

tips & tools

NATURAL RESOURCE MANAGEMENT

LPI 682

Managing St John's wort-infested pastures to boost production

St John's wort is a serious perennial weed of pastures, catchments, forests and national parks in high rainfall areas of southern Australia. Livestock grazing the plant can suffer from photosensitisation (light sensitivity), resulting in low productivity and sometimes death. It causes vegetable fault in wool, excludes useful plants from pasture, and reduces property values.

Tactics

Autumn

Maintain pastures above 1,500kg DM/ha (kilograms of total dry plant matter per hectare) to reduce the germination of St John's wort. Defer grazing (no stock) until mid to late autumn to allow desirable pasture species to establish and crowd out the St John's wort seedlings.

Commencing late autumn, rotationally graze with a high stocking density to target St John's wort; apply fertiliser and lime according to soil tests and species present; and establish nursery sites for suitable biological control agents.

Winter

Use high density, rotational grazing to target St John's wort. The safest time to graze St John's wort is winter.

Spring

Remove stock before the weed flowers and avoid grazing in spring and summer. Resting pastures will encourage the build-up and seed set of desirable pasture species. Spray ungrazed infestations when in full-leaf and flowering. Then defer grazing until autumn.

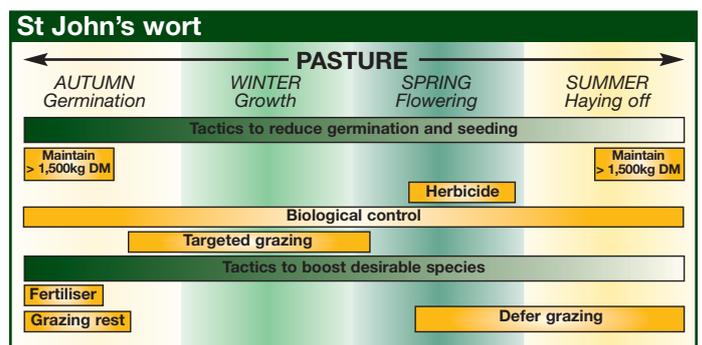
Establish nursery sites for suitable biological control agents. Distribute *Chrysolina* beetles and the St John's wort mite to new locations.

Summer

Defer grazing of all infested pastures in spring and summer while St John's wort is flowering and most poisonous to livestock.

Key benefits

- Seasonal management tactics can reduce the impact of St John's wort on pasture productivity.
- St John's wort can be managed with a combination of herbicides, safe grazing and biological control.



Management tips

Reduce germination by maintaining a vigorous and competitive pasture greater than 1,500kg DM/ha and more than 80% groundcover, especially in autumn. Reduce seed production using a combination of herbicides and grazing management tactics.

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. St John's wort is sensitive to competition from other plants, after being set back by herbicide, grazing and bio-control agents.

Selective herbicides can be used to remove St John's wort. It is critical that desirable species in the pasture are encouraged to replace the weed and reduce

re-infestation. Severely degraded pastures with few desirable species may need to be resown. New pastures should be rested for a year to allow the pasture to out-compete new weed seedlings.

Grazing management

Sheep, and sometimes goats, are used to control St John's wort in non-arable hill country. Carefully manage grazing to coincide with low hypericin toxin levels to reduce the risk of photosensitisation.

Determine if paddocks contain the narrow leaf or broad leaf type of St John's wort as the hypericin toxin production varies between them. Narrow leaf types have thin stems, leaves 7–9mm wide, are late flowering and up to 90cm high. Broadleaf types have thick stems, leaves 10–12mm wide, are early flowering, and up to 60cm high. Graze narrow leaf types: July 1–Sept 14; broadleaf types: May 1–Oct 14. De-stock infested paddocks to avoid poisoning once upright flower spikes reach 5–10cm in spring (the point where hypericin toxin levels rise), and remain cautious during spring and summer.

Graze with adult Merino wethers or dry ewes only, with at least four months wool growth. Never graze with shorn sheep, lambs or weaners, pregnant or lactating ewes. Use temporary fencing of heavily infested areas to achieve high density grazing. Ensure shade and water is available.

Remove stock immediately if symptoms of head shaking and restlessness, swelling of the eyes, ears and nostrils, skin irritation (biting, or rubbing until the skin becomes raw) and reddening and swelling of skin exposed to sunlight occurs. Seek veterinary advice.

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. If feeding contaminated fodder, keep to a confined area where weeds can be localised and more easily treated.

Biological control

Four insect species have been released for the biological control of St John's wort. Biological agents may be the primary method of control in non-arable and inaccessible areas. Nursery sites free of herbicides, tactical grazing and cultivation are needed to maintain populations. Biological control takes time to take effect and is not appropriate for higher priority control areas.

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Plant facts

St John's wort (*Hypericum perforatum*) seeds germinate autumn to spring and may remain viable in the soil for more than 12 years. This perennial plant quickly infests large areas, as it is opportunistic and very competitive. The plant is poisonous to livestock.

Existing plants have both non-flowering and flowering stems. Non-flowering stems grow from the plant base in autumn/winter and die in late spring. Flowering stems grow from the base each spring and die the following autumn. Large woody plants can produce up to 30 flowering stems in one season.

The plant spreads by seed and lateral roots. A well-developed plant can produce 15,000 to 30,000 seeds each year. The sticky seeds adhere to wool and animal fur and are carried in the digestive tract. This spreads it along roads and stock routes. Fire stimulates germination and reshooting from lateral roots.

Further information

This *Tips & Tools* is one of a series on grazing and pasture 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@mula.com.au

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

Contact your local control authority for details on noxious status and legal obligations.

Biological control distribution - NSW & ACT: NSW Agriculture 02 6391 3100, Victoria: 03 9785 0111.



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