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## APPENDIX A

### SOIL AND WEATHER DATA FOR THE EXPERIMENTAL SITES

#### 1. SOIL DATA

**Table A1: Soil chemical properties of the top 30 cm soil depths of the sites**

Parameter	Open field	Rain shelter
Electrical resistance (Saturation paste method) (Ohm)	2000.0	2200.0
pH (1:2.5 soil: water)	5.1	5.2
Iron (Fe) (EDTA extraction method) (mg/kg)	71.1	67.2
NH <sub>4</sub> <sup>+</sup> (1:2 soil :1M KCl) (mg/kg)	4.0	3.5
NO <sub>3</sub> <sup>-</sup> ((50 g soil :100 ml 1M KCl) (mg/kg)	6.1	5.3
Phosphorus (P) (Bray I method) (mg/kg)	28.2	29.0
Potassium (K) (Ammonium acetate extractable) (mg/kg)	73.0	65.0
Sodium (Na) (Ammonium acetate extractable) (mg/kg)	31.0	21.0
Calcium (Ca) (Ammonium acetate extractable) (mg/kg)	190.0	186.0
Magnesium (Mg) (Ammonium acetate extractable) (mg/kg)	42.0	44.0

**Table A2: Physical properties for the different soil layers of the experimental sites**

Experimental	Soil depth (cm)	Particle size distribution (%)			Bulk density (Mg/m <sup>3</sup> )	Water content (m <sup>3</sup> /m <sup>3</sup> )	
		Clay	Silt	Sand		Field capacity	Permanent wilting point
Open field	0-20	20.1	13.1	66.8	1.42	0.202	0.102
	20-40	24.2	12.5	63.3	1.64	0.251	0.110
	40-60	26.6	10.3	63.1	1.48	0.240	0.119
	60-80	28.4	14.5	57.1	1.49	0.267	0.130
Rain shelter	0-20	23.2	10.3	56.5	1.45	0.261	0.130
	20-40	28.2	11.3	60.5	1.61	0.298	0.150
	40-60	27.1	13.2	59.7	1.43	0.270	0.140
	60-80	26.5	12.2	61.3	1.49	0.268	0.142



## 2. WEATHER DATA

**Table 1: Mean monthly maximum and minimum temperatures, and total rainfall recorded during regrowth cycles for the maxim allowable soil water depletion trials**

-----Open field trials-----										
Parameters	Harvest 1					Harvest 2				
	12 Mar- 11 July 2005					14 May-13 Sep 2005				
Months (part of a month)	Mar <sup>†</sup>	Apr	May	June	July	May	June	July	Aug	Sep
Maximum temperature (°C)	25.5	23.4	24.3	23.2	20.8	24.2	23.2	22.7	24.8	28.9
Minimum temperature (°C)	14.6	12.7	8.6	6.0	4.8	7.5	6.0	5.0	9.4	11.6
Rainfall (mm)	9.3	7.2	0.2	0.1	0.0	0.2	0.1	0.0	1.4	0.0
Maximum RH (%)	98.4	99.6	87.9	77.9	75.5	87.9	77.9	75.5	75.8	63.6
Minimum RH (%)	52.0	66.3	30.3	22.4	19.4	30.3	22.4	19.4	23.5	14.9
Parameters	Harvest 3					Harvest 4				
	14 Sept- 13 Jan 2006					26 June-25 Oct 2006				
Month (part of month)	Sep	Oct	Nov	Dec	Jan	June	July	Aug	Sep	Oct
Maximum temperature (°C)	30.2	30.3	29.5	29.4	27.4	16.9	22.2	21.3	25.8	29.6
Minimum temperature (°C)	12.3	14.2	15.3	15.5	17.5	2.4	5.4	6.0	9.1	14.3
Rainfall (mm)	0.0	15.2	79.2	65.4	95.7	0.0	0.0	36.1	0.5	9.0
Maximum RH (%)	70.2	76.2	85.1	86.0	97.1	82.3	78.8	79.6	70.2	76.2
Minimum RH (%)	18.1	21.6	35.7	32.0	60.4	23.6	22.2	26.2	18.1	21.6
-----Rain shelter trials-----										
Parameter for	Harvest 1					Harvest 2				
	27 Feb-26 June 2006					27 June-26 Oct 2006				
Month (part of a month)	Feb	Mar	Apr	May	June	June	July	Aug	Sep	Oct
Maximum temperature (°C)	21.8	26.0	24.9	21.2	22.3	15.5	22.2	21.3	25.8	29.8
Minimum temperature (°C)	16.9	14.7	11.2	5.5	4.7	2.7	5.4	6.0	9.1	14.4
Rainfall (mm)	62.8	103.9	30.2	2.1	0.0	0.0	0.0	36.1	0.5	9.9
Maximum RH (%)	96.2	92.7	92.8	86.4	82.3	82.3	78.8	79.6	70.2	76.2
Minimum RH (%)	51.5	45.7	39.1	27.2	23.6	23.6	22.2	26.2	18.1	21.6

