Broadstrike Herbicide spot spray for pasture weeds in hard-to-spray areas

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Summary Since registration in 1994, Broadstrike* Herbicide (800 g kg^{-1} flumetsulam) has achieved widespread use in legume based pastures for broadleaf weed control due to its efficacy and selectivity. It has become apparent that Broadstrike also has useful efficacy on pasture weeds that grow in rights-of-way or amenity areas. These situations may be impractical to treat with a traditional boomspray.

This research was undertaken to determine whether Broadstrike, applied as a high volume spotspray, would give effective control of key broadleaf weeds. Results have shown good efficacy on small-flowered mallow (*Malva parviflora* L.), wild radish (*Raphanus raphanistrum* L.), capeweed (*Arctotheca calendula* L.) and Paterson's curse (*Echium plantagineum* L.). Poor control was also observed for stinging nettle (*Urtica urens* L.) and horehound (*Marrubium vulgare* L.).

The proposed label rate will be Broadstrike Herbicide at 20 g 100 L^{-1} + Uptake (0.5% v/v) applied as a high volume spot spray to the point of runoff.

Keywords Broadstrike Herbicide, spot spray, small-flowered mallow, wild radish, capeweed, Paterson's curse, high volume spray.

INTRODUCTION

Broadstrike* is a selective herbicide option for weed management in legume pastures in southern Australia. At present, there are no highly selective herbicide options for control of key broadleaf pasture weeds in stock camps, around stockyards, amenity areas or right-of-way situations. Interest in this research was due to excellent herbicidal activity of Broadstrike on key weeds, limited herbicide registrations and selectivity to pasture species.

The aim of this work was to determine what concentration of Broadstrike applied as a spot-spray would give effective control of key broadleaf weeds and be selective to the pastures.

This trial work is preliminary and should not be used to make spray recommendations. The uses outlined in this report are not currently registered and Dow AgroSciences does not support them commercially.

MATERIALS AND METHODS

Broadstrike was applied as a spot spray to pasture weeds in tankmix with Uptake* Spraying Oil (727 g L^{-1} petroleum oil as an EC). In New South Wales and Western Australian trials, treatments were applied with Azo precision gas powered sprayers (or similar) operating at 200–300 kPa, via a single flat fan nozzle that delivered 700 L ha^{-1}. In Victorian and South Australian trials, high volume handguns with single adjustable hollow cone spray tips were used to apply 900 and 1560 L ha^{-1} respectively. In all trials spray mix was applied to the point of runoff.

A completely randomised trial design was used, with four replications of each treatment. Plots were 2 × 2 m (or larger) and separated by buffer areas to manage spray drift. Weed control was assessed at one and two months after application, using a percent control scale where 100 equals complete control or plant death.

The pasture weeds in these trials were wild radish, paterson's curse, capeweed, small-flowered mallow, horehound and stinging nettle.

RESULTS

Weed control was generally slow with Broadstrike. However, final control 8–10 weeks after application was commercially acceptable (>80%) on some weeds and as good as the commercial standard. Broadstrike was selective to pastures when applied as a spot-spray treatment.

No pasture injury Due to the nature of these weeds, the trials conducted for this report were in pastures that were predominately run down with a very small legume content. However, no damage was observed on the legumes or grasses present.

DISCUSSION

Broadstrike Herbicide gave commercially acceptable control (>80%) of Paterson's curse, small-flowered mallow, capeweed and wild radish at rates of 20 g product 100 L^{-1}.

In these trials, control of stinging nettle and horehound was poor (<50%) and will not be studied further.

These trials were treated using the spot spray application technique. Therefore the amount of product applied per hectare varies greatly, as determined by the size of the weed and area treated. For this reason, it may be difficult to register this use in a grazing situation due to herbicide residue considerations. This use may still be of value to the landholder with infested

Table 1. Percent visual control of various weeds at 8–10 weeks after application.

	Broadstrike rate g 100 L^{-1}				
Weed	2.5	5	10	20	LSD
Paterson's curse	44.58 c	57.5b c	71.67 ab	86.17 a	17.68
Small-flowered mallow	31.25 c	41.25 c	52.12 b	80.0 a	10.35
Capeweed	20.0 b	38.75 b	80.0 a	91.25 a	23.54
Stinging nettle	12.5 c	25.0 bc	30.0 b	50.0 a	13.13
Horehound	6.25 c	8.75 bc	15.0 b	25.0 a	2.26
Wild radish	78.75 b	90.0 a	91.25 a	96.75 a	11.12
95% CI					

roadways, non-grazed areas or for treating small areas within a paddock (i.e. spot spraying).

Trial work will be continuing in 2002 to support this data for Paterson's curse and small-flowered mallow.

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DISCLAIMER

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