

Long term control of blue heliotrope (*Heliotropium amplexicaule*) using Grastan® and tropical grasses.

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Introduction

Blue heliotrope (*Heliotropium amplexicaule*) is a problematic weed due to its drought tolerance, deep tap root, aggressive dispersal by seed and root buds and presence of toxic pyrrolizidine alkaloids. These alkaloids cause liver damage if continually ingested leading to death in cattle, horses, pigs, sheep and goats. It is declared noxious (W4) in 12 council areas of NSW.

Originally from South America it is now widespread in south-eastern Queensland and northern New South Wales. It is scattered throughout NSW and in South Australia around Adelaide (Parsons and Curthbertson 1992). Blue heliotrope is continuing to spread both in range and the size of local infestations. A small infestation can rapidly spread to cover an entire paddock if cultivated due to the presence of regenerative root buds on root fragments. Disturbed, degraded and overgrazed pastures on light soils appear to be the worst affected.

Although a number of herbicides are registered for blue heliotrope control, many don't kill the plant in one application and several follow up applications are necessary.

In 1992 trials were commenced to evaluate the use of Grastan® (tebuthrion) for blue heliotrope control. The results lead to the product being registered at 0.5 g/m² for blue heliotrope control on grazing land. This paper reports on the long term effectiveness of Grastan® in combination with a summer growing pasture as a strategy for controlling blue heliotrope.

Methods

The trial site is located at 'Clarefield', Binnaway on a sandy loam soil with an average blue heliotrope density of 14 mature plants/m². The paddock in which the trial is located had a history of topdressing with superphosphate and lime. The pasture consisted of naturalised grasses and clovers.

In December 1993 three rates of Grastan®, 0.5, 1 and 2 g/m², were applied. An unsprayed control was also included in the trial.

In 1995 Consol lovegrass and Premier digit grass were sown across all treatments. Grass establishment

initially was hampered by cattle grazing. The grasses established well after fencing the trial.

Observations three years later in February 1997, showed no regrowth of blue heliotrope under the three rates of Grastan®. Naturalised clovers had again re-established in all plots. Grasses were not affected by any treatment.

The trial site had been fenced but had remained open to grazing and therefore subject to the same management as the rest of the paddock.

Results

The trial site was reassessed in April 2006, 14 years after initial treatment occurred. Currently there is now one plant in the 0.5 g/m² treatment, no plants in the 1 g/m² treatment and two plants under the 2 g/m² treatment the nil plot still has 18.3 plants/m².

Most of the pasture in the paddock is dominated by Consol lovegrass, with only a few Premier digit grass plants remaining.

Conclusion

Grastan® is an effective herbicide to control blue heliotrope when used as part of an integrated weed management system. Integral to the system is the maintenance of competitive perennial based pastures through appropriate grazing management and fertiliser applications.

The summer growing pasture played a key role in preventing reinfestation. Strong competition from the perennial grasses prevented establishment of blue heliotrope seedlings.

The change in the balance of the two species of summer perennial grasses was significant. As Premier digit grass is the more palatable of the two species it is possible that it was selectively grazed out. Perhaps not including consol lovegrass in the pasture mix would have resulted in more digit plants surviving, or the digit may still have died resulting in less competition with blue heliotrope plants. What is known is that Consol lovegrass is a very competitive species and provides excellent competition to summer growing weeds. Including a suitable legume in the following autumn after sowing the grass is recommended.

An accurate method of spreading Grasslan® pellets over larger areas is required as overdosing/ high rates can lead to bare soil.

Reference

Parsons, W.T. and Cuthbertson, E.G. (2001). Noxious Weeds of Australia. Inkata Press, Melbourne, Sydney.

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