<sup>†</sup>Data include only the part of the month within the specific regrowth period; For Harvest 4 (rain shelter) the rain was out-screened; For the trials in the rain shelter the rain was out-screened; RH represents relative humidity

**Table 2 Mean monthly maximum and minimum temperatures and total rainfall recorded during the regrowth cycles for the one-month irrigation withholding trials**

Parameters	Harvest 1					Harvest 2				
	03 June- 02 Oct 2005					03 Oct 2005-01 Feb 2006				
Months (part of a month)	June <sup>†</sup>	July	Aug	Sep	Oct	Oct	Nov	Dec	Jan	Feb
Maximum temperature (°C)	23.0	22.7	24.8	29.6	26.7	30.5	29.5	29.4	27.3	27.1
Minimum temperature (°C)	6.0	5.0	9.4	12.1	9.1	14.6	15.3	15.5	17.7	16.9
Rainfall (mm)	0.1	0.0	1.4	0.2	0.0	15.2	79.2	65.4	248.0	0.0
Maximum RH (%)	77.9	75.5	75.3	63.6	73.6	73.6	82.9	30.2	97.1	96.2
Minimum RH (%)	22.4	19.4	23.5	14.9	20.1	20.1	28.0	87.6	60.4	51.5
Parameters	Harvest 3					Harvest 4				
	12 July- 11 Nov 2006					27 Oct 2006-26 Feb 2007				
Month (part of month)	July	Aug	Sep	Oct	Nov	Oct	Nov	Dec	Jan	Feb
Maximum temperature (°C)	22.9	21.3	25.8	29.7	28.4	28.7	27.8	27.8	31.0	32.6
Minimum temperature (°C)	6.3	6.0	9.1	14.6	14.1	15.7	14.8	14.8	15.8	16.3
Rainfall (mm)	0.0	3.6	0.5	19.0	10.1	9.0	91.6	117.2	56.4	38.3
Maximum RH (%)	78.8	79.6	70.2	76.2	85.1	76.2	85.1	86.0	86.8	79.8
Minimum RH (%)	22.2	26.2	18.1	21.6	35.7	21.6	35.7	32.09	27.8	21.3

<sup>†</sup>Data include only the part of the month within the specific regrowth period; For Harvest 4 (rain shelter) the rain was out-screened; RH represents relative humidity

**Table A3: Average minimum and maximum temperatures and radiant energy inside and outside of the tunnel and glasshouse during each regrowth period**

Growth system	Harvest <sup>†</sup>	Minimum (°C)		Maximum (°C)		Light energy (MJm <sup>-2</sup> d <sup>-1</sup> )	
		Inside	Outside	Inside	Outside	Inside	Outside
Tunnel	Harvest 1	9.1	8.1	20.2	24.8	10.2	15.7
	Harvest 2	18.2	15.1	33.4	26.4	10.3	15.9
	Harvest 3	10.4	4.6	26.4	21.4	8.3	12.8
	Harvest 4	19.3	14.6	34.2	29.1	11.6	17.9
Glasshouse	Harvest 1	12.4	10.0	26.3	19.3	12.8	20.7
	Harvest 2	19.2	9.2	33.2	22.4	13.8	21.3

<sup>†</sup>Harvests 1, 2, and 3 in the tunnel were conducted in September 2005, and April, August and December 2006, respectively; Harvests 1 and 2 in the glasshouse were done in June and October 2006, respectively

