

# Mother of millions

**Mikala Naughton**

Project Officer (Weeds),  
Orange Agricultural Institute

**Dr Chris Bourke**

Principal Research Scientist (Poisonous Plants),  
Orange Agricultural Institute

**THE PROBLEM**

Mother of millions (*Bryophyllum delagoense*) is a native of Africa and Madagascar and was introduced to Australia as a garden plant. It is a serious weed on the coast and the northwest slopes and plains of New South Wales. Consequently, it is a declared noxious weed in these areas (see map).

As the name suggests, mother of millions reproduces rapidly, producing hundreds of tiny plantlets which quickly form new colonies. It is adapted to dry conditions and can survive long periods of drought.

This increases the plant's potential to persist and spread.

Mother of millions is toxic when ingested by livestock; it is also poisonous to humans and household pets.

Mother of millions is commonly found growing on gravelly and sandy soils. It is a weed of bushland and disturbed sites such as roadsides, along fence lines, around rubbish tips and abandoned rural dwellings.

It also occurs frequently along creeks and rivers where it is spread by floodwaters.

**THE PLANT**

Mother of millions belongs to the genus *Bryophyllum*.

Mother of millions is a succulent perennial plant growing 30 cm to 1 m in height.



Photo: L. Tanner

1. A typical infestation of mother of millions (*Bryophyllum delagoense*)





Photo: L Tanner

2. A close up of the flower of mother of millions (*Bryophyllum delagoense*)



Photo: L Tanner

3. A mother of millions plantlet which develops when a projection on the leaf is broken off.

The stems are pinkish-brown or greyish in colour.

The leaves are pencil-shaped, pale green to pale brown in colour with dark green patches and a shallow groove on the upper surface. There are up to seven projections at the tip of each leaf which when broken off can develop into new plants.

The flowers are orange-red in colour and occur in a cluster at the top of a single stem. Flowering can occur from May to October.

### Look-a-like species

In NSW, there are also two less common *Bryophyllum* species. These are hybrid mother of millions (*Bryophyllum daigremontianum* x *Bryophyllum delagoense*) and resurrection plant (*Bryophyllum pinnatum*).

These plants also produce small plantlets along the edges of their leaves, are adapted to dry conditions, are poisonous and are declared noxious in various parts of the State.

Hybrid mother of millions can be distinguished from mother of millions by the shape of its leaves. See Table 1 and photograph 5.

Resurrection plant is also a *Bryophyllum* species, growing sometimes up to 2 m. It can also be distinguished from mother of millions by its leaves and flowers. See Table 1.



Photo: J Hosking

4. Leaves and flower of hybrid mother of millions (*Bryophyllum daigremontianum* x *Bryophyllum delagoense*).

Table 1: Comparison of the three *Bryophyllum* species found in NSW

	MOTHER OF MILLIONS <i>B. delagoense</i>	HYBRID MOTHER OF MILLIONS <i>B. daigremontianum</i> x <i>B. delagoense</i>	RESURRECTION PLANT <i>B. pinnatum</i>
Height (cm)	30–100	30–100	60–200
Leaves	Pencil-shaped, pale green to pale brown with dark green patches, shallow groove on the upper surface.	Boat-shaped, thick stalks, with notches along the edges of the leaves.	Dull blue-green and up to five oval leaflets per leaf with wavy edges.
Flowers	Orange-red in colour, occur in a cluster at the top of a single stem. Flowering occurs from May to October.	Orange-red in colour, occur in a cluster at the top of a single stem. Flowering occurs from May to October.	Reddish colour often tinged with pink, occur in loose clusters on stalks growing along the upper portion of the stem. Flowering occurs from June to August.



Photo: L Tanner

5. A comparison of the leaves of mother of millions (*Bryophyllum delagoense*) on the left and hybrid mother of millions (*Bryophyllum daigremontianum* x *Bryophyllum delagoense*) on the right.

## REPRODUCTION

The common name 'mother of millions' is based on the plant's ability to reproduce vegetatively in large numbers. Each plant produces small plantlets along the edges of its leaves which detach and form new plants. See photograph 3.

This makes mother of millions hard to eradicate and follow up controls are necessary.

Mother of millions also produces numerous seeds which can survive in the soil for a number of years before germinating.

## MOTHER OF MILLIONS POISONING

Mother of millions, hybrid mother of millions and resurrection plant are all poisonous when ingested. The toxic effects of these plants are due mainly to **bufadienolides** which cause heart failure. The toxins are present in all parts of the plant however, flowers are five times more poisonous than the leaves and stems.

Mother of millions and hybrid mother of millions are the most toxic however, livestock access should be restricted to all three.

Ingestion of the toxins can be cumulative and livestock eating small amounts, several times within a few days may suffer poisoning. Eating about 5 kg of mother of millions would kill an adult cow. Where the plants are thick, this amount would grow in a square metre.

