

Serrated tussock

Nassella trichotoma

AGRICULTURE VICTORIA

DECLARED NOXIOUS WEED FACT SHEET



Invasive plants cause significant detrimental impacts in Victoria. They are a serious threat to agricultural production, biodiversity and social values. Agriculture Victoria is implementing a risk-based, biosecurity approach to the management of invasive plants. Government intervention is focused on coordinated, statewide actions which prevent new high-risk species becoming established while seeking to contain targeted, established high-risk species. Adopting this approach will provide the greatest returns on investment. All stakeholders need to play their part in preventing new high-risk invasive plants from establishing and spreading.

In Victoria, declared noxious weeds are classified under the *Catchment and Land Protection Act* (CaLP) 1994 as:

State prohibited weeds (SPW)

These weeds pose a significant threat to Victoria and when infestations occur, they can reasonably be expected to be eradicated. The Victorian Government is responsible for their eradication.

Regionally prohibited weeds (RPW)

These weeds are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region. Land managers must take all reasonable steps to eradicate regionally prohibited weeds on their land. The high-risk invasive plants declared as RPWs are among the highest threats to regional biosecurity at a catchment scale.

Regionally controlled weeds (RCW)

These weeds are usually widespread and are considered important in a particular region. Landowners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

Restricted weeds

This category includes plants that pose an unacceptable threat to this state or to other parts of Australia if they were to be sold or traded in Victoria. Trade in these weeds and their propagules, either as plants, seeds or contaminants in other materials is prohibited.



Legislative status in Victoria



Regionally Prohibited in Glenelg Hopkins, Wimmera, Mallee, North Central, Goulburn Broken, North East and East Gippsland CMAs



Regionally Controlled in Corangamite, Port Phillip & Westernport and West Gippsland CMAs

The purpose of this fact sheet is to:

- provide basic identification information on serrated tussock
- summarise best practice control measures, hygiene and prevention information
- inform landowners of their regulatory responsibilities.

Plant biology

Type of weed:

Agricultural, environmental

Life form:

Perennial tussock-forming grass

Stems:

Flowering stems with many branches. Initially erect up to 95 centimetres long, drooping at maturity to touch the ground. Usually breaks off at base after seed sets. Turns purplish soon after flowering; turns golden when seed is ripe.

Leaves:

Numerous, thin, fine, 0.5 millimetres in diameter to 50 cm long, tightly rolled, appearing circular in cross-section, with small serrations, felt by running the leaf between the fingers from tip to the base. Green in summer and yellow-green in winter with a white base. Tips of old leaves are bleached and fawn in colour. Distinctive ligule – rounded, white, membranous, hairless, 0.5 to 1 millimetres long, protrudes vertically at the junction of the leaf blade and the leaf sheath and continuous with sheath margins.

Flowers:

An open branched panicle growing to a length of 35 centimetres, with the major branches in pairs and the numerous branchlets in twos or threes. Florets are small and inconspicuous and are formed towards the ends of the branchlets.

Fruit:

No fruit, but seeds are 1.5 to 2 millimetres long and pale brown in colour turning purplish at maturity. The basal section of the seed is 1.2 millimetres long with white silky hairs and a rough upper section. The awn is 20 to 35 millimetres long, attached off-centre, twisted in the lower one-third of the seed and rough to touch. The seed is enclosed by two purple or reddish-brown, 6 to 10 mm long glumes tapering gradually to a point.



Impacts

Ecosystems and waterways

With its diffused and fibrous roots, serrated tussock has a long lifespan. Seedlings of this weed can be difficult to pull out of the soil.

Dense infestations of this weed can pose a serious fire hazard with a recorded burn intensity of up to seven times greater than native grasslands.

Seed heads create additional hazards where they build up against housing, sheds, roadsides and fence-lines, particularly in the rural and urban areas of outer west Melbourne.



Growth calendar

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flowering												
Seeding												
Germination												
Dormancy												
Treatment												

Serrated tussock takes only seven years from establishment to dominate a pasture or native grassland, threatening rare native plant species and resulting in a loss of flora biodiversity.

The plant is unpalatable, and infestations commonly expand as other species are selectively grazed out. This excludes other ground flora and eventually reduces habitat for native fauna.

Agricultural and economic

Serrated tussock is a serious weed of pasture with significant impacts on carrying capacity and a reduction in agricultural return. Its presence greatly affects land value.

Livestock are unable to digest the plant due to its high fibre and low protein content, resulting in a loss of condition and in extreme cases starvation.

Animals forced to eat the plant lose condition resulting in a lowered wool quality. The seeds of serrated tussock also contribute to vegetable fault in wool thus impacting on the quality of wool produced.

Social value and health

Even in dense patches, this weed is unlikely to affect recreational activities or human access. Seed heads may accumulate in creeks and channels, slowing water movement and hindering fishing activities.



