

LORD OF THE WEEDS



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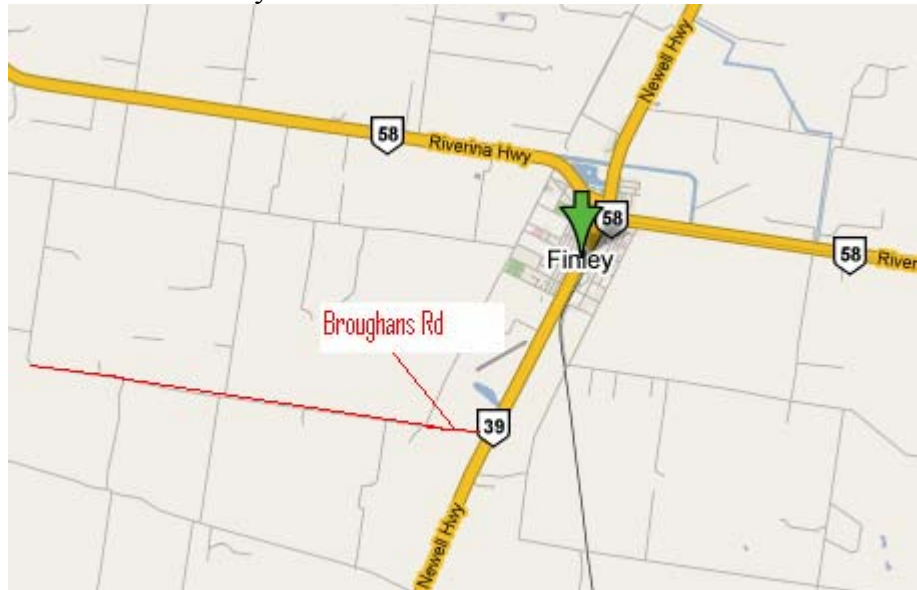
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Jordan Milburn

## Studied Area:

The area that I chose to study was a single paddock located on the side of Broughans Rd outside of Finley.



The paddock is used to feed and ‘home’ dairy cows and so is irrigated regularly allowing the plants in it to survive. Amongst the good plants (i.e. grass) is a large infestation of Bathurst Burrs which will cause many problems if not removed. Unfortunately the process of removing them right now would be rather difficult as the Bathurst Burrs have already gone into seed which means to remove them now would be pointless as the seeds would still survive in the soil and regrow.



Bathurst Burrs

Bathurst Burrs are a common weed in the area probably because of the many ways its seeds can be transported to new areas to infest (eg through the water in channels, on sheep and cows, etc) and the climate of the area which can easily kill off lesser hardy plants removing any competition for the Bathurst Burrs.

The area around Finley is flat and excellent for agricultural use. In other words it's a farming area and so weeds are a large problem. In this case the Bathurst Burrs will cause problems like:

- Lessening the quality and amount of any feed in the paddock by spreading and killing off any other plants.
- Causing problems to the cows eyes if they were to graze amongst the weeds and have the spins of the Bathurst Burrs scratch their faces.
- Possibly poisoning the cows if they tried eating them.
- If hay or silage was to be made from the grass on the paddock the Bathurst Burrs would also be 'harvested' and would lessen the quality of the hay or silage.



## Problems and Significance of the weed identified:

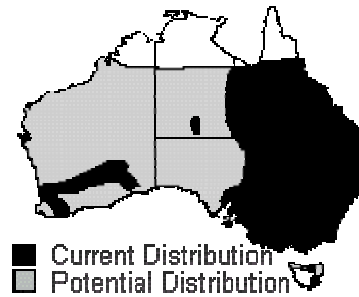
**Weed:** Bathurst Burr

**Scientific Name:** *Xanthium spinosum*

**Form:** Herb

**Family:** Asteraceae

**Origin:** South America



**Description:** The Bathurst Burr grows erect to around 1 metre high. It has many branches with large spines and small flowers at the ends. The Bathurst Burr reproduces by seed with the most germination occurring after rain or irrigation in late spring and summer. Older plants produce burrs in February while late germinating plants produce them when only a few weeks old. The plants usually die early in winter but mature plants may be found at any time of the year.

The stems are greenish yellow covered in fine short hairs; at the base of each leaf and stem node one, two or three pronged yellow spines can be found. These spines can be 1.5 to 2.5 cm long. The leaves can be up to 7cm long and are usually dark green and shiny with pale white veins. The flowers are creamy green, small and inconspicuous. They are wind pollinated and appear from February to July. Female flowers occur beneath the leaf axis, while male flowers are at the ends of the stems.



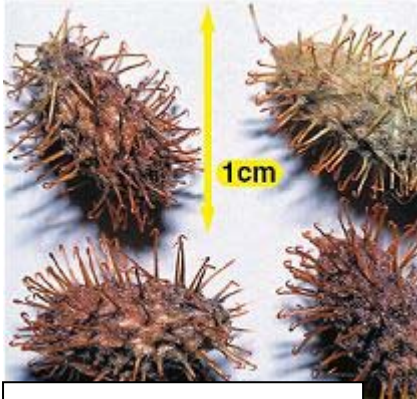
Bathurst Burrs produce small, straw-coloured, hairy burrs. They are 1 to 1.5 cm long and 4 to 5 mm wide and are covered in lots of yellow-orange hooked spines. When 'ripe' the burr is hardy and woody. These burrs each contain two seeds which are flat, brown or black and about 1cm long. These seeds may remain dormant in the soil for three years.

