



1. Habit of young tree. 2. Bark on main trunk. 3. Leaf stalks and stipules. 4. Rounded female flower clusters and young fruit.



## Paper mulberry (*Broussonetia papyrifera*)

Introduced

Not Declared

Paper mulberry is a tree native to China, Japan, Korea, Taiwan and parts of south-eastern Asia. Its bark is used for making paper and tapa cloth, a type of natural fabric produced on many Pacific islands. However, paper mulberry has become a serious weed in many other parts of the world.

### Distribution

Paper mulberry is very rare in cultivation in Australia. However, it has been recorded becoming naturalised on a handful of occasions in recent years in south-eastern and northern Queensland. It was first reported growing in the grounds of the Toowong Cemetery in 2004. Since that time it has been recorded on several other occasions in close proximity in Toowong and in nearby suburbs (i.e. at Bardon, Mount Coot-tha and Kenmore). A large infestation was also found very recently in the Daradgee area, near Innisfail, in northern Queensland. There was also a report of its invasiveness around the Nimbin area in north-eastern NSW in 2004.

### Description

This small or medium-sized tree usually grows 10-15 m tall, but occasionally reaches up to 20 m in height. It has milky sap and loses its leaves during winter. The bark on the main trunk is pale brown or greyish-brown while the younger branches are brown or reddish-brown and finely hairy. The leaves are usually alternately arranged along the stems, but may occasionally be paired or arranged in groups of three or more. They are borne on stalks 2-8 cm long and have a pair of small leafy bracts (15-20 mm long and 8-10 mm wide) at their bases that are quickly shed. The relatively large leaves (6-20 cm long and 5-15 cm wide) are quite variable in shape, ranging from heart-shaped to deeply lobed, even on the same branch. They have finely-toothed margins, pointed tips, and rough upper surfaces which are sandpaper-like in nature.

The male and female flowers are borne in different clusters on separate trees. The greenish-yellow male flower clusters are elongated (3-8 cm long) in shape and drooping in nature. They are borne on stalks 2-4 cm long in the upper leaf forks. The green female flower clusters are rounded in shape (1.5-2.5 cm across) and are also borne in the upper leaf forks. Both types of flower clusters are only produced during spring. The rounded fleshy fruit (1.5-3 cm across) develop from the female flower clusters and turn from green to yellow, orange, red or reddish-purple as they mature in summer.

### Quick Facts

- > A tree usually growing 10-15 m tall.
- > It commonly produces suckers from its shallow roots.
- > Its leaves are rough in texture and may be almost entire or deeply lobed.
- > Separate male and female flowers are produced on different plants.

### Habitat

A potential weed of riparian vegetation, urban bushland, closed forests, forestry plantations and forest margins in tropical, sub-tropical and temperate regions.





1. Root suckers emerging after removal of parent tree. 2. Leaves.

## Reproduction and Dispersal

This species reproduces by seed and also vegetatively via numerous suckers produced from its shallow roots. Seeds are mainly dispersed by birds and other animals that eat the fleshy fruit. Individual plants can also quickly develop into large colonies,

## Why is it an Emerging Threat?

While this plant is not yet a significant problem in Australia, it is regarded as an invasive weed in over a dozen countries. It is widely naturalized in the eastern United States, where it exhibits aggressive growth and quickly invades natural areas displacing native plants. It is also a serious pest in parts of South America (i.e. Argentina), Africa (i.e. Ghana and Uganda) and Asia (i.e. Pakistan and the Philippines).

## Control Methods

Seedlings and very young saplings can be removed manually, however this is impractical for larger plants due to Paper mulberry's very profuse suckering habit (root suckers have been reported up to 35 m from the parent tree). While no herbicides are specifically registered for the control of Paper mulberry in Australia, there is significant information available about its control with systemic herbicides overseas.

Garlon (i.e. triclopyr) has been very effective at controlling this species in the USA using basal bark, cut-stump, or stem injection methods of application. These methods are recommended because they focus application on the target species, minimizing the overall amount of herbicide applied, and reducing the likelihood of any off-target damage. Access (i.e. picloram + triclopyr) has also been used to control this species in northern NSW using similar methods. Foliar application of Glyphosate is only effective on seedlings or young regrowth from suckers.

In Queensland, these and similar products (i.e. Access, Garlon 600, Tordon DS and Grazon DS) can be used to control environmental weeds such as Paper mulberry via the APVMA off-label permit number 11463 (<http://permits.apvma.gov.au/PER11463.PDF>). Please read this permit carefully prior to use and, unless otherwise stated in this permit, the use of these products must be in accordance with the instructions on their labels. Within other state boundaries, it is recommended that all managers consult any relevant permits or government legislation applicable to their region.

*The control methods referred to in Weed Watch™ 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 utilisation 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, Technigro does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.*

*This information has been developed with the assistance of Dr Sheldon Navie. Photographs are also courtesy of Dr Sheldon Navie and Amy Richard. © Technigro Australia Pty Ltd 2011*

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## Look a-likes

Paper mulberry is relatively similar to White mulberry (*Morus alba*) when not in fruit, but the latter species does not produce prolific root suckers. The leaves of white mulberry also have glossy upper surfaces and are not rough in texture.



**Top.** Glossy green leaves of white mulberry.

**Bottom.** Elongated blackish mature fruit.