment, Economic Development and Innovation (DEEDI) service centres and our Customer Service Centre (telephone 13 25 23). Check our website at www.biosecurity.qld.gov.au to ensure you have the latest version of this fact sheet. The control methods referred to in this fact sheet should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, DEEDI does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

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