

# BiAgra Trial

## Introduction

### Objectives

1. To assess the turf response to varying amounts and frequency of irrigation
2. To evaluate the effectiveness of BiAgra in improving the efficiency of water use

## Methodology

The trial was set up on the 17<sup>th</sup> February 2011 at David Vincent Reserve in Kensington. The irrigation at the trial site was turned off a couple of weeks prior to the commencement of the trial.



The following treatments were used:

Treatment	BiAgra (50 litres per ha)	Frequency of irrigation events	Amount of irrigation per irrigation event (mm)	Total amount of irrigation per week (mm)
1	+/-	4 days per week	10	40
2	+/-	4 days per week	5	20
3	+/-	Once per week	20	20
4	+/-	Once per fortnight	20	10
5	+/-	Once per week	10	10

- The plots were one square metre
- The BiAgra was applied with a water can at the dilution of 5ml in 9 litres of water per square metre
- The plots were irrigated by hand with a watering can

## Results

The trial was assessed on the 25<sup>th</sup> March 2011 (5 weeks after commencement). Over the period of the trial there was no rainfall and the average daily Pan evaporation was 9.1mm.

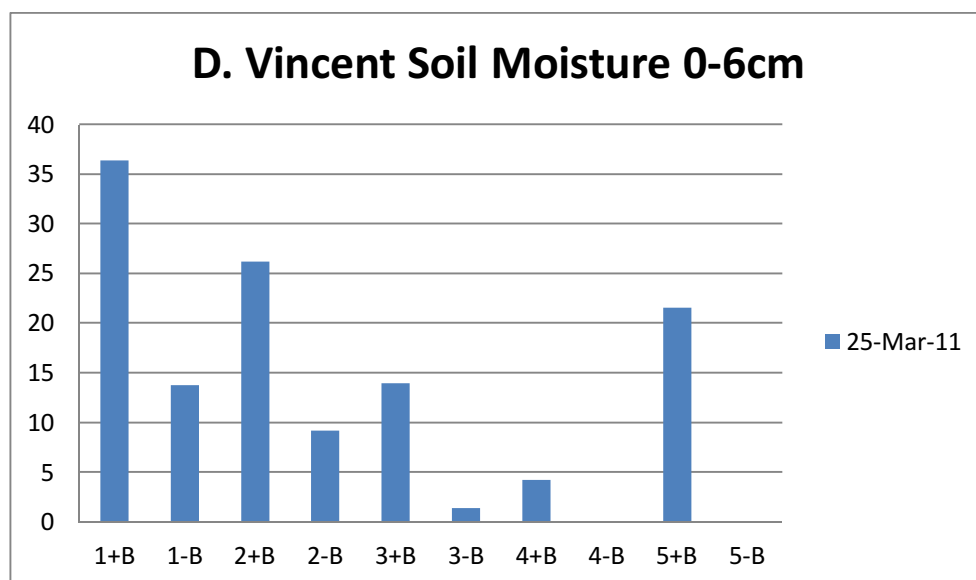
The irrigation treatments equated to the following percentages of Pan Evaporation

40mm per week	20mm per week	10mm per week
62%	31%	15%

## Soil Moisture Readings

25-Mar-11

Treatment	Soil Moisture Content 0-6cm					Mean
1+B	37	35	39	35	36	<b>36.4</b>
1-B	9	22	5	27	6	<b>13.8</b>
2+B	25	30	21	30	25	<b>26.2</b>
2-B	18	4	15	6	3	<b>9.2</b>
3+B	16	14	12	20	8	<b>14</b>
3-B	0	1	0	6	0	<b>1.4</b>
4+B	2	6	3	9	1	<b>4.2</b>
4-B	0	0	0	0	0	<b>0</b>
5+B	21	23	24	20	20	<b>21.6</b>
5-B	0	0	0	0	0	<b>0</b>





## Discussion



To achieve high levels of water efficiency in turf management under the unique conditions prevailing in the Perth region, the following fundamentals need to be achieved:

1. The irrigation system needs to be able to deliver water relatively uniformly to the surface of the turf even under moderate to high wind conditions.
2. The irrigation manager must use a scheduling method that delivers water to the surface of the turf at the required interval and amount.
3. Regardless of the uniformity of application and the scheduling, the water must be able to uniformly penetrate the thatch and mat layer and fully wet the required depth of root zone desired.



This trial has found that untreated turf watered uniformly with 4 applications of 10mm per week (total of 40mm per week) has not performed any better than turf treated with BiAgra that only received half the amount of water (4 applications of 5mm per week i.e. 20mm per week). In addition, at the end of the trial period the turf treated with BiAgra, and only receiving half the amount of water, had a higher average soil moisture content and uniformity in the surface 60mm of the root zone.

	40mm per week Minus BiAgra	20mm per week 4 x 5mm Plus BiAgra
		
Average soil moisture (surface 60mm)	13.8%	26.2%
Uniformity of soil moisture	38%	88%

This trial has also found that the turf treated with BiAgra, receiving 20mm per week, performed better when the watering was split into 4 applications of 5mm rather than a single application of 20mm per week. The differences in performance were very evident near the end of the drying cycle for the 1 x 20mm treatment, when the turf became quite wilted and stressed.

	20mm per week 1 x 20 plus BiAgra	20mm per week 4 x 5 plus BiAgra
		
Average soil moisture (surface 60mm)	14.0%	26.2%

Also, turf treated with BiAgra performed significantly better than untreated turf when both were watered once per week with 20mm.

	20mm per week 1 x 20 plus BiAgra	20mm per week 1 x 20 minus BiAgra
		
Average soil moisture (surface 60mm)	14.0%	1.4%

## Treatment 1

40mm per week (4 applications of 10mm each week)

Equivalent to 62% Epan



## Treatment 2

20mm per week (4 applications of 5mm each week)

Equivalent to 31% Epan



### Treatment 3

20mm per week (1 application of 20mm each week)

Equivalent to 31% Epan



## Treatment 4

10mm per week (1 application of 20mm each fortnight)

Equivalent to 15% Epan





## Treatment 5

10mm per week (1 application of 10mm each week)

Equivalent to 15% Epan