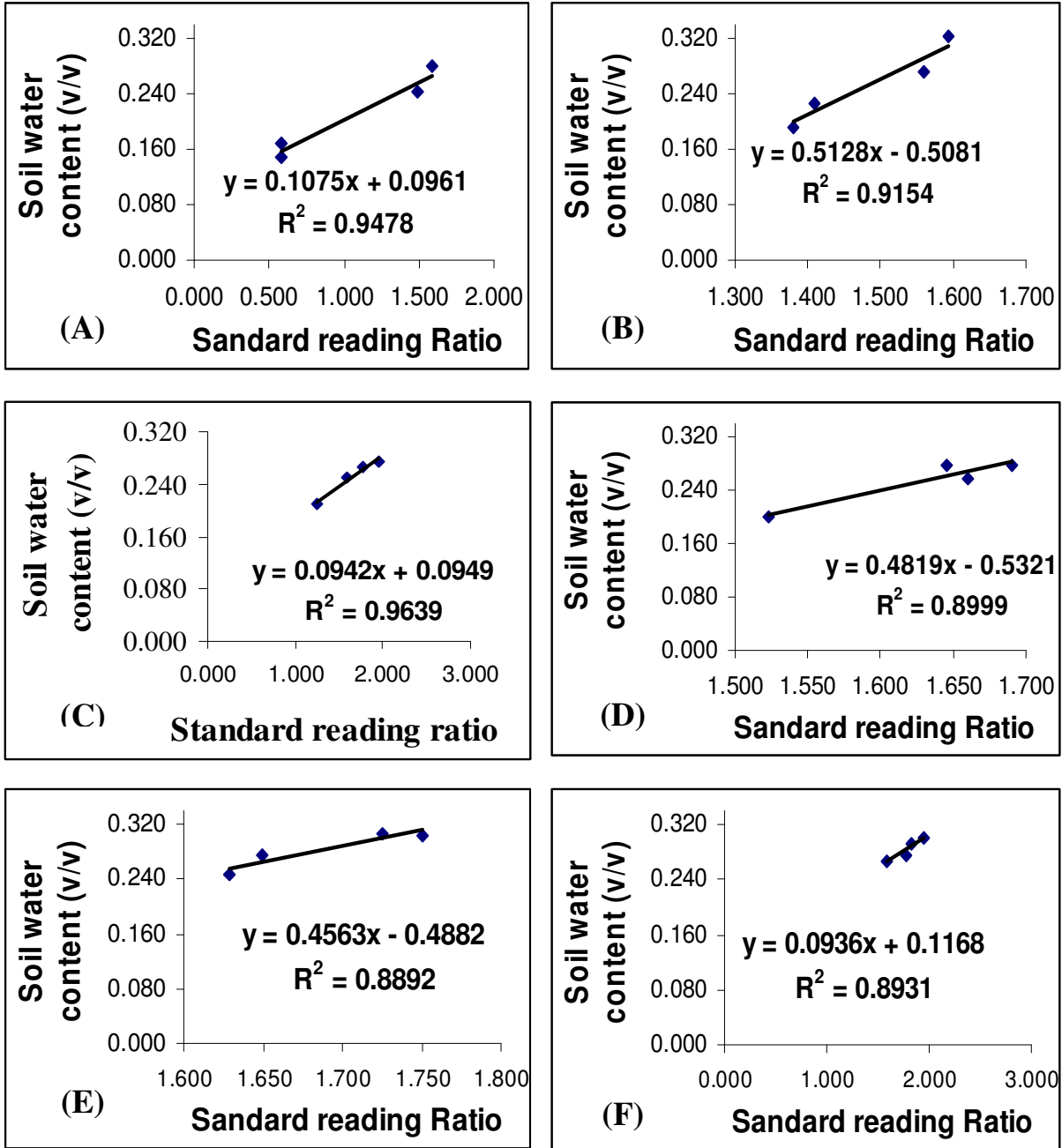
## APPENDIX B

### NEUTRON PROBE CALIBRATION PROCESSES

#### 1. OPEN-FIELD TRIALS

**Table B1: Neutron probe calibration data the open-field trials (maximum allowable depletion and the one-month irrigation-withholding experiments)**

Spot	Soil layer (m)	Neutron probe		Standard reading in air	Standard ratio		Gravimetric soil water content		Average oil bulk density (Mg/m <sup>3</sup> )	Volumetric soil water content (m <sup>3</sup> /m <sup>3</sup> )		
		Spot 1	Spot 2		Spot 1	Spot 2	Spot 1	Spot 2		Spot 1	Spot 2	average
Wet	0.0-0.2	16311	15861	10611	1.537	1.495	0.151	0.134	1.42	0.214	0.190	0.202
	0.2-0.4	16053	17209	10611	1.513	1.522	0.146	0.164	1.62	0.237	0.265	0.251
	0.4-0.6	16262	17835	10611	1.533	1.881	0.134	0.190	1.48	0.199	0.281	0.240
	0.6-0.8	17527	16587	10611	1.708	1.493	0.189	0.170	1.49	0.281	0.253	0.267
	0.8-1.0	18682	17475	10611	1.811	1.647	0.219	0.174	1.39	0.304	0.242	0.273
	1.0-1.2	19567	18477	10611	1.874	1.701	0.209	0.187	1.42	0.297	0.265	0.281
Dry	0.0-0.2	6228	7340	10748	0.58	0.683	0.083	0.072	1.42	0.119	0.102	0.110
	0.2-0.4	13623	12451	10748	1.27	1.158	0.124	0.110	1.62	0.201	0.178	0.190
	0.4-0.6	15048	13482	10748	1.65	1.354	0.146	0.127	1.48	0.215	0.187	0.201
	0.6-0.8	15807	14739	10748	1.47	1.371	0.157	0.161	1.49	0.234	0.240	0.237
	0.8-1.0	16232	16958	10748	1.67	1.578	0.190	0.176	1.39	0.265	0.244	0.254
	1.0-1.2	16807	16043	10748	1.53	1.493	0.171	0.181	1.42	0.243	0.257	0.250



