

SERRATED TUSSOCK

Nassella trichotoma

REGIONALLY PROHIBITED WEEDS INFORMATION SHEET

Plant biology

Type of weed:

Agricultural, environmental

Life form:

Perennial tussock-forming grass

Stems:

Flowering stems with many branches. Initially erect up to 95 cm 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 mm 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 mm 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 cm, 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 mm long and pale brown in colour turning purplish at maturity

The basal section of the seed is 1.2 mm long with white silky hairs and a rough upper section. The awn is 20 to 35 mm 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

Invasive plants cause significant detrimental impacts in Victoria. They are a serious threat to agricultural production, biodiversity and social values. The Department of Primary Industries (DPI) 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.

Regionally controlled weeds (RCW)

These weeds are usually widespread and are considered important in a particular region. Land owners 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.

The high-risk invasive plants declared as RPWs are among the highest threats to regional biosecurity at a catchment scale.

The purpose of this fact sheet is to:

- Provide basic identification information on a RPW
- A summary of best practice control measures, hygiene and prevention information
- To inform landholders of their regulatory responsibilities



Legislative status in Victoria

- **Regionally Prohibited** in the Mallee, North Central, Wimmera, Glenelg Hopkins, Goulburn Broken, North East and East Gippsland CMAs
- **Regionally Controlled** in the Corangamite, Port Phillip & Westernport and West Gippsland CMAs

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Impacts

Ecosystems and waterways

With its diffused and fibrous roots, Serrated Tussock has a long lifespan. Seedlings of this weed are 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.

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 quality.

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 1,000 mm. 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 up to 15 years and sometimes longer.

Growth Calendar

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

Prevention – what you can do

Prevention 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
- All vehicles and equipment should be thoroughly cleaned to remove any soil, seed or parts of the plant

before leaving infested areas and before being allowed to enter areas that are free of the weed

- Weed-free buffer zones should be maintained between infested and non-infested land

It is an offence to sell, transport or deposit onto land any material contaminated with noxious weeds.

Eradication – how you can help

DPI's aim is to eradicate regionally prohibited weeds from a region. 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

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. Application of a registered chemical is the preferred method of control.

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

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

Working together

A successful eradication program should consider a range of control techniques appropriate for addressing the growth stage and size of an infestation. The control techniques need to be integrated into a strategy to gain best long-term control.

Some control methods are only effective if used in combination with other control options as part of a long-term management program. If used in isolation, these methods may not provide the desired outcome of eradication of an infestation.

DPI may direct landowners to undertake specific control activities to ensure methods are used that are capable of destroying plants and preventing their spread.

Landowners must use the method or methods prescribed as directed by DPI. In most cases the landowner will be able to choose from a variety of options appropriate for use in their particular situation.

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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 the Information Note Ag1210 "Chemical Use in Victoria – What I can and can't do" or the Chemical Standards branch website: <http://www.dpi.vic.gov.au/chemicalstandards>

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>

Websites to visit:

<http://www.dpi.vic.gov.au/chemicalstandards>

<http://www.apvma.gov.au>

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 set seed
- Remain vigilant and always follow up the previous season's work



References

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