

Mother-of-millions

Bryophyllum delagoense (syn. *B. tubiflorum*, *Kalanchoe delagoensis*), *Bryophyllum* × *houghtonii* (syn. *B. daigremontianum* × *B. delagoense*, *Kalanchoe* × *houghtonii*)



Mother-of-millions are native to Madagascar and are escaped ornamental plants. Five species are commonly naturalised in Queensland. It is well adapted to dry areas because of its succulent features.

As the name suggests, one plant can reproduce a new generation from masses of embryoids (plantlets) that are formed on the leaf edges. This makes these plants hard to eradicate and follow up controls are essential.

These plants, especially their flowers, are poisonous to stock and occasionally cause a significant number of cattle deaths. When cattle are under stress or in unusual conditions they are more likely to eat plants that they would not normally eat. Shifting cattle to new paddocks, moving stock through infested rubbish dumps and wastelands, and reduction of availability of feed due to flood or drought can all contribute to cattle eating mother-of-millions and being poisoned. The plant flowers from May to October (during the drier months of the year) and the scarcity of feed at this time may cause cattle to consume lethal amounts of mother-of-millions.

Poisoned cattle show signs of dullness, loss of appetite, diarrhoea and heart failure. Some cattle may drool saliva or dribble urine. There are two responses to poisoning:

1. acute—where cattle die within a day
2. chronic—where cattle may take up to five days to die.

Some cattle may make a slow recovery if insufficient plant material was eaten.

Poisoned cattle must be treated within 24 hours of consuming the plant. The treatment is intense and needs to be given by a veterinarian, or under their direction, because of the drugs and materials used. The treatment is costly—\$70 or more for one adult cow, plus veterinary fees.

Declaration details

Bryophyllum delagoense syn. *B. tubiflorum*, *Kalanchoe delagoensis* and the hybrid *Bryophyllum* × *houghtonii* syn. *B. daigremontianum* × *delagoense*, *Kalanchoe* × *houghtonii* are declared Class 2 plants under the *Land Protection (Pest and Stock Route Management) Act 2002*.

A Class 2 pest is one that has already spread over substantial areas of Queensland, but its impact is so serious that there is a need to try and control it and avoid further spread onto properties that are still free of the pest. By law, all landholders must try to keep their land free of Class 2 pests and it is an offence to keep or sell these pests without a permit. A local government may serve a notice upon a landholder requiring control of declared pests.

Description and general information

Mother-of-millions are erect, smooth, fleshy succulent plants growing to 1 m or more in height.

All species form tall flower spikes in winter with clusters of bell-shaped flowers. Each species has a distinctive leaf shape, but all produce small plantlets along the edges of the leaves. These plantlets drop readily, develop roots and establish quickly to form a new colony.

Bryophyllum delagoense syn. *B. tubiflorum* and *Kalanchoe delagoensis* (common mother-of-millions, mission bells, Christmas bells) has grey-brown, fleshy, tubular-like leaves with up to seven projections at the tip of each leaf. The flowers are orange-red and occur in a cluster at the top of a single stem. Seeds can germinate for some years.

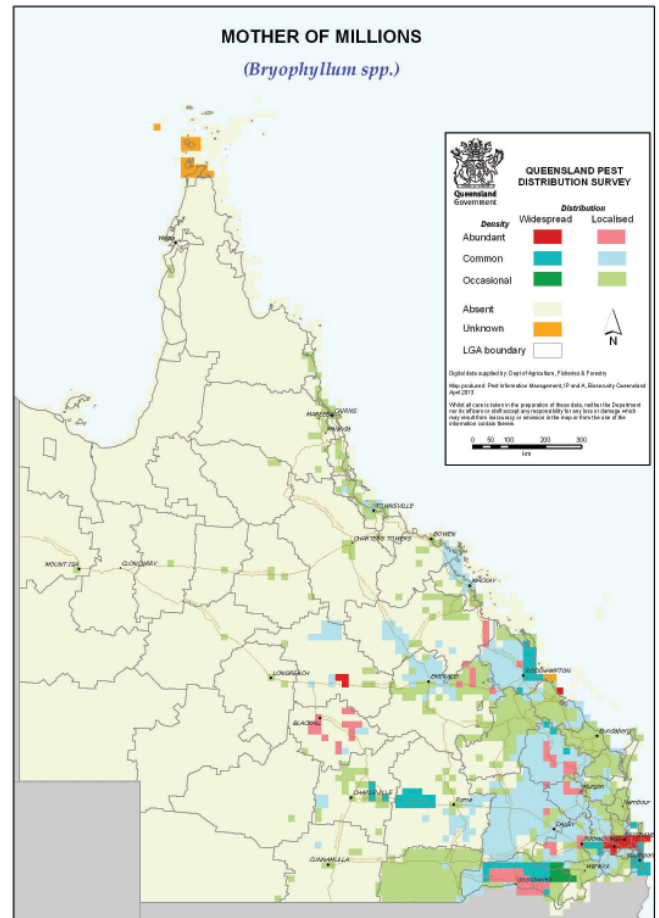
Bryophyllum × *houghtonii* syn. *B. daigremontianum* × *B. delagoense*, *Kalanchoe* × *houghtonii* (hybrid or crossbred mother-of-millions) has similar flowers arranged in a branched cluster at the top of the stem. Its leaves are boat shaped with thick stalks and notches along the edges of the leaves.