**Figure B1: Regression equations for the 0-20 cm (A), 20-40 cm (B), 40-60 cm (C), 60-80 cm (D), 80-100 cm (E) and 100-120 cm (F) soil layers (for the open-field trials)**

## 2. RAIN-SHELTER TRIALS

**Table B2: Neutron probe calibration data for the rain-shelter (maximum allowable depletion and the one-month irrigation-withholding experiments)**

Spot	Soil layer (m)	Neutron probe reading from soil		Probe reading in air	Standard ratio		Gravimetric soil water content		Average soil bulk density (g/cm <sup>3</sup> )	Volumetric soil water content (m <sup>3</sup> /m <sup>3</sup> )		
		Spot 1	Spot 2		Spot 1	Spot 2	Spot 1	Spot 2		Spot 1	Spot 2	average
Wet	0.0-0.2	16864	15787	10595	1.592	1.490	0.193	0.167	1.45	0.280	0.242	0.2610
	0.2-0.4	17369	16528	10595	1.593	1.560	0.201	0.169	1.61	0.324	0.272	0.2980
	0.4-0.6	17796	18672	10595	1.963	1.762	0.192	0.186	1.43	0.274	0.266	0.270
	0.6-0.8	17909	17588	10595	1.690	1.660	0.187	0.173	1.49	0.278	0.258	0.2680
	0.8-1.0	18550	16846	10595	1.751	1.649	0.188	0.169	1.62	0.304	0.274	0.2890
	1.0-1.2	19352	20660	10595	1.826	1.950	0.203	0.210	1.43	0.291	0.301	0.2960
Dry	0.0-0.2	6228	6145	10934	0.588	0.580	0.103	0.117	1.45	0.1495	0.1695	0.1595
	0.2-0.4	14622	15243	10934	1.380	1.409	0.119	0.141	1.61	0.192	0.2266	0.2093
	0.4-0.6	15348	16839	10934	1.249	1.589	0.146	0.174	1.43	0.2088	0.2488	0.2288
	0.6-0.8	16137	17430	10934	1.523	1.645	0.134	0.186	1.49	0.199	0.2778	0.2384
	0.8-1.0	16832	18283	10934	1.629	1.726	0.151	0.189	1.62	0.2454	0.3054	0.2754
	1.0-1.2	16806	18808	10934	1.586	1.775	0.187	0.193	1.43	0.2677	0.2757	0.2717

