

Verdict 520 controls *Erodium* spp. in pasture, but be careful of the species, rate and state

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Summary Long storksbill (*Erodium botrys* (Cav.) Bertol.), common storksbill (*Erodium cicutarium* (L.) L'Hér. ex Aiton) and musky storksbill (*Erodium moschatum* (L.) L'Hér. ex Aiton) are all common weeds of winter pastures in southern Australia.

Verdict*520 has the unique ability to selectively control these species in legume pastures. Until 1999, Dow AgroSciences believed that these species were equally susceptible to Verdict. However, subsequent research and commercial experience showed this to be incorrect. This may have been due to inaccurate identification of species.

This paper details trials that show long storksbill was more difficult to control than the other two species and that lower rates were more effective in Western Australia (WA).

Keywords Verdict 520, pasture, control, *Erodium* species, long storksbill, rate, state.

INTRODUCTION

Many farmers in southern Australia employ a pasture phase in their crop rotation where sheep and wool prices warrant this option, and for nitrogen replenishment and weed management. Use of selective herbicides in pasture, together with grazing and other management options, has meant each of the goals above could be achieved.

Since Verdict*104 (104 g L⁻¹ haloxyfop) was introduced, it became apparent that it not only gave selective control of key annual and perennial grasses, but also *Erodium* spp. in pasture. The introduction of Verdict* Herbicide (130 g L⁻¹ haloxyfop-R) meant lower rates could be used. Trial work up to 1999 showed that low rates could be used for all three *Erodium* species, regardless of state. However, subsequent research and commercial experience showed that this was not the case. Agronomists in New South Wales (NSW) had reported that 37.5–50 mL ha⁻¹ rates of Verdict 520 gave good control of common and musky storksbill but failed to control long storksbill.

In 1999, Dow AgroSciences reformulated the product to Verdict*520 (520 g L⁻¹ haloxyfop-R). With the new label, the opportunity was taken to lower the rate of Verdict 520 required for long storksbill control. This decision was based on efficacy data from past trials to 1999. The trials undertaken in 1999 sought to validate this label change.

The key question for this research was: are the current label rates of 37.5 and 50 mL ha⁻¹ + Uptake* Spraying Oil adequate for reliable control of long storksbill?

MATERIALS AND METHODS

In 1999, trials sites were selected in legume pastures that had heavy storksbill infestation. They were located at Dowerin and Quairading, WA, Hilltown, South Australia (SA), Murchison or Shepparton, Victoria (Vic.) and Wagga Wagga, New South Wales (NSW). Five trials were conducted on long storksbill and one on musky storksbill.

Treatments were applied with Azo precision gas powered small plot sprayers at 100 L ha⁻¹ spray volume via flat fan nozzles in a single pass. All treatments were applied with 0.5% v/v Uptake Spraying Oil. Trials were randomised complete block design with four replicates. Plots were 3 × 10 m or similar. Storksbill had 3–7 leaves and was 5–10 cm across at application time.

Assessment of pasture selectivity and weed control were done at two, four and eight weeks after application. A percent scale was used for visual assessment, where 100 equalled complete weed kill or pasture loss.

RESULTS AND DISCUSSION

Results of the 1999 trials show three things. Firstly, Verdict 520 was selective to legume pastures at all rates. Secondly, long storksbill control at labelled rates was better in WA, than in south eastern (SE) Australia. Thirdly, that long storksbill required higher rates for control than musky storksbill (based on information from one trial with similar rates applied).

Trials prior to 1999 Trial results to 1999 are summarised in Table 1 and show that the three species have been equally well controlled regardless of rate or state.

Trials in 1999 Table 2 shows the results from 1999 trials, where long storksbill required lower rates for effective control in WA. Musky storksbill was completely (100%) controlled at all rates tested (Table 3) and this shows that it was easier to control than long storksbill. (Musky and common storksbill control in

Table 1. Control (%) of three species of storksbill with Verdict 520 in southern Australia. Results of trials conducted prior to 1999 are presented.

Verdict 520 rate (mL ha ⁻¹)	Long storksbill	Common storksbill	Musky storksbill
37.5	88 (5) [8.92]	–	89 (4) [7.4]
50	96 (6) [3.69]	91 (5) [7]	96 (6) [4.49]
75	96 (7) [7.2]	94 (5) [4.7]	99 (2) [0.5]
100		100 (1)	–

() = No. of trials, [] = standard deviation.

trials prior to 1999 was excellent at 37.5 and 50 mL ha⁻¹).

The 1999 results together with commercial observations, led Dow AgroSciences to relabel Verdict 520 to reflect the higher rates required for long storksbill in SE Australia.

Training for Dow AgroSciences personnel and resellers was undertaken to improve species identification, particularly in the young vegetative stages when it is most difficult. Auld and Medd (1992) and Hussey *et al.* (1997) give good descriptions of the species and their leaf types, for vegetative identification.

CONCLUSIONS

Verdict 520 at 37.5–50 mL ha⁻¹ was required for long storksbill control in WA, but higher rates of 75–100 mL ha⁻¹ were required for similar control in SE Australia. Higher rates (75–100 mL ha⁻¹) of Verdict 520 were required for long storksbill than for musky storksbill (38–50 mL ha⁻¹). The new Verdict 520 label will reflect these differences.

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Table 2. Control (%) of long storksbill with Verdict 520 in 1999 trials by Verdict 520.

Rate (mL ha ⁻¹)	Dowerin WA	Quairading WA	Hilltown SA	Wagga NSW	Murchison Vic
UT	0 d	0 d	0 c	0 d	0 d
37.5	86 c	80 c	35 b	65 c	29 c
50	91 b	90 b	36 b	84 b	74 b
75	96 a	94 ab	50 b	94 b	95 a
100	99 a	96 a	73 a	97 a	100 a
LSD	4.08	4.88	15.85	11.19	17.16
SD	2.65	3.17	10.29	7.26	11.55
CV	3.55	4.41	26.55	10.68	21.57

Table 3. Control (%) of musky storksbill with Verdict 520 in a 1999 trial.

Rate (mL ha ⁻¹)	Shepparton Vic
UT	0 b
37.5	100 a
50	100 a
75	100 a
100	100 a
LSD	4.86
SD	3.27
CV	4.32

REFERENCES

- Auld, B.A. and Medd, R.W. (1992). 'Weeds – an illustrated botanical guide to the weeds of Australia', pp. 174-5. (Inkata Press, Melbourne).
- Hussey, G., Keighery, G., Cousens, R., Dodd, J. and Lloyd, S. (1997). 'Western Weeds', p. 166. (Plant Protection Society of Western Australia, Victoria Park).

Footnote

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