

Stem injection

For trees taller than 6 m, stem injection using a modified axe is the most practical method—leave no more than 2 cm between cuts.

Axe cuts for stem injection of herbicides should be made at regular intervals all around the stem (or stems). Care should be taken to ensure the axe leaves a 'pocket' in the stem, into which the chemical is immediately injected. Cuts should penetrate the sapwood (just under the bark), but not the hard central wood. Cuts made too shallow into the bark or too deep into the stem will result in regrowth. The practice of drilling holes in the stem prior to herbicide application is not recommended.

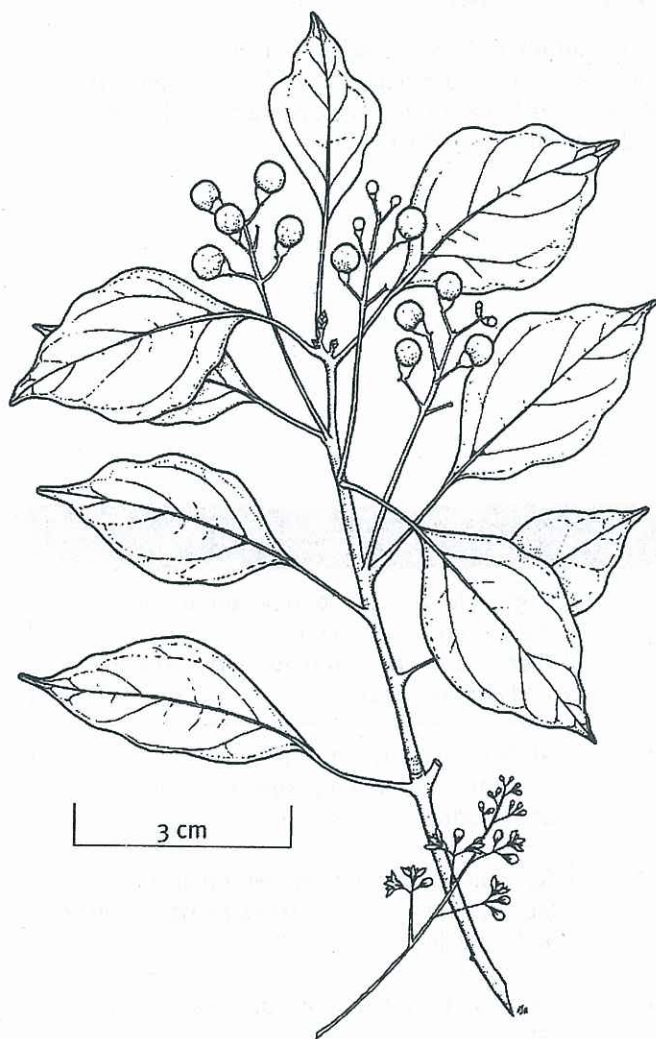
Further information

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Table 1 Herbicides registered for the control of camphor laurel

Situation	Herbicide	Rate	Comments
Foliar spray	Triclopyr-butotyl + picloram (e.g. Grazon DS®)	350–500 ml/100 L water	High-volume spray for trees up to 3 m tall; higher rate for > 2 m tall (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Foliar spray	Triclopyr-butotyl + picloram (e.g. Grazon DS®)	2.5 L/100 L water	Air blast/mister; foliar spray (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Foliar spray	Triclopyr-butotyl + picloram (e.g. Grazon DS®)	1:20 water	Gas gun or sprinkler sprayer; foliar spray (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Foliar spray	Triclopyr-butotyl (e.g. Garlon ⁶⁰⁰⁰ ®)	170 ml/100 L water	High-volume foliar spray for trees up to 3 m tall (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Basal bark spray	Triclopyr-butotyl (e.g. Garlon ⁶⁰⁰⁰ ®)	1 L in 60 L diesel	Basal bark for trees up to 6 m tall and 30 cm stem diameter or cut stump (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Stem injection	Glyphosate-IPA	2 ml of 1:1 mix with water	Stem injection for trees up to 25 cm in diameter (For pasture, non-crop, forestry, right-of-way and aquatic areas)
Stem injection	Glyphosate-IPA	2 ml undiluted	Stem injection for trees 25–60 cm in diameter (For pasture, non-crop, forestry, right-of-way and aquatic areas)

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Declaration details

Camphor laurel is a declared Class 3 plant under the *Land Protection (Pest and Stock Route Management) Act 2002*. Class 3 plants cannot be sold in Queensland and their removal in Queensland is recommended. Landholders can be required to remove Class 3 plants if they live next to environmentally significant areas such as national parks or reserves.