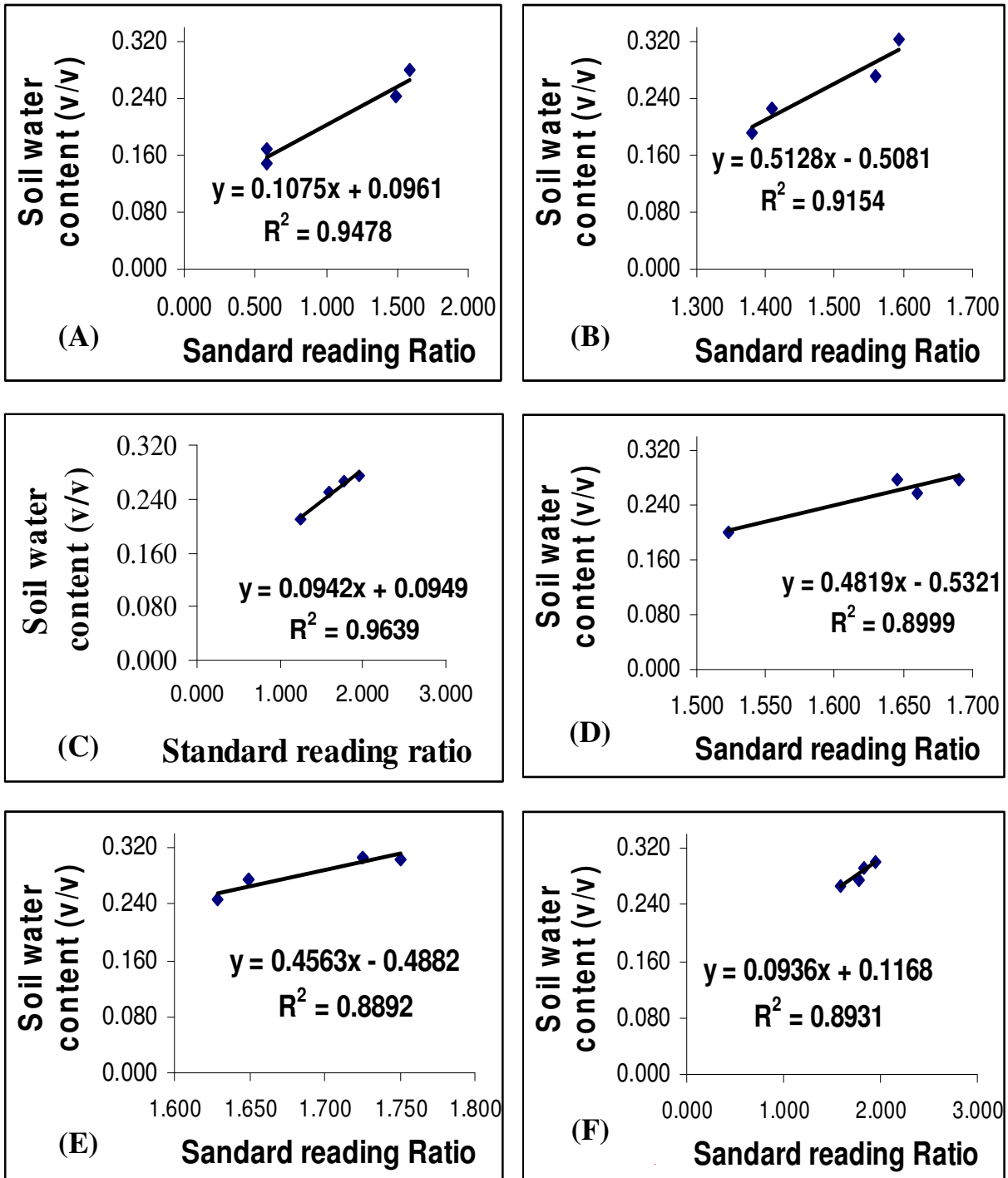


Figure B2: Regression equations for the 0-20 cm (A), 20-40 cm (B), 40-60 cm (C), 60-80 cm (D), 80-100 cm (E) and 100-120 cm (F) soil layers (for the rain-shelter trials)

## APPENDIX C

### SUMMARISED ANALYSIS OF VARIANCE (ANOVA) TABLES

**Table C1: Summary of ANOVA table for the maximum allowable soil water depletion experiments (open-field trial)**

Harvest	Source of variation	Degree of freedom	†F-probability levels for							
			Fresh yield	Dry yield	Leaf area	Leaf fresh proportion (%)	Dry matter content		Oil yield	Oil content
							Leaf	Stem		
Harvest 1 (July 2005)	Block	3	0.458 <sup>NS</sup>	0.128 <sup>NS</sup>	0.709 <sup>NS</sup>	0.753 <sup>NS</sup>	0.649 <sup>NS</sup>	0.503 <sup>NS</sup>	0.565 <sup>NS</sup>	0.305 <sup>NS</sup>
	Treatment	3	0.017*	0.009*	0.005*	0.000*	0.000**	0.000**	0.008**	0.035*
	Error	9	-	-	-	-	-	-	-	-
Harvest 2 (September 2005)	Block	3	0.691 <sup>NS</sup>	0.649 <sup>NS</sup>	0.632 <sup>NS</sup>	0.80 <sup>NS</sup>	0.792 <sup>NS</sup>	0.503	0.665 <sup>NS</sup>	0.142 <sup>NS</sup>
	Treatment	3	0.000**	0.001**	0.001**	0.000**	0.002**	0.000**	0.000**	0.033*
	Error	9	-	-	-	-	-	-	-	-
Harvest 3 (January 2006)	Block	3	0.746 <sup>NS</sup>	0.115 <sup>NS</sup>	0.837 <sup>NS</sup>	0.0926 <sup>NS</sup>	0.814 <sup>NS</sup>	0.880 <sup>NS</sup>	0.417 <sup>NS</sup>	0.925 <sup>NS</sup>
	Treatment	3	0.000**	0.001**	0.000**	0.000**	0.021*	0.014*	0.000**	0.069 <sup>NS</sup>
	Error	9	-	-	-	-	-	-	-	-
Harvest 4 (October 2006)	Block	3	0.103 <sup>NS</sup>	0.853 <sup>NS</sup>	0.072 <sup>NS</sup>	0.140 <sup>NS</sup>	0.765 <sup>NS</sup>	0.453 <sup>NS</sup>	0.0177*	0.105 <sup>NS</sup>
	Treatment	3	0.000**	0.000**	0.000**	0.001**	0.000**	0.001**	0.000**	0.004**
	Error	9	-	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)



