

CAN SERRATED TUSSOCK BE CONTROLLED IN NATIVE GRASSLANDS?

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Abstract Serrated tussock grass (*Nassella trichotoma*) is a native South American grass which invaded Australia causing major agricultural and conservation problems. Serrated tussock is an aggressive, perennial drought resistant grass with a deep root system (Campbell 1982) and is classified as a noxious weed in Victoria, New South Wales and Tasmania.

An investigation of serrated tussock control using three herbicides at three different concentrations, was conducted at two sites (St. Albans and Rockbank) in the vicinity of Melbourne, over a two year period. Herbicides were applied in late winter (August) at label strength using a knapsack.

The sites were pre-treated in early June by slashing and removing the upper foliage. Trials consisted of randomized 1.3 × 1.5 m plots with the following factorial design:

3 herbicides × 3 rates of spray × 5 replicates + 5 controls
(atrazine as Nutrazine) (50 sec)
(glyphosate as Roundup) (30 sec)
(tetrapion as Frenock) (10 sec)

Herbicides were applied for differing amounts of time (10, 30 and 50 sec) across each plot. These times were roughly equivalent (respectively) to: the agricultural rate; three times the agricultural rate; and five times the agricultural rate. The inner 1.0 × 1.0 m area of each plot was assessed monthly for the kill rate of serrated tussock as well as the number, type and species of new seedlings.

Results showed that Roundup, Nutrazine and Frenock when applied in late winter at the highest rates (50 sec) each achieved a total kill of serrated tussock.

Roundup was found to be the most effective herbicide, achieving a total kill rate of mature plants at each of the three application rates, within four weeks. Nutrazine applied at the middle (30 sec) and upper (50 sec) rates accomplished 100% kill rate after eight weeks. Frenock is slow acting. Plants subjected to the highest application rate (50 sec) showed some browning of foliage when assessed in November. Subsequent assessment of these plots has shown 100% kill rate of plants by Frenock at all rates of application (10, 30 and 50 sec).

Observations in December and January showed high numbers of native and exotic plants established in all plots. Nutrazine trials at the lowest level (10 sec) showed high numbers of exotic species however the 30 and 50 second trials showed fewer species and fewer numbers of new plants. Frenock at all rates (10, 30 and 50 sec) showed very few numbers of exotic and native species.

Roundup was considered to be the preferable herbicide for use because it achieved 100% kill rate in the shortest time possible with minimal subsequent weeds for a least four months, even at the lowest rate of application. Establishment of native and exotic species on Roundup treated plots after four months suggested that the herbicide did not have long term residuality.

ACKNOWLEDGMENTS

To Mandy Sherwell, Varne Taseski and Alistair Phillips.

REFERENCE

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