Preferred habitat

Serrated tussock can grow in a wide variety of climates with an annual rainfall of 450 to 1000 millimetres. The weed is not limited by soil type or fertility but favours well drained areas. It is tolerant of freezing conditions. The plant can be found across many areas of the landscape including in pastures, roadsides, urban 'wasteland' areas, native grassland, grassy woodland and dry coastal vegetation.

Rate of growth and spread

Serrated tussock is a prolific seeder with 90 per cent of the plant self-pollinating. Seed heads of the plant are carried along the ground and in the air and may be blown considerable distances of up to several kilometres. The seeds of the weed are also dispersed by moving water, mud, in hay and fodder, on machinery and equipment, coats of livestock and in the droppings of animals. The seed takes eight to 10 weeks to mature once flowering stems emerge and can remain dormant for approximately six months before germinating.

Seedbank/propagule persistence

Seed production of serrated tussock is abundant, and a hectare of dense tussock growth can produce more than two tonnes of seed annually. Large plants can produce 100,000 seeds a year.

The weed persists for many years producing new flowering stems and some new leaves each year. The plant rarely flowers in the first year but continues its vegetative growth until the second summer when flowers and seeds are usually produced.

Seeds can remain dormant in the soil for over 15 years.



Prevention – what you can do

Preventing the spread of infestations is the best option for weed control. To minimise the risks you can:

- ensure imported fodder, grain, gravel, sand and soil is free of seed contamination before purchase, sale or movement
- thoroughly clean all vehicles and equipment to remove any soil, seed or parts of the plant before leaving infested areas and before entering areas that are free of the weed
- maintain weed-free buffer zones between infested and non-infested land
- it is an offence to sell, transport or deposit onto land any material contaminated with noxious weeds.

Controlling serrated tussock

Landowners in the Port Phillip and Westernport CMA have a responsibility to prevent the growth and spread of serrated tussock from their land. Following these principles will assist with that goal:

- treat all plants before seeding
- use a combination of control methods
- keep clean areas free of weeds and manage them to prevent weed invasion
- remain vigilant: monitor and remove any new incursions or emerging plants
- be persistent. Regular follow-up and inspections are a vital component of any weed control program
- ensure re-infestation does not occur from the original source.

Control programs should aim to destroy all established plants, preventing seeding and encouraging an aggressive pasture to compete with seedlings of serrated tussock.

Physical removal

Grubbing and removing individual plants is an effective way to eradicate small isolated infestations. The base of the tussock needs to be removed completely for this to be effective.

Ploughing infested areas in spring and cultivating throughout summer and autumn to kill all tussocks and seedlings is effective.

Chemical control

Under Victorian legislation there are controls on the use of agricultural chemicals which include requirements for keeping records of chemical applications. It is the responsibility of the user to be familiar with this legislation.

Farm chemicals are registered for specific uses. Each chemical has a 'product label', which documents the approved use and the approved rate of use within each state. This label is important in determining the appropriateness of chemical use.

Other controls include the requirement to possess an Agricultural Chemical Users Permit to allow use of certain chemical products and restrictions of use of certain chemical products in Agricultural Chemical Control Areas.

For further Information please refer to Agriculture Victoria's website on Chemical Use:
<http://agriculture.vic.gov.au/agriculture/farm-management/chemical-use>

Choose only products registered for use in your particular situation. Read the product label carefully and follow all label instructions.

Chemical retailers can provide information on chemical products registered for your situation.

They can also supply a 'material safety data sheet (MSDS)', which outlines the health and safety information about a product. This information is also available from chemical manufacturers and product labels are available from the Australian Pesticides and Veterinary Medicines Authority website: <http://www.apvma.gov.au>

Using fire

Serrated tussock burns readily but recovers quickly whilst desirable pasture and native species do not. This can lead to bare ground which is susceptible to reinvasion by serrated tussock. Buried seed is also unaffected by fire. Fire is not an effective control option however it can be a good opportunity to treat any plants that germinate after a fire to exhaust the seed bank.

How to maximise your efforts

- Work with your neighbours
- Make a long-term management plan and stick to it
- Review and amend your plan as appropriate
- Seek professional advice
- Aim to treat every plant
- Don't let plants go to seed
- Remain vigilant and always follow up the previous season's work.

References

Blood, K. 2001, *Environmental weeds: a field guide for SE Australia*, CH Jerram, Science Publishers, Mt Waverley, Victoria, Australia

Muyt, A. 2001, *Bush invaders of south-east Australia: a guide to the identification and control of environmental weeds found in south-east Australia*, RG & FJ Richardson, Victoria.

Parsons, WT & Cuthbertson, EG. 1992, *Noxious Weeds of Australia*, Inkata Press, Melbourne, Sydney.

Accessibility

If you would like to receive this publication in an accessible format, please telephone Agriculture Victoria on 136 186.