Poisoning generally occurs when the plants are flowering – between May and October. Livestock are at a greater risk of poisoning if they have been

moved to a new paddock, there is a feed shortage or during droving because they are more likely to eat the plant.

If livestock have eaten a large amount of plant, they may die suddenly of heart failure.

If they have eaten smaller amounts over several days, they may develop diarrhoea (sometimes bloody), drool saliva, dribble urine and then die of heart failure. Some affected livestock will recover slowly if small amounts of plant material have been eaten and their hearts are not badly damaged.

Poisoned stock must be treated within 24 hours of consuming the plant. After this period heart function is severely disturbed and stock may be too badly affected to survive. If you suspect livestock could have mother of millions poisoning, consult a vet immediately.

Mother of millions is also toxic to humans and household pets with dogs being particularly susceptible. It is unlikely that humans or pets would eat enough plant material to become poisoned. However, because mother of millions can be found in many gardens, the likelihood of human or pet poisoning is increased.

## CONTROL TECHNIQUES

Preventing the spread of mother of millions is the best control measure.

Learn to identify mother of millions and regularly check for it in winter when the plants are in flower and are easier to see. If found remove immediately using a combination of control methods including hand removal, fire, herbicide application and rehabilitation.

Regularly check creek lines after floods for new infestations.

### Hand removal

For small infestations, mother of millions can be removed by pulling up individual plants by hand. Once the plants have been removed they should be burnt; stored in black plastic bags until completely decayed or buried. All of these procedures will prevent regrowth from leaf fragments.

Care needs to be taken when using this method of control as plantlets may detach from the leaves during removal and establish as new plants. Some regrowth will therefore occur and follow-up treatment will be required.

## Fire

***Permits may be required to light fires – check with your local NSW Rural Fire Service for permit details.***

For large infestations, fire is the most economical control option available and will kill the plants and much of the seed stored in the soil. Using fire first will reduce the cost of any spray applications.

When using fire, fence off infested areas to limit stock access and build up a fuel load. Control burn the area using a hot fire. In following years any regrowth should be spot sprayed.

Some groups have reported a 30% reduction in mother of millions each year by using control burning with follow-up spot spraying.

## Herbicide application

Thorough spraying of mother of millions with herbicides is effective if sufficient wetting agent (non ionic surfactant) is used to penetrate the waxy outer covering of the plants – especially that of the plantlets.

Mother of millions may be controlled with herbicides at any time of the year if the plants are not stressed, but infestations are easiest to see in winter when the plants are in flower. Spraying during flowering also prevents new seeds from developing.

Late autumn or early spring may be a better option if the plants are lush and growing well, because they are more likely to readily absorb the chemical. In areas that regularly flood, avoid spraying when flooding is likely.

After spraying, plants may be more palatable to livestock so exclude them from the treated infestation by resting the paddock or erecting temporary fencing. Exclusion of livestock should continue until the plants are dead. It should be noted that dead plants are still toxic and still present a poisoning risk to livestock if eaten.

A number of herbicides are available for treating mother of millions. Only a registered herbicide used according to the direction on the label should be used to control this weed. Refer to the NSW DPI publication, *Noxious and Environmental Weed Control Handbook*, for the recommended chemicals to control mother of millions. Always refer to the label when using agricultural chemicals for rates, methods and safety precautions.

Spraying with herbicides may not be 100% successful therefore, the site should be monitored for regrowth and an appropriate follow up treatment carried out.

## Rehabilitation

Once removal of the infestation is complete the infested area should be revegetated with more desirable plants to provide competition to future mother of millions seedlings and plantlets.

This can be achieved by soil preparation, replanting, fertilising, controlling pests and grazing appropriately.

Some herbicides have a residual effect and this should be checked before attempting to revegetate.

## Biological Control

Four insects have been imported into Australia for testing as biological control agents for mother of millions. Testing of the first and most promising insect, *Osphilia tenuipes*, a stem-boring weevil, has been completed. However, this agent appears to also attack closely related exotic ornamental plants. Therefore, approval for the field release of this agent has been delayed until issues surrounding the potential impact of this insect on the non-target ornamental plants have been addressed.