**Table C2: Summary of ANOVA table for the maximum allowable soil water depletion experiments (rain-shelter trial)**

Harvest	Source of variation	Degree of freedom	†F-probability levels for							
			Fresh yield	Dry yield	Leaf area	Leaf fresh proportion (%)	Dry matter content		Oil yield	Oil content
							Leaf	Stem		
Harvest 1 (July 2005)	Block	3	0.103 <sup>NS</sup>	0.410 <sup>NS</sup>	0.058 <sup>NS</sup>	0.192 <sup>NS</sup>	0.985 <sup>NS</sup>	0.525 <sup>NS</sup>	0.112 <sup>NS</sup>	0.276 <sup>NS</sup>
	Treatment	3	0.000**	0.002**	0.000**	0.000**	0.000**	0.000**	0.002**	0.003**
	Error	9	-	-	-	-	-	-	-	-
Harvest 2 (September 2005)	Block	3	0.269 <sup>NS</sup>	0.123 <sup>NS</sup>	0.219 <sup>NS</sup>	0.067 <sup>NS</sup>	0.525 <sup>NS</sup>	0.985 <sup>NS</sup>	0.274 <sup>NS</sup>	0.091 <sup>NS</sup>
	Treatment	3	0.000**	0.000**	0.000**	0.000**	0.0173*	0.024*	0.002**	0.007**
	Error	9	-	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C3: Summary of ANOVA table for the one-month irrigation-withholding trials**

Harvest	Source of variation	Degree of freedom	†F-probability levels for						
			Fresh yield	Dry yield	Leaf area index	Leaf fresh proportion (%)	Dry matter content (%)		Oil yield
							Leaf	Stem	
Harvest 1 (October 2005)	Block	3	0.728 <sup>NS</sup>	0.562 <sup>NS</sup>	0.204 <sup>NS</sup>	0.012*	0.085 <sup>NS</sup>	0.619 <sup>NS</sup>	0.730 <sup>NS</sup>
	Treatment	3	0.008**	0.008**	0.000**	0.003**	0.084 <sup>NS</sup>	0.200 <sup>NS</sup>	0.009**
	Error	9	-	-	-	-	-	-	-
Harvest 2 (September 2005)	Block	3	0.063 <sup>NS</sup>	-	-	0.146 <sup>NS</sup>	-	-	0.123 <sup>NS</sup>
	Treatment	3	0.004**	-	-	0.002**	-	-	0.051 <sup>NS</sup>
	Error	9	-	-	-	-	-	-	-
Harvest 3 (November 2006)	Block	3	0.215 <sup>NS</sup>	-	0.392 <sup>NS</sup>	0.0279*	0.396 <sup>NS</sup>	0.033*	0.223 <sup>NS</sup>
	Treatment	3	0.002**	-	0.000**	0.000**	0.003**	0.290 <sup>NS</sup>	0.590 <sup>NS</sup>
	Error	9	-	-	-	-	-	-	-
Harvest 4 (February 2007)	Block	3	0.451 <sup>NS</sup>	0.748 <sup>NS</sup>	0.935 <sup>NS</sup>	0.712 <sup>NS</sup>	0.215 <sup>NS</sup>	0.840 <sup>NS</sup>	0.479 <sup>NS</sup>
	Treatment	3	0.000**	0.003**	0.045*	0.027*	0.001**	0.000**	0.004**
	Error	9	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C4: Summary of ANOVA table for the effects of irrigation frequency, growing medium and a one-week irrigation-withholding trials in the tunnel (for Harvest 1, September 2005)**

Source of variation	Degree of freedom	Fresh herbage yield	Dry yield	Leaf fresh mass %	Dry matter content (%)		Oil yield	Oil content
					Leaf area	Stem		
Block	3	0.029*	0.0462*		0.022*		0.016*	0.363 <sup>NS</sup>
Irrigation frequency	2	0.000**	0.0000**		0.000**		0.000**	0.000**
Soil type (B)	1	0.059 <sup>NS</sup>	0.682 <sup>NS</sup>		0.8.21 <sup>NS</sup>		0.000**	0.005**
AB	2	0.003**	0.112 <sup>NS</sup>		0.010**		0.000**	0.000**
Error	15	-		-	-	-	-	-
One-week stress (C)	1	0.000**	0.000**		0.000**		0.000**	0.000**
AC	2	0.000**	0.004**		0.000**		0.000**	0.004**
BC	1	0.001**	0.001**		0.003**		0.925 <sup>NS</sup>	0.921 <sup>NS</sup>
ABC	2	0.029**	0.032*		0.321 <sup>NS</sup>		0.005**	0.034 <sup>NS</sup>
Error	18	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C5: Summary of ANOVA table for the effects of irrigation frequency, growing medium and a one-week irrigation-withholding trials in the tunnel (for Harvest 2, April 2006)**

