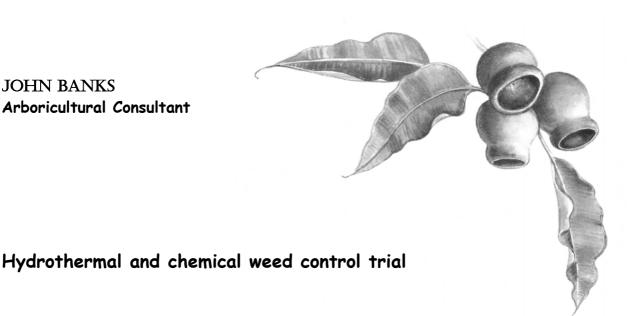
JOHN BANKS Arboricultural Consultant



Aim: To compare the effectiveness of various weed control treatments and their costs for the City of Joondalup.

Target area: Roadside curb and footpath only.

Weed control treatments: 1) Hydrothermal treatment applied 3 times in one year (May, August and November). 2) Hydrothermal applied at 1 time in the year (May) + glyphosate applied in August, 3) glyphosate only, applied in May and August, 4) glyphosate + stomp applied in May only and 5) unsprayed / untreated control (see table for further explination).

Treatment	May	August	November
1) Hydrothermal	√	√	~
2) Hydrothermal	√		
+ Glyphoate		✓	
3) Glyphosate	✓	✓	
4) Glyphosate	√		
+ Stomp			
5) Unsprayed			
control			

Treatment replicates:

Within street replication: Each treatment would occur 4 times within a street over a distance of 1 km made up of 4 equal parts of 250m. In other words each treatment will occur over a total length of 1 km in each street, requiring 5 km of street frontage for all treatments.

Between street replication: The above will occur in 4 separate streets which are also located in 4 different suburbs.

Note: replication (duplicates) is required to make valid statistical comparisons.

Steps and time lines involved:

- 1) Select 4 suitable streets, each with at least 5 km of street frontage and with a reasonable representation of different weed types.
- 2) Mark out the areas of the street which will be subject to each of the 5 treatment.
- 3) Count or score the weeds in each of the selected treatment areas.
- 4) Apply weed control treatments after first autumn germination (e.g. May), and record conditions, rates applied, pressures and temperatures.
- 5) In August, count or score weed populations and apply second round of treatments. For example the hydrothermal treatment, hydrothermal + glyphosate treatment and glyphosate treatment all have second application times as part of their treatment.
- 6) In early November, count or score weed populations and apply the third round of treatments (Hydrothermal only).
- 7) In February 2009, complete the last weed count or score.
- 8) Statistically analyse results.

9) Complete the report on effectiveness of weed control and associated costs.

Indicative design for explanatory purposes: Note each treatment occurs 4 times in each of 4 streets.

Cook Av.	Timberlane Dr.	Naturaliste Bvd.	Candlewood Bvd.
Hillarys	Woodvale	Iluka	Currambine
Treatment	Treatment	Treatment	Treatment
Hyd - 1.1	Hyd - 1.1	Hyd - 1.1	Hyd - 1.1
Hyd + Gly - 2.1			
<i>G</i> ly - 3.1	<i>G</i> ly - 3.1	<i>G</i> ly - 3.1	Gly - 3.1
Gly + Sto - 4.1			
Control - 5.1	Control - 5.1	Control - 5.1	Control - 5.1
Hyd - 1.2	Hyd - 1.2	Hyd - 1.2	Hyd - 1.2
Hyd + Gly - 2.2			
Gly - 3.2	Gly - 3.2	<i>G</i> ly - 3.2	<i>G</i> ly - 3.2
Gly + Sto - 4.2			
Control - 5.2	Control - 5.2	Control - 5.2	Control - 5.2
Hyd - 1.3	Hyd - 1.3	Hyd - 1.3	Hyd - 1.3
Hyd + Gly - 2.3			
<i>G</i> ly - 3.3			
Gly + Sto - 4.3			
Control - 5.3	Control - 5.3	Control - 5.3	Control - 5.3
Hyd - 1.4	Hyd - 1.4	Hyd - 1.4	Hyd - 1.4
Hyd + Gly - 2.4			
Gly - 3.4	<i>G</i> ly - 3.4	<i>G</i> ly - 3.4	<i>G</i> ly - 3.4
Gly + Sto - 4.4			
Control - 5.4	Control - 5.4	Control - 5.4	Control - 5.4

Note: Each of the cells above is a 250 m strip (suggested length only), hence hydrothermal 1.1 in Cook Av. is a 250 m strip of footpath and road side curb, and in the same street 1.2, 1.3 and 1.4 is the same hydrothermal treatment each 250 m in length.

John Banks and Graeme Sandral

11th Jan 2008