## WHO IS RESPONSIBLE

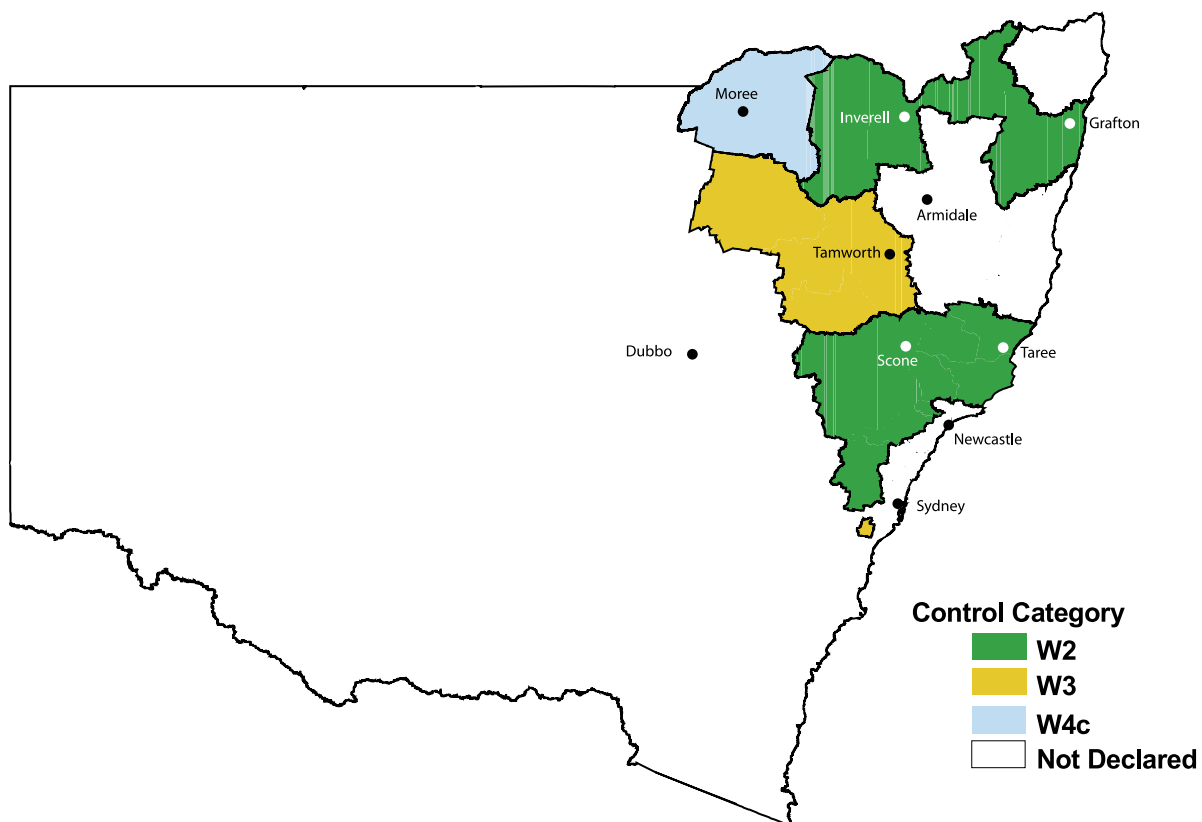
Mother of millions is a declared noxious weed in many areas of NSW. See [www.dpi.nsw.gov.au/noxweed/](http://www.dpi.nsw.gov.au/noxweed/) for a complete list of declared noxious weeds for each control area.

It has a W2, W3 or W4c Weed Control Category depending on the infestation and control area. See [www.dpi.nsw.gov.au/noxweed/](http://www.dpi.nsw.gov.au/noxweed/) for a definition of each control category and the actions required.

*The Noxious Weeds Act, 1993* is enforced by the local control authority, usually local government.

The responsibility for control of noxious plants and appropriate disposal of weed plant material on private land rests with the owner or occupier of the land. Failure to do so could result in the local control authority issuing a weed control notice, court action and a fine.

Local control authorities must adequately control noxious weeds on land under their control to prevent them infesting adjoining land. The community can assist the control of this weed by notifying the local control authority of any known infestation of mother of millions on public land.



Map: A Maguire

Areas of NSW where mother of millions (*B. delagoense*) is declared noxious, June 2005

## FURTHER INFORMATION

For further information on mother of millions contact your local office of NSW Department of Primary Industries or your local government weeds officer.

## FURTHER READING

*Flora of New South Wales*, G. W. Harden (ed), Royal Botanic Gardens, Sydney. UNSW Press.

*Poisonous plants: handbook for farmers and graziers*, E. J. McBarron (ed.), Inkata Press, Melbourne.

## ACKNOWLEDGEMENTS

The authors would like to acknowledge the comments made by Steve Ottaway and Carol Rose regarding the technical content of this publication and the assistance provided by Annette McCaffery in coordinating its production.

## ALWAYS READ THE LABEL

Users of agricultural (or veterinary) chemical products *must always* read the label and any Permit before using the product, and strictly comply with the directions on the label and the conditions of any Permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

## DISCLAIMER

The information contained in this publication is based on knowledge and understanding at the time of writing, August 2005. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

## WARNINGS

Pasture improvement may be associated with an increase in the incidence of certain livestock health disorders. Livestock and production losses from some disorders are possible. Management may need to be modified to minimise risk. Consult your veterinarian or adviser when planning pasture improvement.

Legislation covering conservation of native vegetation may regulate some pasture improvement practices where existing pasture contains native species. Inquire through your office of the Department of Natural Resources for further information.

© State of New South Wales 2005

ISSN 1832-6668

Job number 5984