

# factsheet

## Garden escape

### topped lavender in the Clare Valley, South Australia



t o p p e d l a v e n d e r

#### Background

Topped lavender (*Lavandula stoechas* ssp. *stoechas*) originates from the Mediterranean region of Europe. Like other garden plants from this region, it is well suited to the Mediterranean climates (ie hot dry summers and cool, wet winters) of southern Australia. It is a popular plant in the nursery and therapeutic industries.

#### Garden and plantation escape

Cultivars of topped lavender are of particular value to the nursery industry which promotes it for use in 'water-wise' gardens. In the higher rainfall Mediterranean regions of Australia, such as the Clare Valley in South Australia, it is demonstrating invasive characteristics particularly in areas of conservation significance.

Some cultivars are claimed by producers to be sterile (unable to produce viable seed) and non-invasive, but further data is required to support this. The main infestations found south of Clare to Sevenhill, are reported to have escaped from a commercial plantation.

Topped lavender has a number of weedy characteristics:

- prolific seed production (seeds germinate throughout the year)
- suitability to the environment
- ability to form dense, competitive stands and replace the desirable, native species.

**Project:** potential for developing an integrated management program for an invasive garden escape, *Lavandula stoechas* ssp. *stoechas*, when there are conflicting impacts on the community, industry and environment.

**Participants:** Rural Solutions SA Animal and Plant Control, South Australia; Northern and Yorke Natural Resources Management Board.

**Location:** Clare Valley, South Australia.-

**VET sector resource:** RTD5401A *Define a pest problem in a regional or broader context.*



Topped lavender seeds are dispersed by water, wind, birds and contaminated soil. It can also spread vegetatively via cultivation, vehicles and machinery and dumping of garden waste.

#### Impacts and perceptions

##### Impacts

Once it has escaped the confines of a 'garden fence', topped lavender can have significant impacts on the surrounding areas. In the Clare Valley it has been shown to impact on:

- **Biodiversity** - it infests grassy woodlands and replaces other understorey species such as the nationally endangered white beauty spider orchid (*Caladenia argocalla*). This native plant has a known

population size of just 500 plants in the Mount Lofty Ranges.

- **Pastures** - it is highly unpalatable to most domestic livestock. It reduces pasture production and harbours rabbits.

##### Community perceptions

There are conflicting community perceptions relating to topped lavender and its cultivars in the Clare Valley. Some place a positive value on this plant and others a negative one:

- **Environmental** - topped lavender is a threat to biodiversity conservation and management.
- **Agricultural** - topped lavender has no fodder value, is unpalatable to stock, invades degrading pastures and harbours feral animals.
- **Horticultural** - cultivars are highly valued for 'water-wise' gardens, frost resistance, high aesthetic value and attractiveness to bees.
- **Commercial** - commercial honey producers believe that topped lavender in the Clare Valley produces negligible volumes of pollen and

nectar in average rainfall seasons. It can also taint the bees wax with an orange colouring which reduces the quality of the honey. Perfume and therapeutic industries use the highly aromatic oil that can be extracted from the topped lavender.

## Development of the topped lavender management plan

It is not always feasible to eradicate weeds from an area. However the development and implementation of a management plan can prevent further spread and reduce the impact of the weed on agricultural production and natural ecosystems.

The local Natural Resources Management (NRM) Board considers the management of topped lavender to be a priority and has funded the production of a management plan.

The management plan recommends:

- comprehensive distribution mapping
- facilitating information exchanges with stakeholders
- developing and implementing operational programs for control
- development of appropriate extension material for the education of landholders and home gardeners
- consideration of possible incentives for landholders to undertake control of topped lavender.



Topped lavender, (foreground), is frequently found on the fence-lines of infested paddocks.

## Distribution mapping

The distribution of topped lavender within a defined area of the Clare Valley was mapped by consultants with Rural Solutions SA Animal and Plant Control. The study found that topped lavender populations were:

- at medium or high densities at 65% of the areas that were infested
- present with native vegetation and/or pasture at 95% of infested sites
- potentially associated with distinct soil types
- potentially associated with large bushfires such as the Ash Wednesday fires.

## Stakeholder involvement

If an invasive species is to be effectively managed, it requires the engagement and participation of all relevant stakeholders. There are very few stakeholders engaged in the control of topped lavender in the Clare Valley. More landholders must be actively engaged if effective control methods are made available and the benefits of these controls are demonstrated.

At present, the Department for Environment and Heritage, the Native Orchid Society of SA and the Threatened Plant Action Group undertake topped lavender control around populations of the nationally endangered white beauty spider orchid.



Productivity of grazing land is reduced as the unpalatable topped lavender invades.

Volunteers are heavily relied upon to carry out the on-ground control (eg weed removal, limited herbicide application and slashing) and staff from DEH provide technical expertise.

## Management options

Currently there is no best practice management identified for topped lavender. An integrated weed management plan that incorporates a range of control methods is required. Effective and economic strategies to control topped lavender and any off-target risks associated with their implementation, need to be identified. The management options in both agricultural and environmental land use areas are largely based on anecdotal evidence as there is no current research for control of topped lavender in Australia.

A cost benefit analysis to assess the feasibility of the management options is also required. This can only be determined after acquiring knowledge of the current distribution, costs of control and persistence of the weed problem. Undertaking the recommendations of the management plan will assist with obtaining this information.