A third species, *Bryophyllum pinnatum* (resurrection plant, live-leaf), is also problematic but is not a declared pest plant. This plant has yellow-green, oval, fleshy leaflets with wavy edges and up to five leaflets per leaf. Its flowers are yellowish-green, often tinged with pink, and occur in loose clusters on stalks growing at intervals along the upper portion of the stem.

Habitat and distribution

These popular garden plants have escaped cultivation and spread in various areas of Queensland. They have become a problem in pasture lands in the central highlands around Clermont, Emerald and Dingo, and the Burnett, Moreton and Darling Downs scrub regions. The plants establish well in leaf litter or other debris on shallow soils in shady woodlands, and often grow on roadsides, along fence lines and around old rubbish dumps. They can spread from these areas, especially in flood, and establish if pastures are run down. They are adapted to dry conditions and can survive long periods of drought.

Map 1. Distribution of mother-of-millions in Queensland



Prevention

The best form of weed control is prevention. Always treat weed new infestations when small—do not allow weeds to establish. Weed control is not cheap, but it is cheaper to do it now rather than next year, or the year after. Proper planning ensures better value for each dollar spent.

Permanent control of mother-of-millions infested areas is best ensured by establishing more desirable plants in that location to compete successfully with future mother-of-millions seedlings and plantlets. This is best achieved through soil preparation, replanting, fertilising and using the area more productively.

Ensure scattered infestations and small dumping areas on properties are regularly checked and cleaned up. Day-to-day hygiene management will help prevent establishment of these weeds.

Co-operative control upstream and downstream of problem areas will help prevent re-infestation from other areas.

To prevent poisoning, keep stock (especially hungry stock) away from infested areas until the plants are controlled.

Control

Look at weed problems carefully. Decide whether to contain the weed to stop new infestations developing while reducing existing weeds. Determine what weed control is required by legislation. Determine how weed control fits into your property management. What can be done to restore and prevent re-establishment?

The best approach is usually to combine different methods. Control may include chemical, mechanical, fire and biological methods combined with land management changes. The control methods chosen should suit the specific weed and particular situation.

Fire

When suitable (e.g. after grading firebreaks), burn infestations and the accompanying debris on which mother-of-millions plants thrive. This is the most economical form of control, encourages grass competition and lessens the problem for following years, requiring only spot spraying with selective herbicides.

Biological control

The South African citrus thrips is present in Queensland and is quite widespread through the south of the state. The thrip damages the outer tissue of the mother-of-millions plant and also lays its eggs under the outer tissue. Where high populations of thrips exist, the number of viable plantlets and flowers forming on mother-of-millions is reduced.

The thrips populations vary from year to year, according to mother-of-millions populations and climate. The South African citrus thrips should not be seen as a long term control strategy—only a control option to complement other techniques such as herbicide treatment and burning.

Mechanical control

For small areas, pull up plants by hand and burn on a wood heap. Alternatively, bag the plants and dump them in a bin, the contents of which are buried at council refuse tips rather than being recycled into mulch.

Herbicide control

Before using any herbicide always read the label carefully. All herbicides must be applied strictly in accordance with the directions on the label. Where the addition of a wetting agent is recommended, always use a commercial wetting agent or surfactant.

Mother-of-millions may be controlled with herbicides at any time of the year, but infestations are easiest to see in winter when the plants are in flower. Treating infestations at this time of year also has the benefit of preventing new seeds from developing on common mother-of-millions.

Table 1 details the herbicides registered for mother-of-millions control.

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).



South African citrus thrips adult



South African citrus thrips damage to mother-of-millions

Table 1. Herbicides registered for the control of mother-of-millions

Situation	Herbicide	Rate	Comments ¹
Pastures, non-crop land	2,4-D acid (AF 300)	7 L/1000 L water per ha	Overall spray handgun
		70 ml/10 L water	Overall spray knapsack
Pastures, rights of way, non-crop land, forests, non-agricultural land, commercial/industrial areas	picloram + triclopyr (e.g. Grass-up, Grazon DS, Picker)	50 ml/10 L water	Overall spray knapsack Apply at flowering
	fluroxypyr	600 ml/100 L water + sufactant	Apply to seedlings and young plants before flowering
	picloram + triclopyr + aminopyralid (e.g. Grazon Extra)	50 ml/10 L water	Add 100% concentrate non-ionic surfactant (e.g. BS 1000) at 100 ml/100 L water Apply at flowering

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

Note: 1. Thorough, even coverage of leaves and plantlets is necessary.



This fact sheet is developed with funding support from the Land Protection Fund.

Fact sheets are available from Department of Agriculture, Fisheries and Forestry (DAFF) 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, DAFF does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.