

Controlling Wild Olives (*Olea europaea*) using the basal bark treatment

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Olives (*Olea europaea*) were introduced into Adelaide in 1836. Olives will spread from plantings to become naturalised or 'wild'. Wild Olives are very adept at invading and establishing in new environments to become the dominant plant species.

Olives outcompete native vegetation reducing both floral and faunal biodiversity, and contain volatile oils increasing bushfire risk.

Under the *Natural Resources Management Act 2004* (the NRM Act) feral olives are a declared plant, and the South Australian Declared Plant Policy specifies that a landholder must control olives on their property, unless they are planted and maintained for domestic or commercial use. This policy can be found on the Biosecurity SA website at: www.pir.sa.gov.au/biosecurity.

Management and control

Basal bark technique

This is a technique where the bark on the lower trunk is treated with herbicide. Each trunk, all branches and branchlets, including the top of the lignotuber, are coated to a calculated height (see next page) with a herbicide mix of Triclopyr (600g/L) (e.g. Garlon or Tri-pick) mixed with diesel or vegetable based oil such as Biosafe oil (safer herbicide carrier for environment than diesel). Complete coverage of the trunk area is critical so that no spots are missed, as an olive may recover to later shoot from these missed areas.

This technique best suits young to medium aged trees where the bark is still relatively smooth.

Multiple, consecutive doses may be required to complete a treatment, allowing the bark to slowly absorb the chemical

mixture. Operators need to be skilled to ensure there is an effective application.

The basal bark technique is not a complete replacement for other methods of Wild Olive control but provides another option. In some cases a combination of techniques, such as basal bark and drill and fill, will get the best results.

The main advantage of basal bark is that it can be applied in significantly less time than the conventional drill and fill, allowing a greater number of trees to be treated for the same cost.

Other advantages include: relatively easy to apply, low equipment costs, low risk of off-target damage, the reach of the spray wand is friendly to operator and reduces the need to trim branches.

The effects of a treatment may not be immediately obvious and can take some months for complete leaf drop to occur, which will be followed by the death of the tree and lignotuber. As with other Wild Olive control techniques, treatments are not always successful and some trees may eventually recover.

Monitoring and prompt reapplication to any regrowth can prevent full recovery.

How the basal bark treatment works

The structure of young olive bark acts like an open lattice and allows fatty substances, like oils, to pass through.

Diesel or Biosafe oil carries the herbicide through the bark layer, penetrating into the living cambium layer of the tree. There it creates a blockage of the stem preventing water and nutrients exchanging between the leaves and roots of the tree.





Applying the basal bark treatment.

Complete control depends on the stem being entirely ringed or encircled from ground to desired height. There it acts like a physical barrier, eventually starving and killing the treated tree.

Timing

Treatments should ideally be timed for spring to early summer when the olives are more actively growing. Do not apply basal bark treatment when the tree is showing signs of stress e.g. hot weather or drought conditions.

Bark thickness

Barks will influence the effectiveness of treatment and amount of mixture required. A good indication of suitable bark thickness is if the green (cambium) layer on the main stem is visible when simply scratched with a key. The bark on the lignotuber may be a little thicker than this.

Weather conditions

Stems and trunks need to be dry. Do not apply for 24 hours after rainfall or where rain is expected within the next 24 hours.

Temperatures should be between 15–30 degrees Celsius. Wind strength should be light to moderate (< 30 km/h).

Herbicide rates

Registered rate is Triclopyr (600 g/L) (e.g. Garlon 600) 1:30 L diesel or Biosafe oil; Australian Pesticides and Veterinary Medicines Authority. More information can be found in the 'Weed control handbook for declared plants in South Australia' at: www.pir.sa.gov.au.

Application

The mixture is applied to the trunk and branches at low pressure, more of a drizzle than a spray. Complete coverage to the calculated height is required. No gaps or spots should be left uncovered by the mixture. Avoid chemical run-off onto the ground.



The large lignotuber is where the olive plant stores nutrients and is the focus of the basal bark treatment. © D Hughes

Guide to calculating height of treatment

To determine the height of a treatment multiply the diameter of the main trunk x 12. For example an olive with a 100 mm trunk diameter would be treated from the ground lignotuber to 1.2 m. For treatment heights above a safe reach, e.g. 1.8 m, look at multiple doses with a minimum of 10 minutes between doses. A 450 mm trunk diameter calculates to 5.4 m or three consecutive doses to 1.8 m high. Where a tree is multi stemmed use the width of the widest stem and treat all stems to that height.

Personal safety

Personal protective clothing and equipment should be worn including: respirator, long sleeves, long pants, chemical rated gloves, safety glasses, and rubber boots. Disposable chemical suit is optional.

Off-target damage

In areas of sensitive native vegetation, other methods like drill and fill may be preferable to avoid damage to surrounding native plants.

More information

Watch the videos on basal bark and drill and fill treatment on YouTube. Scroll down to 'Weed information': www.youtube.com/user/amlrnrmbboard.

Contact your local Natural Resources Centre for further information, advice and assistance in controlling Wild Olive.

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