Description and general information

Camphor laurel is a large evergreen tree, growing up to 20 m tall. The leaves have a glossy, waxy appearance and smell of camphor when crushed. In spring it produces lush, bright-green foliage and masses of small white flowers. The spherical fruits are green (changing to black when ripe) and 10 mm in diameter.

Habitat and distribution

Camphor laurel is native to Taiwan, Japan and some parts of China. Since it was introduced in 1822, it has spread along eastern Australia from the Atherton Tablelands down to Victoria. It is particularly common along watercourses and in soil types that once supported rainforest.

In south-east Queensland, it has the potential to develop dense infestations similar to older infestations that exist in northern New South Wales.

A large camphor laurel tree may produce over 100 000 seeds every year. The seeds are readily spread by a few species of birds.

Control

Mechanical control

Removal of newly established or isolated seedlings by hand pulling or grubbing is effective.

Bulldozing is only suitable for young trees that can be removed crowns and all. Failure to remove roots of mature trees will result in regrowth.

Fire kills plant tops but produces regrowth from the base.

Herbicide control

Selection of a suitable method depends on the size of the target tree and its situation. A standing tree that has been treated may be a serious hazard to human safety or other structures when it falls. Removal of the bulk of the tree before treating the stump is preferred in such situations.

Table 1 details the herbicides registered for camphor laurel control. Before using any herbicide always read the label carefully. All herbicides must be applied strictly in accordance with the label.

Foliar spray

Foliar sprays can be used for young trees up to 3 m tall.

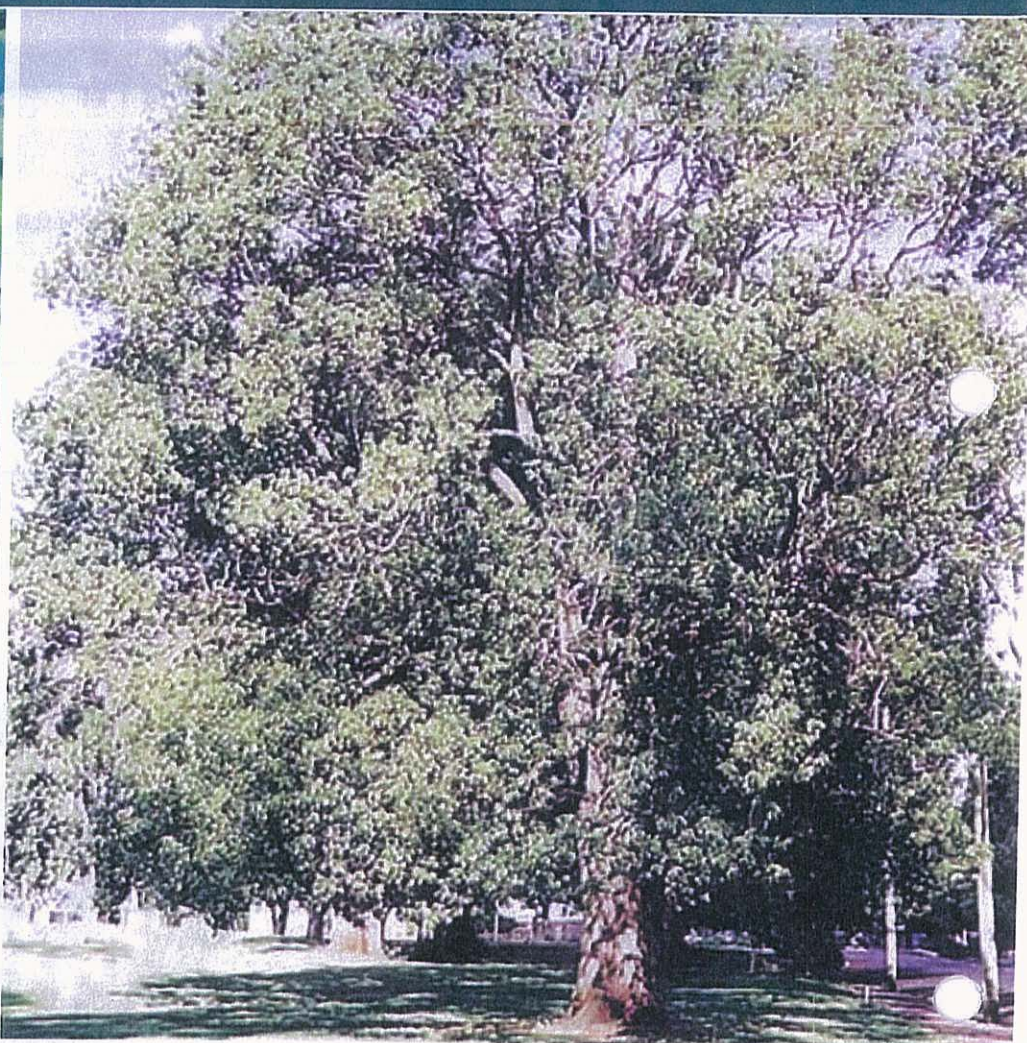
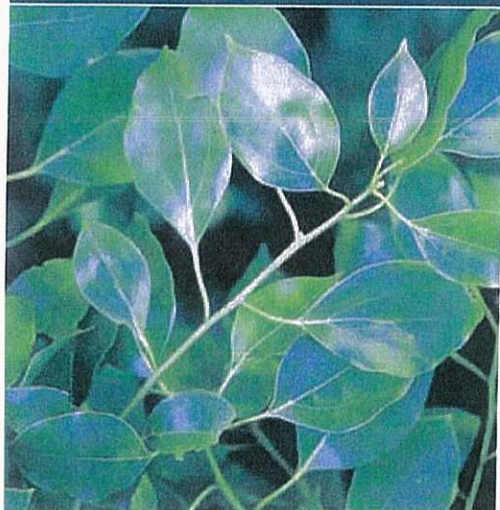
Basal bark spray

