

MANAGING SERRATED TUSSOCK

TIPS FOR RESOWING TO PERENNIAL PASTURE

Serrated tussock (*Nassella trichotoma*) is a South American unpalatable tussock grass that readily invades both native and improved pastures. Serrated tussock (ST) has been known to reduce carrying capacity in excess of 50% and has extremely low nutritional value. All animals forced to graze serrated tussock will lose condition.

ST produces panicle/aerial seeds that are readily dispersed by wind and water and allow infestations to spread by up to 60km. One ST plant can produce up to 100,000 seeds.

Serrated Tussock can grow in a wide variety of climates with an annual rainfall of 450 to 1000mm. It is not limited by soil type or fertility but favours well drained areas and is tolerant of freezing.

Tasmania has approximately 1700 ha of ST infestation.

Keep your control options open and plan to destroy the Serrated Tussock lifecycle prior to resowing to perennial pasture.

BENEFITS OF RESOWING

Resowing provides opportunities to decrease the soil seedbank of ST whilst increasing the productivity of the pasture. The increase in ground cover reduces the likelihood of further ST seed germination.

KEY CONSIDERATIONS

When resowing a pasture previously infested with ST the following factors need to be considered:

1. **The limited number and mode of action of herbicides available.** Although glyphosate is registered for ST control, there is functionally only Group J chemicals that are registered for in-crop weed control, with a risk of legume damage.
2. **The long-lived and persistent ST seedbank in the soil** will allow for new ST germinations even in newly sown pasture. The seedbank needs to be managed prior to resowing.
3. **The need for grazing management, good farm hygiene and longer term whole farm planning.** Although ST is a relatively weak seedling, it can take advantage of seasonal conditions when productive pastures may be dormant. ST seed spreads readily by wind during summer time, when pastures may be grazed out and bare earth allows soil seed contact.

A. DEPLETING THE SOIL SEEDBANK

Given the persistent nature of the ST seed in the soil seedbank, producers should aim to encourage ST seed to germinate, and subsequently destroy the new seedlings prior to starting a pasture phase.

The following methods can be used in combination to stop further seed production from mature plants, encourage new seedlings to grow, as well as destroy seedlings prior to resowing:

- Spraytopping (e.g. Glyphosate)
- Chemical fallow (e.g. Glyphosate)
- Burning/Cultivation and/or conventional fallow

Over a period of only a few months, it is possible to destroy 3 lifecycles of ST seed prior to resowing

B. USE OF FODDER CROPS PRIOR TO PASTURE PHASE

As selective herbicide options for ST control in pasture are limited, a cropping phase can be used to:

- Provide further opportunity to kill seedlings at sowing, thus reducing the soil seedbank
- Control any plants that may germinate and grow in the crop
- Provide a feed source for livestock without the expense of perennial pasture seed.
- Allow an appreciation of how much ST is likely to germinate in the pasture phase without the expense of perennial pasture seed

EXAMPLE: SEEDBANK DEPLETION

Late spring: Spraytop to stop further seed input and graze to get remaining forage value from pasture

Early summer: Burn pasture to destroy seed close to soil surface, and encourage bare earth and seedling germination

Mid summer: Either chemically treat seedlings (Glyphosate) or cultivate to destroy seedlings

Early autumn: Follow up with pre sowing herbicide or cultivation to destroy any further seedlings.

The following methods can be used individually or in combination over a number of growing seasons to prepare for pasture resowing and interrupt the lifecycle of ST:

- Broadleaf crops (e.g. Brassica & Lucerne) – these provide a dense and rapid canopy that can not only smother out ST seedlings, but also provide ground cover over summer when ST seed is likely to be carried on the wind. These crops also allow the use of grass selective herbicides to clean up grasses/grassy weeds growing in the crop.

- Cereal/Winter oat crops – these are useful to outcompete any seedlings that occur after sowing and can be conserved as silage fodder prior to the production of viable ST seed.

EXAMPLE: USING FODDER CROPS

Summer-autumn: Seedbank depletion techniques as above

Spring: Sow brassica, graze with livestock. Use grass-selective herbicides if required to control grasses in crop over summer

Autumn: sow forage oat, graze or conserve as silage, monitor for ST

PERENNIAL PASTURE SOWING CONSIDERATIONS

SPECIES SELECTION

From experience managing ST in Victoria, competitive pastures with good ground cover all year round will provide the greatest resistance to ST seedlings.

To achieve this the soil conditions (e.g. pH, NPKS fertility, temperature) must be right for the pasture species selected that is best suited to the climatic zone.

The following are some observations of how different species are effective against ST in Victoria.

- Phalaris and Cocksfoot – good dense ground cover that can be maintained even in dry times if not overgrazed
- Perennial Rye grass – great for quick dense ground cover but quick to dry out under moisture stress/ not as responsive to summer rain and is less likely to stop ST seedlings
- Tall fescue – good complement to rye grasses but not easily established

TIMING OF SOWING

ST will readily germinate all year if the soil has adequate warmth and moisture – including on summer rain. For the pasture species above to be competitive against ST seedlings, they should ideally be sown in autumn to allow for strong seedling establishment and canopy closure prior to summer moisture stress. Seedbeds should be well prepared to allow good soil seed contact, dry sowing is also effective for pasture establishment if follow up rain occurs.

TREATING ST IN NEWLY SOWN PASTURE

There are very few options other than spot spraying or chipping to control ST within new pasture.

Flupropanate is a Group J herbicide that is registered to selectively control ST in mature pastures (8-18months old) and can provide residual control of ST seedlings for 2-5yrs. Grazing withholding periods of 4 months apply after boom spraying, and lactating stock should not be grazed in flupropanate treated areas.

Flupropanate has been shown to damage non target species (DPI Vic) including phalaris, cocksfoot, clovers and native species. The rate of non target damage and longevity of soil residual activity is proportional to the rate of application, soil type (light sand vs heavy clay), and rainfall conditions post spraying

Taskforce brand flupropanate claims:

- Flupropanate should not be used at low rates unless treating seedlings to avoid the incidence of resistance.
- Flupropanate can be used in mature Lucerne
- New pastures can be sown post flupropanate application after 100mm of rainfall

Always consult your local agronomic advisor and consider grazing withholding periods, especially the restriction of not grazing lactating stock on flupropanate treated areas.

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