The invasive characteristics of topped lavender allow it to form dense, competitive stands.

Examples of tactics used to manage topped lavender		
Chemical	Duty of care and effective herbicides	<p>Appropriate herbicide use can provide effective control. Seek advice and read and follow label directions carefully before application.</p> <p>Note: For further information see guidelines on the Weeds CRC website: <i>Herbicides: knowing when and how to use them</i> and <i>Herbicides: guidelines for use in and around water</i>.</p> <p>Different herbicides are available for use on topped lavender depending on land-use and proximity to sensitive off-target species (on- and off-property).</p> <p>The most effective herbicides may be relatively volatile so extreme caution must be used.</p> <p>Topped lavender is not well controlled by aqueous herbicide solutions. Diesel can be used as an adjuvant to increase herbicide uptake.</p> <p>For best results, application should occur when plants are actively growing in winter-spring</p> <p>Note: It is critical to avoid using volatile herbicides in spring to minimise off-target damage to vineyards which are undergoing bud-burst at this time.</p>
	Spot-spray	Triclopyr and diesel have been used effectively as spot-spray treatments on larger infestations but this mix can have serious impacts on off-target species due to physical and vapour drift.
	Cut and swab	<p>Applying herbicide to cut stems is most appropriate for areas of conservation significance where spot-spraying and cultivation may pose a very high risk of off-target damage.</p> <p>Also practical for small or isolated infestations.</p>
Cultural	Grazing	<p>Grazing with domestic livestock is not an effective management tactic as it is unpalatable.</p> <p>Heavily grazing paddocks infested with topped lavender will generally increase the distribution and abundance.</p>
	Fire	<p>Seedling germination is often stimulated after a fire event and plants can rapidly regenerate. However, infestations in the Adelaide Hills that have been burnt in autumn have been virtually destroyed.</p> <p>Burning may provide an opportunity to treat re-growth with herbicides.</p>
	Pasture	Sowing or improving pastures on agricultural land will increase competition from desirable pasture species.
Mechanical	Cultivation	Cultivation can provide effective control, particularly for degraded pastures but it may need to be repeated as required for control of plants which have regenerated or newly emerged. It can assist with seedling control if undertaken in spring.
	Slashing	Usually plants respond to slashing by rapidly regenerating from the woody base. It may be effective when used with herbicide application.
	Grubbing or hand-pulling	Hand removal of easily accessible, individual plants in areas of conservation significance where minimal soil disturbance is required can be effective. Most effective after significant rainfall (ie soil profile wet to 15 cm).
Biological		Currently there are no biological control agents for use in topped lavender management. It is highly unlikely to be an appropriate option for control due to the requirements of target specificity and the economic cost:benefit ratio of undertaking a such a costly program.
<p><b>Note on management:</b> It is essential to monitor and use follow-up treatments to control plants that have regenerated or emerged after treatment. An integrated management program, ie a combination of tactics, will provide best medium- to long-term control.</p>		



Topped lavender stems can be cut near the base in preparation for herbicide application.



Herbicide should be painted or swabbed onto recently cut stems for best uptake and results.



Vineyard proximity to infested pastures limits herbicide usage in these areas.



The management plan for topped lavender has identified the need to reduce the impact of this weed on native vegetation in the Clare Valley. This includes restoration or protection of threatened species and plant communities.

## Community involvement

As the invasiveness of topped lavender cultivars in the higher rainfall areas requires further investigation, it should be assumed that commercial cultivars have the potential to become part of the weedy populations.

Educating the horticultural, nursery and garden sectors on how to manage topped lavender to reduce this weedy risk is essential to the success of the management plan.

Community values and involvement play a significant role in determining the success or failure of management programs.

The management program for topped lavender in the Clare Valley does not currently recommend its prohibition from sale and enforced control but there are a number of positive measures that could be undertaken to reduce the impact on biodiversity and pastures. Private landholder participation in management is more likely if funding, methods and equipment are available for effective control activities.

Voluntary community involvement in collaboration with key stakeholders would also achieve favourable management outcomes. This would include:

- educating consumers so that they can make informed decisions when purchasing horticultural products and reduce the risk of future escapes
- training key community members so that they have the ability to detect and respond appropriately to new topped lavender incursions.

## The future

### Future research

There is a need for extensive research into the most appropriate management of topped lavender in agricultural and conservation areas.

Trials to examine the response of topped lavender to fire and how it may affect fire behaviour have been

proposed by the Department of Environment and Heritage.

The results of trials that improve targeted methods of control will be included in a 'best practice management guide' for topped lavender. Such a resource will increase the landholder capacity to self-manage some of the topped lavender infestations that are present in the Clare Valley.

## Resources and funding

The ability to implement the management plan's recommendations depends upon not only on engaging stakeholders and the community but also the securing of funding and resources.

The ability to secure funding and resources may be assisted by the recent inclusion of topped lavender as a high priority weed in the regional weed risk assessment. Weed Risk Assessment is a prioritisation process by which plants can be assessed for the degree of risk they represent to an area. It is based on a weed's relative importance and feasibility of control and is a tool that assists weed management actions.

At present there have been no resources allocated to implement any management actions other than the current site-specific work removing topped lavender from areas containing the threatened native orchids.

**For further information visit the Weeds CRC's website: [www.weeds.crc.org.au](http://www.weeds.crc.org.au)**

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