Trees up to 6 m tall with a basal stem diameter up to 30 cm and no multi-stems can be treated using basal bark or cut stump methods, although basal bark is the preferred method.

When using the basal bark method, spray from ground level up to a height of 30 cm or higher than where multi-stems branch.

Camphor laurel

Cinnamomum camphora



Camphor laurel was introduced into Australia from Asia in 1822. It has been promoted and planted as a garden ornamental throughout Queensland.

Camphor laurel is an attractive shade tree, but can be very destructive—it aggressively replaces native vegetation. The long-term consequences of its spread may result in the loss of native wildlife and agricultural productivity over large areas of south-east Queensland.

Camphor laurel invades pastures and disturbed riparian systems. It tends to germinate under fences and power lines (wherever birds rest and deposit the seed). As a

result, it can push fences over and disrupt power facilities. It is a troublesome weed on dairy farms throughout south-east Queensland and northern New South Wales.

Along the waterways of south-east Queensland, camphor laurels are replacing the native blue gums threatening koala populations.

Old camphor laurel trees develop a massive root system that can block drains and crack concrete structures. The average suburban backyard is far too small to accommodate a mature camphor laurel without problems. Removal of a mature tree can cost hundreds of dollars.



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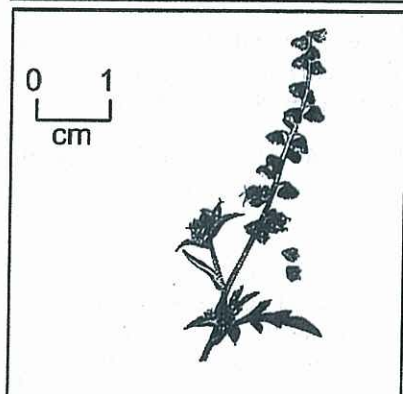
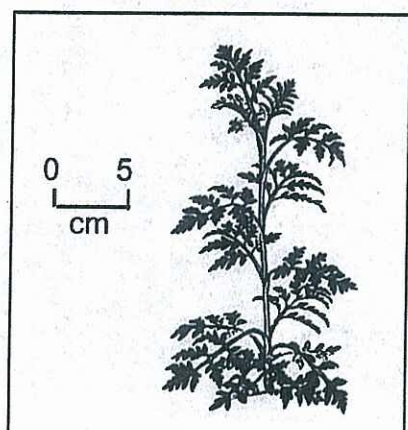
Further information

