

Hydrocell trial - Evaluation 1 conducted 4/11/05

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Twelve advanced *Angophora costata* trees were planted at the intersection of Sunningdale Ave and Lancefield Rd in Sunbury (**Melways Ref Map** 383 B4). Nine of the trees were treated with Hydrocell at the time of planting early August 2005 and three were not treated (See appendix one for details of amounts). An investigation to expose the root balls to see if the Hydrocell had any effect was undertaken in November 2005. This involved scraping back the mulch to expose the soil berm and then digging a hole adjacent to the rootball to see if any new root growth had occurred. We also inspected the soil conditions to determine any difference between the treated and non-treated backfills.

The trees were planted into the local heavy basaltic clay soils and the site is very exposed with strong westerly winds drying out the soil. The rainfall is very low approximately 400mm per year with very high evaporation. (See appendix two for details). The trees were placed on a fortnightly watering program to assist in establishment, this will occur for two years.

The first visual observation was that the treated trees all had new shoot growth in the upper canopy and the untreated did not. Upon excavation the untreated trees had no visible root growth and the soil was dry. Apparently the tree had been watered two weeks earlier.

The surrounding soil of the treated trees was moist with new, large white roots coming from the root balls. It appears that the Hydrocell treated trees are not drought stressed and therefore able to put on new growth. These trees will be checked in November 2006 to see how effective the Hydrocell has been. Early indications from this survey look good. Initially all the trees were measured and will be re-measured annually in June.



Figure 1 – Digging next to a treated tree – Note the white hydrocell spread amongst the backfill and the moist look of the soil compared to the surrounding soil.



Figure 2 - Hole was dug beside the rootball in the treated soil zone to expose the edge of the trees rootball.



Figure 3 – The new white root hairs have grown out from the rootball into the treated soil. There were numerous roots and plenty of moisture in the soil.



Figure 4 – Note the new growth from the top of the tree. This only appeared with the treated trees.



Figure 5 – No new roots and very dry soil in the untreated trees.



Figure 6 – Untreated tree, dry soil and no new shoot growth.



Figure 7 – Comparison of treated tree on the left-hand side and untreated trees on the right. Early indications show the benefits of adding hydrocell at planting time. More data on growth rates will be posted in the next 8 months, but the early indications are good.

Conclusion

The difference in the two trees was remarkable. The backfill soil of treated trees was moist and wet. The backfill soil of the untreated trees was dry with no new root growth evident. This trial set up in June 2005 will be monitored annually and information will be posted on the website for the Basalt Plains Urban Forest Group at <http://au.groups.yahoo.com/group/BPUFG/>

If you would like to discuss this trial please feel free to contact Jason Summers – Open Space Coordinator Hume City Council on (03) 92052387

Appendix One - Instructions for addition of Hydro cell to Trees.

HYDROCELL TUBESTOCK & TREE PLANTING GUIDE

The inclusion of Hydrocell flakes into the plant hole for “tree” planting offers the following benefits:

- Improvement in moisture retention in the rootzone. (60% by volume)
- Improvement in aeration. (37% air by volume at saturation)
- Improved capillary water movement.
- Reduction in compaction.
- Increase in pore size.
- Improvement in re-saturation speed for hand watering.
- Increase in available nutrients in the rootzone.
- HYDROCELL is non-hydrophobic to improve soil re-wetting

Procedure for incorporating Hydrocell flakes

- Plant hole is dug.
- Loose soil is replaced back in the hole to a depth to allow the rootball to be positioned with the crown at the correct height.
- **Always wet the Hydrocell before applying to aid mixing, prevent loss to wind.**
- Before placing the rootball for backfilling, place half of the Hydrocell flakes as a layer over the loose soil at the bottom of the hole.
- Place the root ball into position and place the slotted watering tube in the hole (if used).
- Begin the backfill, mixing the balance of the Hydrocell flakes into the soil next to the rootball all the way to the surface.
- Compact as per normal.

Volume of Hydrocell flakes per plant hole

Root ball Size		Litres of Hydrocell
Tubestock		200 ml
15cm Pots	2 l	8 l
20cm Pots	4 l	10 l
30cm Pots	20 l	36 l
40cm Pots	33 l	50 l
50cm Pots	45 l	63 l
60cm Pots	75 l	72 l

Disclaimer: This information is supplied in good faith and trials are recommended by the user to test the suitability of the procedure in the soil types that exist within the user's geographical region. No liability will be accepted by Fytogreen Australia or it's representatives as to the final performance based on this information. 14/8/03

Appendix Two - Local Rainfall & Evaporation Data & Rainfall days

