

tips & tools

NATURAL RESOURCE MANAGEMENT

LPI 680

Managing saffron thistle boosts pasture production

Saffron thistle is an annual weed of temperate southern Australia, occurring in overgrazed paddocks, poor pastures and neglected areas. Dense infestations restrict stock movement and the leaves and seed heads cause vegetable fault in wool and damage the mouth, eyes, skin and hide of livestock. Strong, competitive pastures restrict its germination and development.

Tactics for target paddocks

Autumn

Maintain weedy 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 saffron thistle to germinate. Apply fertiliser and possibly lime, according to soil tests to increase the vigour of desirable perennial pasture species.

For severely infested pastures apply broadleaf herbicides (either lethal dose or spray-graze techniques – see footnote*) at the small rosette stage of growth 6–8 weeks after climatic conditions trigger the mass germination of seedlings. Rotationally graze to maintain pastures above 1,000kg green DM/ha until spring.

For low to moderately infested pastures defer grazing (no stock) for 3–4 weeks after germination to achieve a pasture mass of 2,500kg green DM/ha. This improves the competitiveness of improved pasture species and encourages erect growth of saffron thistle rosettes. Then use short-term (1–7 days), high density grazing (high stock numbers) until saffron thistles are eaten, reducing numbers and seed-set potential. Maintain pastures above 1,000kg green DM/ha.

Winter

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

Spring

Delay grazing in early spring to allow erect growth and stem elongation. Use short-term, high-density grazing

Key benefits

- Seasonally management of pastures can reduce the impact of saffron thistle.
- Saffron thistle can be managed with a combination of herbicides, pasture improvement and grazing management.

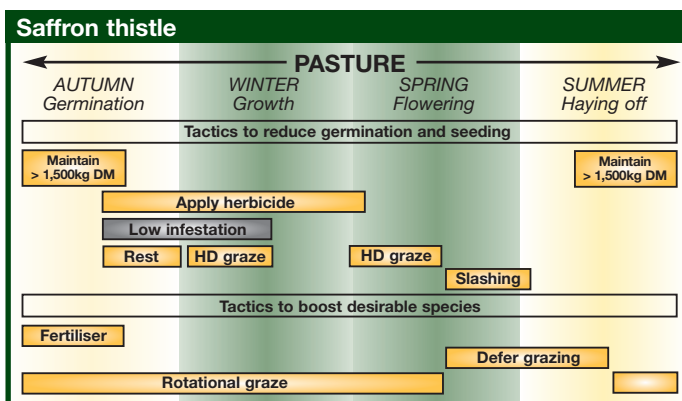
when saffron thistle plants begin to produce flower stems. Grazing kills some thistles and reduces seeding potential in others. This technique should be implemented cautiously to avoid stock damage of desirable perennial grasses.

Slash dense infestations just prior to flowering to reduce seed-set, and allow livestock better access to pasture. Some regrowth may occur.

Defer grazing for 10–12 weeks from mid to late spring to encourage the growth and seed-set of desirable perennial grasses.

Summer

Rotationally graze to maintain pastures above 1,500kg DM/ha, and more than 80% ground cover by autumn to reduce seedling establishment.



Management tips

Controlling existing infestations

Reduce seeding with herbicides, grazing management and physical control methods – slashing or silage. Reduce germination by maintaining a vigorous pasture greater than 1,500kg DM/ha and more than 80% groundcover, 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 light rotational grazing, fertiliser and deferred grazing are required to achieve weed replacement. Severely degraded pastures with few desirable species may need to be resown.

Grazing

Saffron thistle seedlings and rosettes are not very spiny and readily grazed by livestock, particularly if upright and accessible. Cell grazing, creating smaller paddocks or using temporary fencing to target specific problem areas can make grazing management of saffron thistle more effective.

Sheep are more effective than cattle at targeted grazing as they eat saffron thistle closer to the ground. Goats readily eat the flower heads, reducing seed production. Avoid overgrazing and exposing base ground as this encourages the germination and establishment of saffron thistles in ground cover gaps, especially in autumn.

Preventing new infestations

To prevent new infestations treat small infestations early, sow only certified seed, avoid moving stock from infested to clean country and buy uncontaminated fodder or grain.

If feeding contaminated fodder, keep to a confined area where weeds can be localised and more easily treated. Quarantine bought-in livestock in a sacrifice paddock to reduce weed spread.

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Further information

This *Tips & Tools* is part of a series on grazing management that provides best practice pasture management information. For a copy of the *Grazing Management Tips & Tools* series call MLA on 1800 675 717 or email publications@mla.com.au

A range of selective herbicides is registered for saffron thistle. Consult your local rural supplier, agronomist or weeds officer. In many areas, landholders have a legal obligation to control saffron thistle. Contact your local control authority for details on noxious status and legal obligations.

Plant facts

Saffron thistle (*Carthamus lanatus*) is an annual weed that tolerates a range of climatic and soil conditions, especially low nutrient soils that lack strong competition from other plants.

Livestock avoid plants once stems become rigid and dead plants remain standing for months. Spines cause eye and mouth injury to livestock and vegetable fault in wool. Dense patches restrict stock movement and access to feed.

Saffron thistle plants can produce 500–5,000 seeds, which germinate mostly in autumn and early winter, remaining as rosettes until spring when an erect stem develops, bearing sharp spines. Flowers are produced from November to December, with seeds ripening in January. Dispersal is by seed only, with most seed falling within a metre of the parent plant. The seed can also adhere to clothing, wool and skins and be transported by mud, machinery, water, fodder and grain. Many seeds remain dormant for the first year and can remain viable in the soil for up to eight years.

Establishment is more likely where soil is disturbed or where drought or overgrazing has weakened pasture. Saffron thistle is often sparse in higher rainfall years and abundant in drier years, due to weaker competition from desirable pasture plants.

Footnote: * 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.



Level 1, 165 Walker Street
North Sydney NSW 2060
Ph: 02 9463 9333
Fax: 02 9463 9393
www.mla.com.au

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