A Bathurst Burrs roots are branched taproot and can be over 3m deep, often with extensive lateral roots.

Bathurst Burrs are a major problem in pasture, crops and wasteland. It impedes shearing and can lessen the value of the wool. The seedlings contain hydroquinone which is poisonous to livestock, especially horses and pigs; and the spines can cause problems to the feet and eyes as well. Dense infestations of Bathurst Burrs can delay harvest and lessen the quality of hay and silage. Bathurst Burrs can also cause contact dermatitis in some humans.

Bathurst Burrs spread and reproduce through the burrs they produce. The burrs hooked spines allow them to attach themselves to the coats of animals and other fibrous material and be transported to new areas where they can release their cargo of seeds. The burrs also float allowing them to be transported over waterways, rivers, channels, etc. Burrs might also be harvested with other plants and transported in this way.

Because the Bathurst Burr's seeds may be transported so easily it is a fast spreading weed causing many problems especially in trying to control it. This process of reproducing also allows the weed to overtake other plants through vast numbers.



Bathurst Burrs' Burrs



A seedling



As you can see the Bathurst Burrs have gone into seed

### **Management strategies to control the weeds:**

Because of the problems Bathurst Burrs cause they need to be removed and removed properly.

The main weed removal strategies are:

**Biological Control:** Using the weeds natural enemy (insect or disease) to limit the growth of the weed. This strategy offers self sustaining and long lasting weed control.

**Spraying Herbicide:** Spraying weeds with herbicide is a quick and easy way to remove weed infestations. However it is important not to overuse herbicide as the weeds may become immune to it and the chemical residue might also cause problems.

**Using Beneficial Plants:** In other words plant plants that are more powerful than the weeds so that they will compete with the weeds limiting there growth.

**Using Animals:** Use animals to eat away the weeds but only if they are none toxic and will not harm the animals.

**Physical Removal:** Removing the weeds by hand or with tools is a hard but very effective method of weed removal. This strategy is best in small infestations.

**Controlled Burning:** Burn away the weeds: this is an excellent method for not only removing the weeds but also the seeds to prevent regrowth.

**Integrated Weed Management (IWM):** This is simply using a combination of many different strategies. This is the best strategy for any weed problem.

However for this particular weed problem the best strategies would probably be controlled burning or biological control.

For biological control there are two types of fungus, *Colletotrichum orbiculare* and *Puccinia xanthii*, which eat away Bathurst Burr, and also there is a Bathurst Burr seed fly, *Eurraresta bullans*, which was introduced from South America and effects large areas of burr but offer no long term control. If this strategy was to be used you would only have to introduce the fungus or fly to the area and then let them do the rest.

The method of simply burning the burrs is also an excellent strategy and would destroy not only all the matured plants but also the seeds present in the soil. This strategy would involve using a drip torch to create a fire ring around the weeds then carefully burning all the Bathurst Burrs away. It is important to create the fire ring and to control the fire very carefully as you should try and keep as much of the 'good' plants from burning as possible, this ensures that feed will still be left in the paddock for the cows.

## **Merits of the weed management strategies:**

In using the Biological control method you should know that the weeds will not be destroyed instantly and they may even not be affected by the seed fly or fungus. However this strategy does ensure that no other plants are harmed and, if you were to use a fungus, would ensure long lasting management of the Bathurst Burrs. Using this strategy has its ups and downs like any other strategy and for this particular weed problem is perhaps too slow to destroy the already seeding Bathurst Burrs. For this reason the controlled burning strategy is the better strategy out of the two.

In using the controlled burning strategy you could easily destroy the seeds of the Bathurst Burrs along with the Burrs themselves ensuring no or at least less regrowth. Burning the weeds is also quick and fairly easy to do, all it really requires is a drip torch and time. However on the down side of things burning the weeds would also destroy plants that are wanted such as grass that could be used to feed the cows. However in this case there is not much feed on the paddock and the feed that is there bad quality so it would not be a terrible lose if other plants were destroyed.

Using the controlled burning strategy is not long lasting and the weeds will eventually return as burrs are transported to the area through the water, on animals, etc. However if you were to physically remove any seedlings after burning you would ensure that the Bathurst Burrs do not become a problem again. So really this strategy is in fact a IWM strategy.

If the weeds are removed from the paddock better feed could be planted providing better production of the dairy cows and increasing the farmers' profit. The area would also look much better but this is not of major importance. Removing the weeds would also help prevent further spreading of the Bathurst Burrs which not only would help out the farmer by having less weeds to worry about but also help out the neighbouring farmers by preventing the weeds from spreading onto their paddocks as well as helping out the environment by allowing native plants to have less competition for survival and so thrive.



# Bibliography

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