

Doublegee (*Emex australis*) in the great southern areas of Western Australia

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Abstract

Doublegee is a prickly weed of crops, pastures, orchards, vineyards, horticultural and industrial areas of the great southern areas of Western Australia.

Distribution

It occurs predominantly on the fertile loamy soils and sand over ironstone soils. It rarely forms heavy infestations on the deeper sands.

Significance

Doublegee could be classed as a minor weed of crops and pastures and a significant weed of horticulture in the great southern area of Western Australia.

Control

In cereals it is usually controlled by dicamba or chlorsulfuron. In grain legumes it is usually controlled by simazine,

cyanazine or diuron. In orchards and vineyards glyphosate and paraquat are usually used. In industrial areas and for eradicating small areas a combination of Tordon® and dicamba is common. In clover based pastures Broadstrike® is providing high levels of control especially when applied early in the season. Late germinations can be a problem that may require a second application. Broadstrike is cheaper and less damaging than the older treatments of Tribunil®, 2,4-DB and diuron + 2,4-DB. Increased sowing of perennial pasture species is also leading to a natural decline in the effects of doublegee in pasture. In most situations, except lupins, the new crop and horticultural species, there are now adequate techniques for controlling doublegee.

Emex australis in northern agricultural regions of Western Australia

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Abstract

Emex australis is a major problem in the northern region of Western Australia's wheatbelt, particularly when a legume phase is included in rotations. The weed's staggered germination and lack of registered herbicides for all situations exacerbate the problem. Examples of herbicides and associated costs for lupins, field peas, faba beans, chickpeas and wheat are given.

Introduction

Emex australis is a one of the three major broadleaf weeds in the northern region and the majority of growers rely heavily on herbicides for control of *E. australis* in cropping rotations. My aim is to impress on you the extent of the problem of *E. australis* (doublegees in Western Australia) and the related cost of control to growers in the northern region of Western Australia's wheatbelt.

The region

Northern region extends from Northam up to Ajana. Rainfall ranges from 600 mm on the coast through to less than 325 mm

inland. Soils in the region range from deep yellow sands, acid wodgill sands and leached white sands, through to duplex soils, red loamy sands. The season is best described as short—cropping begins in late April and ceases by late June, and harvest begins in late October, finishing by late December—depending on the season.

Doublegees are a problem throughout a large part of the region, particularly when a legume phase is included in the rotations. The warmer conditions in the northern region are conducive to its development.

Influence of crop rotations

In the region, legumes are an important component of continuous cropping rotations. The cereal/lupin rotation has been developed for sandplain soils in the last 20 years, with the development of pulses in rotation with cereals on the heavier soils in the last five years. However, it is the difficulty in controlling *Emex australis* in legumes that has led to its importance as a major weed in the region.

Control of *Emex australis* is reliant on pre-seeding or post-seeding herbicides

however there are no options registered for post-emergence *Emex australis* control in legumes. The only option growers have for control in the crop are suppression or unregistered salvage options. This problem is exacerbated with the staggered germination of doublegees.

Canola is being developed in the region and at present, there are no registered herbicides to control *Emex australis*. A promising development in the control of *Emex australis* is the triazine resistant canola, suited to the lower parts of the region. Shorter season varieties suitable to the upper part of the region are being developed and should be released in 1996.

The legume component of pastures varies and both low stocking rates and reduced herbicide efficacy ensure *Emex australis* populations explode in the pasture/cereal rotations.

Cost

Competition from *Emex australis* with the crop will reduce yields although competition curves have not been defined to my knowledge at present. Contamination with the grain can be easily removed, but at a cost of between \$12–18 per tonne of grain. Herbicide control can be costly, particularly if post-emergence control is required (Table 1). About 30% of cases can control doublegees with just one spray application but with 50% of cases they need to use a two pass operation, a cost of up to \$32.

It is very important for growers to aim for excellent control in the wheat phase due to the difficulty of control in legumes. In addition, *Emex australis* can be easily moved within a paddock; and from paddock to paddock on tyres.

Conclusion

Emex australis is a pain, both physically and economically and a large proportion of growers in the northern region have to actively undertake control.

Table 1. Herbicides used to control *Emex australis*.

	Pre-seeding	Pre-emergence	Post-emergence
Lupins	simazine, diuron, atrazine	diuron	simazine, metosulam
Field peas	Bladex®	Spinnaker®	Bladex
Faba beans		Spinnaker	
Chickpeas	nothing		
Wheat	chlorsulfuron Logran®		metsulfuron methyl Jaguar®, Terbutryne® diuron + 2,4 D amine, diuron+ MCPA
Cost ha ⁻¹ (approx.)	\$7–18	\$13–21	\$6–15