Source of variation	Degree of freedom	†F-probability levels for			
		Fresh herbage yield	Leaf area	Oil yield	Oil content
Block	3	0.213 <sup>NS</sup>	0.892 <sup>NS</sup>	0.216 <sup>NS</sup>	0.871 <sup>NS</sup>
Irrigation frequency (A)	2	0.000**	0.000**	0.000**	0.000**
Soil type (B)	1	0.000**	0.000**	0.000**	0.189 <sup>NS</sup>
AB	2	0.000**	0.122 <sup>NS</sup>	0.000**	0.030**
Error	15	-	-	-	-
One-week stress (C)	1	0.001**	0.046*	0.000**	0.000**
AC	2	0.013*	0.675 <sup>NS</sup>	0.001**	0.001**
BC	1	0.223 <sup>NS</sup>	0.290 <sup>NS</sup>	0.564 <sup>NS</sup>	0.003**
ABC	2	0.055 <sup>NS</sup>	0.924 <sup>NS</sup>	0.000**	0.031*
Error	18	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C6: Summary of ANOVA table for the effects of irrigation frequency, growing medium and a one-week irrigation-withholding trial in the tunnel (for Harvest 3, August 2006)**

Source of variation	Degree of freedom	†F-probability levels for					
		Herbage yield		Leaf fresh	Leaf area	Oil yield	Oil
		Fresh	Dry	mass %			content
Block	3	0.346 <sup>NS</sup>	0.025*	0.014*	0.742 <sup>NS</sup>	0.641 <sup>NS</sup>	0.687 <sup>NS</sup>
Irrigation frequency (A)	2	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
Soil type (B)	1	0.000**	0.000**	0.000**	0.000**	0.006**	0.189 <sup>NS</sup>
AB	2	0.009**	0.031*	0.492 <sup>NS</sup>	0.000**	0.000**	0.030*
Error	15	-	-	-	-	-	-
One-week stress (C)	1	0.000**	0.002**	0.924 <sup>NS</sup>	0.000**	0.000**	0.000**
AC	2	0.002**	0.352 <sup>NS</sup>	0.008**	0.026*	0.000**	0.001**
BC	1	0.313 <sup>NS</sup>	0.697 <sup>NS</sup>	0.169 <sup>NS</sup>	0.424 <sup>NS</sup>	0.000**	0.003**
ABC	2	0.105 <sup>NS</sup>	0.721 <sup>NS</sup>	0.658 <sup>NS</sup>	0.624 <sup>NS</sup>	0.022*	0.031*
Error	18	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C7: Summary of ANOVA table for the effects of irrigation frequency and the one-week irrigation-withholding trials in the glasshouse**

Harvest	Source of variation	Degrees of freedom	†F-probability levels for				
			Fresh herbage mass	Percentage fresh leaf mass	Leaf area	Essential oil yield	Essential oil content
Harvest 1 (June 2006)	Block	5	0.178 <sup>NS</sup>	0.143 <sup>NS</sup>	0.026*	0.186 <sup>NS</sup>	
	Irrigation Frequency (A)	4	0.000**	0.000**	0.000**	0.000**	
	Error (A)	20	-	-	-	-	
	One-week stress (B)	1	0.000**	0.001**	0.000**	0.000**	
	AB	4	0.000**	0.1045 <sup>NS</sup>	0.019*	0.000**	
	Error (AB)	25	-	-	-	-	-
Harvest 2 (October 2006)	Block	5	0.012*	-	-	0.009**	
	Irrigation Frequency (A)	4	0.000**	-	-	0.000**	
	Error (A)	20	-	-	-	-	
	One-week stress (B)	1	0.000**	-	-	0.000**	
	AB	4	0.000**	-	-	0.006**	
	Error (AB)	25	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C8: Summary of ANOVA table for the leaf physiological parameters recorded during the one-week irrigation-withholding period prior to harvesting in the glasshouse (for Harvest 1, June 2006)**