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Table 1 Herbicides registered for the control of annual ragweed

Situation	Herbicide	Rate ¹	Comments ²
Boom spray	Dicamba (e.g. Banvel 200®)	22 L/ha	For commercial and industrial land, and right-of-way areas
Spot spray		1.5 L/100 L	
Knapsack		330 ml/10–15 L/150 m ²	
Boom spray	Bromacil 800 g/kg (e.g. Hyvar X®)	3.5–6.5 kg/ha	For commercial and industrial land, and right-of-way areas
Boom spray	Bromacil + diuron (e.g. Kromac®)	4.5–6.5 kg/ha	For commercial and industrial land, and right-of-way areas

1. The registered rates are for non-crop uses. Consult label for in-crop recommendations.
2. Spray plants when young, before flowering (i.e. before the end of December). These herbicides are not selective against legumes and damage to legume species may result.

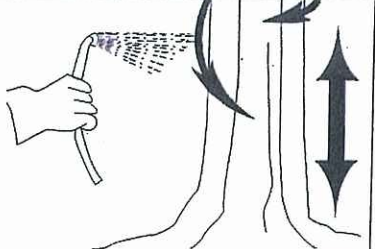


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Appendix B

Weed Control Techniques

Weed Control Techniques

Hand Weeding • Hand-pulling is a relatively gentle control method for seedlings, herbs and grasses. • Hand-pulling is best carried out when the soil is damp, when the root systems are more easily dislodged and less damage is done to the soil structure. • A number of weeds can be easily hand-weeded from the bush, particularly young plants that have not developed an extensive root system. • This method of control can be very effective when dealing with small populations of environmental weeds. • Attempt to prevent seed dispersal whilst hand weeding • Plants with the potential to regrow from discarded material should be carefully bagged and removed.	
Dig out plants with tougher root systems: This technique is useful for species that grow from a solid central crown below ground level: • Insert a long knife or narrow trowel into the soil outside the root system. • Gently loosen the soil, work around the roots and then work the plant out gently. • Plants without seed that will not resprout can be left to rot. • Attempt to prevent seed dispersal whilst hand digging out weeds • Plants with the potential to regrow from discarded material should be carefully bagged and removed.	
Spraying Foliar spraying is the use of herbicide diluted with water or diesel at a specific rate, and sprayed over the foliage to the point of runoff (until every leaf is wetted but not dripping). This method is most suited to shrubs, grasses and dense vines less than 6 m. Advantages include quickness and economy. Disadvantages include the potential for spray drift and off-target damage. Boom or Blanket spraying: using a boom spray from a tractor or 4-wheel drive vehicle can be used to treat large areas completely infested with weeds, especially with selective herbicides. Indicating the location of areas to avoid before spraying may decrease the chance of overspray. Spot spraying: Smaller infestations can be sprayed using a backpack/knapsack spray unit or quad mounted spraypack. This technique can target individual plants and is useful for on-going or follow-up maintenance.	
Stump Spray Basal bark spraying is suitable for thin-barked woody weeds and undesirable trees. Basal bark spraying is also an effective way to treat saplings, regrowth and multi-stemmed shrubs and trees. This method involves mixing an oil soluble herbicide in diesel and spraying the full circumference of the trunk or stem of the plant. It is important to cover the entire circumference of the trunk on every stem arising from the ground to a height of around 30 cm.	
Chipping method Useful for killing trees and shrubs to be left <i>in situ</i> to naturally decay: • Shallow cuts are made just under the bark into the living tissue below the lowest branch; • Herbicide applied with a squeeze bottle immediately (within 30 seconds) into the exposed cut surface; • Continue cuts around the trunk at the same level, with 5cm gaps between each cut. • Generally 1 part Glyphosate to 1.5 parts of water is suitable to achieve a kill with most species	