

Major Weeds

Bathurst burr *Xanthium spinosum*

Bathurst burr is widely spread throughout Australia. It can reduce productivity as its sharp spines deter stock from grazing, the seedlings are toxic to sheep and the burrs can contaminate wool. The cost of control for Bathurst Burr is estimated to be over \$81.45 million per year.

AWI recently undertook a review of Bathurst Burr knowledge, research and development. The review found that:

- Bathurst burr has remained a major problem to the Australian wool industry for 150 years. This is partly due to incomplete knowledge regarding its biology and ecology
- A review of knowledge on Bathurst burr showed that we had a limited understanding of dormancy in the species and its demography
- Opportunities for potentially productive research on classical biocontrol in its native range in Argentina were also identified
- The review also found that there was little further potential for bioherbicide development for Bathurst burr in Australia due to commercial factors

A workshop to discuss Bathurst burr and research opportunities for its management was conducted and several scientists and graziers were consulted. This workshop highlighted the issues of the lack of economic data on its impact on production and the potential for perennial pastures to compete with Bathurst burr in some areas in addition to the above findings.

Lippia *Phyla canescens*

Lippia is estimated to cost the livestock grazing industries \$38 million per year in lost production in the Murray Darling Basin alone where it is estimated to cover 5.3 million ha.

It is estimated that Lippia causes an average reduction in stocking rate of 55%. In many grazing areas, especially in riparian areas, conventional control methods such as herbicides and cultivation are unable to be used to control Lippia.

In these areas biological control may offer an effective means of control of this weed. AWI co-funded research into the biological control of Lippia through CSIRO Entomology. CSIRO Entomology worked with the University of Bahia Blanco and the United States Department of Agriculture in South America to identify several potential biological control agents for use in Australia.

More details can be found here: [NSW](#) [Queensland](#)

Onopordum thistles *Onopordum spp.*

There are three Onopordum thistles which are weeds of pastures in Australia: Scotch thistle, Illyrian thistle and Stemless thistle. Together, these species cover over 1.6 million hectares. AWI and MLA funded the release of 6 biological control agents for Onopordum thistles:

- Rosette weevil (*Trichosirocalus briesei*)

- Petiole moth (*Eublemma amoena*)
- Crown fly (*Botanophila spinosa*)
- Stem-boring weevil (*Lixus cardui*)
- Seed weevil (*Larinus latus*)
- Seed fly (*Urophora terebrans*)

Approximately 1,000 releases of these species have been made in NSW, South Australia and Western Australia.

Management tips

Best management practice guidelines and case studies on managing serrated tussock:

- 3D Weed Management Guide – [Onopordum thistles](#)
- 3D Weed Management Case Studies – [Onopordum thistles](#)

Paterson's curse *Echium plantagineum*

Paterson's Curse infests approximately 33 million hectares across Australia. It is toxic to grazing animals as it contains pyrrolizidine alkaloids.

The Australian wool and meat industries funded the biological control of Paterson's curse program from 1988 until 2005. The project released 4 species of insect to attack Paterson's Curse. These are:

- The crown weevil (*Mogulones larvatus*)
- The root weevil (*Mogulones geographicus*)
- The flea beetle (*Longitarsus echii*)
- The pollen beetle (*Meligethes planiusculus*)

Approximately 3,000 releases of these insects have been made in NSW, Victoria, South Australia and Western Australia. A survey of graziers affected by Paterson's curse conducted in 2005 reported a 24% decrease in Paterson's curse due to biological control and a 12% increase in stock production.

Management tips

Best management practice guidelines and case studies on managing Paterson's curse:

- 3D Weed Management Guide – [Paterson's Curse](#)
- 3D Weed Management Case Studies – [Paterson's Curse](#)

Serrated tussock *Nassella trichotoma*

Serrated tussock covers more than 1 million ha across Australia and costs farmers \$40 million annually. The area infested with serrated tussock as 1-10% of the paddock is greater than 2.3 million ha.

Managing serrated tussock is especially difficult in rocky, steep and non-arable land. AWI funded a survey by Sydney University of farmers on their management of serrated tussock. The survey found that maintaining at least 1.5 tonnes of dry matter per hectare of competitive palatable perennial grasses and less than 10 per cent bare ground is the key practice for controlling serrated tussock.

AWI is currently funding a scoping study looking into the effect of the Rockhoppa® cultivator on serrated tussock.

The Rockhoppa® is a disc seeder, which is capable of operating in rocky terrain. The machine mows serrated tussock and sows pasture or crop seed in one pass. The Rockhoppa® has the potential to manage serrated tussock in three ways.

Firstly, farmers who have used the machinery on their land have noticed that when discs cut through a serrated tussock it can kill the plant.

Secondly, the Rockhoppa® can be used to sow competitive pasture species and crops which out-compete serrated tussock seedlings.

Thirdly, the Rockhoppa® is capable of mowing pasture and serrated tussock to produce mulch that may suppress serrated tussock.

Management tips

Best management practice guidelines and case studies on managing serrated tussock:

- 3D Weed Management Guide – [Serrated tussock](#)
- 3D Weed Management Case Studies – [Serrated tussock](#)