Parameter	Source of variation	Degree of freedom	†F-probability levels for							
			Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Relative water content	Block	5	0.545 <sup>NS</sup>	0.290 <sup>NS</sup>	0.790 <sup>NS</sup>	0.744 <sup>NS</sup>	0.352 <sup>NS</sup>	0.701 <sup>NS</sup>	0.329 <sup>NS</sup>	0.865 <sup>NS</sup>
	Irrigation frequency (A)	4	0.986 <sup>NS</sup>	0.031*	0.006**	0.002**	0.000**	0.001**	0.000**	0.001**
	Error (A)	20	-	-	-	-	-	-	-	-
Leaf water potential	Block	5	0.142 <sup>NS</sup>	0.316 <sup>NS</sup>	0.791 <sup>NS</sup>	0.924 <sup>NS</sup>	0.861 <sup>NS</sup>	0.671 <sup>NS</sup>	0.155 <sup>NS</sup>	0.249 <sup>NS</sup>
	Irrigation frequency (A)	4	0.088 <sup>NS</sup>	0.000**	0.000**	0.000**	0.000**	0.000**	0.029*	0.008**
	Error	20	-	-	-	-	-	-	-	-
Transpiration rate	Block	5	0.443 <sup>NS</sup>	0.468 <sup>NS</sup>	0.094 <sup>NS</sup>	0.078 <sup>NS</sup>	0.798 <sup>NS</sup>	0.493 <sup>NS</sup>	0.779 <sup>NS</sup>	0.855 <sup>NS</sup>
	Irrigation frequency (A)	4	0.143 <sup>NS</sup>	0.682 <sup>NS</sup>	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	Error (A)	20	-	-	-	-	-	-	-	-
Stomatal conductance	Block	5	0.766 <sup>NS</sup>	0.625 <sup>NS</sup>	0.991 <sup>NS</sup>	0.685 <sup>NS</sup>	0.942 <sup>NS</sup>	0.430 <sup>NS</sup>	0.571 <sup>NS</sup>	0.826 <sup>NS</sup>
	Irrigation frequency (A)	4	0.014*	0.014*	0.131 <sup>NS</sup>	0.239 <sup>NS</sup>	0.005**	0.000**	0.000**	0.000**
	Error (A)	20	-	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)

**Table C 9: Summary of ANOVA table for the leaf physiological parameters recorded during the one-week irrigation-withholding period prior to harvesting in the glasshouse (for Harvest 2, October 2006)**

Parameter	Source of variation	Degree of freedom	†F-probability levels for							
			Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Relative water content	Block	5	0.455 <sup>NS</sup>	0.275 <sup>NS</sup>	0.622 <sup>NS</sup>	0.991 <sup>NS</sup>	0.504 <sup>NS</sup>	0.235 <sup>NS</sup>	0.324 <sup>NS</sup>	0.029 <sup>NS</sup>
	Irrigation frequency	4	0.817 <sup>NS</sup>	0.289 <sup>NS</sup>	0.159 <sup>NS</sup>	0.037*	0.006**	0.001**	0.000**	0.000**
	Error	20	-	-	-	-	-	-	-	-
Leaf water potential	Block	5	0.219 <sup>NS</sup>	0.354 <sup>NS</sup>	0.954 <sup>NS</sup>	0.958 <sup>NS</sup>	0.856 <sup>NS</sup>	0.640 <sup>NS</sup>	0.235 <sup>NS</sup>	0.255 <sup>NS</sup>
	Irrigation frequency	4	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	Error	20	-	-	-	-	-	-	-	-
Transpiration rate	Block	5	0.555 <sup>NS</sup>	0.828 <sup>NS</sup>	0.531 <sup>NS</sup>	0.394 <sup>NS</sup>	0.747 <sup>NS</sup>	0.076 <sup>NS</sup>	0.716 <sup>NS</sup>	0.695 <sup>NS</sup>
	Irrigation frequency	4	0.826 <sup>NS</sup>	0.056 <sup>NS</sup>	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	Error	20	-	-	-	-	-	-	-	-
Stomatal conductance	Block	5	0.458 <sup>NS</sup>	0.793 <sup>NS</sup>	0.327 <sup>NS</sup>	0.205 <sup>NS</sup>	0.0941 <sup>NS</sup>	0.085 <sup>NS</sup>	0.210 <sup>NS</sup>	0.2919 <sup>NS</sup>
	Irrigation frequency	4	0.007**	0.034**	0.002**	0.000**	0.000**	0.000**	0.000**	0.000**
	Error	20	-	-	-	-	-	-	-	-

†Not significant (NS), significant at  $\alpha = 0.05$  (\*) and significant at  $\alpha = 0.01$  (\*\*)