MEAT & LIVESTOCK AUSTRALIA

TIPS & TOOLS

FEEDBASE & PASTURES

Managing Paterson's curse to boost pasture production

Key benefits

- **Seasonal grazing management tactics, tactical applications of herbicides, and use of biological control can control existing infestations or prevent new infestations of Paterson's curse.**

Paterson's curse is a major pasture weed throughout southern Australia, infesting an estimated 33 million hectares and costing about $30 million annually. While more common in high rainfall temperate areas, it grows over a wide area due to its tolerance of different climates and soils.

Tactics for target paddocks

Autumn

To compete with germinating Paterson's curse, maintain pastures above 1,500kg DM/ha (kilograms of total dry plant matter per hectare), and greater than 80% ground cover to reduce the potential for Paterson's curse germination. Apply fertiliser and possibly lime, according to soil tests, to increase the vigour of desirable perennial pasture species.

Moderate to heavy infestations, arable or semi-arable pastures: apply broadleaf herbicides (either lethal dose or spray-graze techniques*) in the first year to reduce the population. Spray Paterson's curse at the early rosette growth stage six to eight weeks after rain triggers the mass germination of seedlings. After spraying defer grazing to allow pasture competition to increase, then rotationally graze to retain at least 1,000kg DM/ha.

Low to moderate infestations or non-arable areas: ground cover is important, so defer grazing for three to four weeks after germination to achieve a pasture mass of 2,500kg DM/ha. This increases the competitiveness of improved pasture species and encourages erect growth of Paterson's curse rosettes. Then use short-term, high density grazing to eat the rosettes. Maintain pastures above 1,000kg DM/ha. Establish nursery sites for suitable biological control agents.

Winter

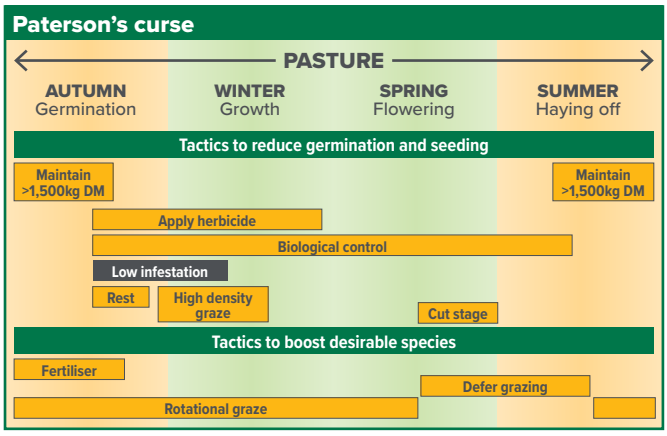
Rotationally graze to maintain pastures above 1,000kg DM/ha to preserve desirable pasture species.

Spring

Make silage or slash affected paddocks to reduce thistle seed heads and allow stock access to underlying pasture. Defer grazing for 10–12 weeks starting mid to late spring to encourage the growth and seed set of desirable perennial grasses.

Summer

Ground cover is required to reduce seedling establishment, so maintain pastures above 1,500kg DM/ha by rotational grazing to reduce seedling establishment in autumn.



Management tips

Controlling existing infestations

Reduce seeding with herbicides, grazing management and mechanical control methods, such as silage cuts. Reduce germination by maintaining a vigorous pasture greater than 1,500kg DM/ha and more than 80% ground cover, especially in autumn.

As a starting point, pastures need to contain a minimum percentage of desirable species (such as more than 20%

perennial grasses and 20% legume) to compete with and eventually replace the weed. Pasture improvement tactics such as rotational grazing, fertiliser and deferred grazing are required to achieve weed replacement with desirable species.

High density grazing for short periods, creating smaller paddocks or using temporary fencing to target problem areas can make grazing management more effective. Graze Paterson's curse with caution and not for extended periods where the Paterson's curse is the main plant species present. Grazing to reduce plant rosettes and reduce seed set can be achieved with short-term high density grazing in late autumn and spring.

Severely degraded pastures with few desirable species may need resowing.

Reducing new infestations

To reduce new infestations treat small infestations early, sow certified seed and avoid moving stock from infested to clean country. Buy fodder or grain that is uncontaminated with Paterson's curse or if feeding contaminated fodder keep it in a confined area where weeds can be localised and more easily treated. Quarantine bought-in livestock in a sacrifice paddock to reduce spread.

Biological control

Biocontrol is a tool for the long-term suppression of Paterson's curse, particularly on difficult to manage areas. Six insect species have been released.

Read the *Paterson's Curse Best Practice Manual* for more information on biological control.

The timing of other management treatments is critical to the survival of bio control agents. It is recommended to spray small rosette, spraying in late winter will improve the survival and effectiveness of agents. Nursery sites need to be managed for three to four years, especially in summer. Keep nursery sites free from cultivation and herbicides. Avoid dry matter accumulating and suppressing germination in nursery sites by light grazing over summer to encourage germination of Paterson's curse with light grazing to remove.

*Spray-grazing uses sub-lethal rates of selective herbicides to increase the palatability of broadleaf weeds and achieve a more erect growth habit. High stocking rates (50–150 DSE/ha) are then used for 5–7 days to achieve significant grazing damage to the weeds and minimal damage to desirable perennial grasses. Spray-grazing is undertaken in autumn or early winter when the mass germination of weed seedlings occurs. Withholding periods between spraying and grazing apply and are stated on the label.

Paterson's curse *(Echium plantagineum):*

- A prolific seeder (up to 30,000 seeds/m2).
- Seeds may remain viable in the soil for 10 years.
- Seeds may germinate anytime of the year when conditions are suitable.
- Plants can be poisonous to livestock.
- The plant is opportunistic and very competitive.
- Has an annual lifecycle, with germination mainly in autumn, remaining as rosettes over winter, producing flowering stems in spring and dying after seed set in summer. However, plants can germinate and be found throughout the year.
- Paterson's curse is spread by seed.
- The rough seed and bristly casing attaches to wool, clothing and animal fur. Long distance spread is through movement of livestock, fodder or machinery. Seeds can remain viable after being eaten by stock.

Toxicity

Paterson's curse contains alkaloids that can cause cumulative chronic liver damage and animal mortality, especially when substantial amounts are eaten over prolonged periods. Horses and pigs are highly susceptible; cattle moderately susceptible; and sheep and goats slightly susceptible.

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Further information

This *Tips & Tools* is part of a series on grazing management that provides best practice pasture management information. These Tips & Tools can be found at mla.com.au/weeds-hub.

A range of selective herbicides is registered for Paterson's curse. Consult your local rural supplier, agronomist or weeds officer. In many areas, landholders have a legal obligation to control Paterson's curse.

Biological control and agent distribution – NSW: Paul Sullivan 02 6763 1175; SA: 08 8303 9540; Vic: 03 9785 0111; WA: 08 9368 3758.

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