

Herbicide tolerance of trees at Wongan Hills

Wongan Hills, M2

Staff: Mike Clarke Revegetation Officer, Geraldton and Steve Bell Senior Technical Officer, Wongan Hills.

Trial location: Wongan Hills Research Station

Summary

Damage was only minor for all the herbicide treatments except for glyphosate which caused severe damage, particularly to the eucalypts. Damage to the trees was restricted to the end centimetre or two of growing tip, however the glyphosate treatment resulted in the death of up to eight centimetres. Melaleucas and casuarinas were the most tolerant of all the tree species.

Background and Aim.

For the past two years a range of herbicides have been screened near Mingenew for safe use in farm trees. This trial examines some of the promising herbicides from that work and, in some treatments, combines grass selectives with broadleaf herbicides. This will increase our understanding of the interactions between herbicides and their affects on certain trees and shrubs. The trees had been planted for one year.

Trial Details.

Plot size and replication	6 metres x 30metres – 4 replicates
Soil type	Sand over clay
Planting date	15/06/99
Spraying date	26/07/00
Species used	<ol style="list-style-type: none"> 1. York gum. (<i>Eucalyptus loxophleba</i>) 2. River redgum (<i>Eucalyptus camaldulensis</i>) 3. Swamp sheoak (<i>Casuarina obesa</i>) 4. Broombush (<i>Melaleuca uncinata</i>) 5. Salmon gum (<i>Eucalyptus salmonophloia</i>) 6. Golden wreath wattle (<i>Acacia saligna</i>) 7. Oil Mallee (<i>Eucalyptus horistes</i>)
Herbicide treatments	<ol style="list-style-type: none"> 1. control 2. Glyphosate 450 @ 1 litre/ha 3. Broadstrike® 25g/ha + Verdict® 520 @ 100ml/ha + Select® 250ml/ha + 1% uptake 4. Eclipse® 10g/ha + Verdict 520® @ 100ml/ha + Select® 250ml/ha + 1% 5. Logran @ 15g/ha + 1% uptake
Spray application rate	195 litres/hectare
Assessment dates	25/08/00, 19/09/00, 16/11/00

Results.

Weed suppression ratings. Expressed as percentage controlled, 8 weeks after spraying.

Weed type	Control	Glyphosate	Broadstrike® + Verdict® + Select®	Eclipse® + Verdict® + Select®	Logran®
Radish	0	74	94	93	94
Ryegrass	0	80	93	93	6
Bromegrass	0	80	93	93	6
Capeweed	0	91	88	90	74
Clover	0	100	5	99	100

The following table shows the survival rates (percentage) of seedlings sixteen weeks after spraying.

Treatment	Yorkgum	River gum	Sheoak	Broombush	Salmon gum	Acacia saligna	Oil Mallee
Control	96.9	100	100	100	100	100	100
Glyphosate	95	95	100	100	88	100	97
Broadstrike® + grass selectives	100	100	100	100	94	100	100
Eclipse® + grass selectives	100	100	100	100	100	100	100
Logran	100	100	100	100	100	100	100

Comments.

The same glyphosate treatment at a similar trial near Piawaning produced only minor damage to trees. This was probably due to the lower water volume used during application there (87 litres/ha) compared to the Wongan site where 195 litres/ha was used.

Caution! This was designed to test the tolerance of various tree species to herbicides used in agriculture. As the herbicides have no registration for use in these trees, this trial cannot endorse these products for that use.