

Herbicides for Control of Sifton Bush (*Cassinia arcuata*)

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Introduction

Sifton bush (*Cassinia arcuata*) is a hardy native perennial evergreen shrub which has become a notable weed of disturbed areas such as graded roadsides, cleared forests, and ploughed but unsown paddocks in NSW. The weed was originally confined to infertile, acid stony soils, but in recent years it has spread to more fertile soils where pastures have been weakened by causes such as drought, overgrazing, fire, soil acidification, and reduced fertilizer application (McGowen *et al.*, 1990).

The area infested with this invasive, unpalatable, and competitive weed has increased from 93,000 ha in 1975 to 616,000 ha in 1988 (Campbell, 1990). A

Table 1: Herbicides, rates and application methods tested at Mullion Creek for control of mature sifton bush, 1988-1990.

HERBICIDE	APPLICATION METHOD		
	"SPOT GUN" (Chemical/m ²)	BOOM (100 L water/ha)	HIGH VOLUME (2500 L water/ha)
	Herbicide product rate		
VELPAR L (Hexazinone)	0.25; 0.5; 1.0; 2.0; 4.0 ml/m ²	2, 4 L/ha	3, 10 L/ha
ROUNDUP (Glyphosate)	Not used	2, 4 L/ha	26, 40 L/ha
GRAZON DS (Triclopyr + picloram)	Not used	Not used	10, 14 L/ha
LONTREL L (clopyralid)	Not used	Not used	5, 10 L/ha
DATE APPLIED	30.12.88	29.03.89	7.12.89 & 22.03.90
DATE ASSESSED	15.09.89	14.02.90	29.11.90
SIFTON BUSH/m ² (prior to spraying)	8.6	19.5	29

spray but were even more costly than Roundup^(R).

Velpar L^(R) applied through a spot gun applicator was as effective as high volume spraying with a 90% kill obtained with a 0.5 ml/m² rate.

Conclusion

Campbell (1990) showed that Roundup^(R) effectively controlled *C. arcuata* seedlings at lower cost per hectare than Velpar L^(R). However, results of this study indicate that Velpar L^(R) is a more effective herbicide for killing mature sifton bush.

A suitable strategy for sifton bush control on non-arable land where terrain permits may include initial boom application of Velpar L^(R) at 2 L/ha with a clean-up treatment using Velpar L^(R) at 0.5 ml/m² applied with a spot gun 12 months later to kill surviving plants. As Velpar L^(R) is not registered at present for *C. arcuata* control in NSW, individual farmers must obtain a pesticide order to authorise Velpar L^(R) use. Roundup^(R) and Grazon DS^(R) have current pesticide orders permitting their use on sifton bush (McGowen *et al.*, 1990).

recent survey showed major concentrations of (10,000 ha) of sifton bush in the shires of Cabonne, Evans, Boorowa, Merriwa and Narrabri (Campbell, 1990). This rapid increase coupled with the declaration of *C. arcuata* as a noxious weed in 10 shires (Campbell *et al.*, 1990) highlighted the need to find an effective method to control sifton bush.

Campbell (1990) reported that sifton bush can be controlled easily on arable land with a combination of ploughing, spraying seedlings (less than 4 months old) with glyphosate, sowing faster growing improved pasture species, and applying adequate fertilizer. On non-arable land, however, control is difficult because suitable herbicides are needed to economically kill mature plants.

Control Methods for Mature Sifton Bush

A series of studies was commenced at Mullion Creek near Orange in 1988 to test the effectiveness of a range of herbicides, rates and application methods (Table 1) for control of established sifton bush 20 to 60 cm high.

Sifton bush density was measured in the spring or summer following treatment and percent kill calculated relative to pre-treatment density.

Results

For large area control, Velpar L^(R) applied at 2L/ha by boom spray killed 90% of *C. arcuata* plants at a cost of \$57/ha, whereas Roundup^(R) at 4 L/ha was ineffective, killing only 50% of plants with most mature bushes surviving the \$47/ha treatment.

Mature plants were killed by high volume application of Roundup^(R) but the 26 L/ha rate cost twice as much as high volume applied Velpar L (5 L/ha) for equivalent control. Grazon DS^(R) and autumn applied Lontrel L^(R) also killed sifton bush when used as a high volume

While this spraying program will effectively control sifton bush, its economic viability will be determined by increases in livestock production obtained following removal of heavy shrub infestations, and the post-eradication management of renovated paddocks. In the Orange area, removal of heavy infestations and establishment of pastures with adequate fertilizer should increase carrying capacity from 0.6 to 5 dry sheep equivalents/ha (Campbell, 1990)

References

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