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ROTHAMSTED  
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# Rothamsted Experimental Station Report for 1983

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## Weather Tables

### Rothamsted Research

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## WEATHER TABLES

**ROTHAMSTED WEATHER 1982-83**

Latitude 51° 48' 30" N; Longitude 0° 21' 10" W; Latitude 128 m

	1983												Year			
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
<b>TEMPERATURE (°C)</b>																
Mean screen maximum	12.9	10.2	6.6	8.7	3.5	9.6	10.8	14.0	18.8	25.6	23.1	17.4	13.7	9.7	7.7	13.5
Difference from average	-0.4	+1.3	+0.1	+3.0	-2.9	+0.5	-1.3	-1.9	-0.1	+5.0	+2.7	-0.4	+0.4	+0.7	+1.2	+0.6
Mean screen minimum	6.3	4.8	1.0	3.2	-1.3	2.2	2.7	6.2	9.7	13.4	11.8	10.1	6.4	4.5	1.9	5.9
Difference from average	+0.5	+2.1	0.0	+3.1	-1.7	+0.9	-0.5	0.0	+0.5	+2.3	+0.9	+1.0	+0.6	+1.8	+0.9	+0.8
Soil at 10 cm	9.4	7.2	2.9	4.7	1.5	4.3	5.8	10.1	15.4	20.6	18.1	13.1	9.4	6.8	4.1	9.5
Dewpoint	8.5	6.2	2.1	4.0	-1.3	3.6	3.9	6.9	10.0	14.7	12.3	10.6	7.5	5.2	3.0	6.7
No. of days with ground frost	9	13	22	17	25	22	18	4	2	0	2	2	11	11	21	135
<b>RADIATION</b>																
Sunshine (h per month)	73	67	54	49	75	98	142	120	185	262	225	111	115	46	58	1486
Difference from average	-30	+4	+9	-3	+8	-17	-8	-74	-16	+72	+45	-33	+12	-16	+12	-18
Mean daily radiation (MJ m <sup>-2</sup> day <sup>-1</sup> )	4.9	2.9	1.9	2.3	5.1	7.5	12.1	13.7	18.0	20.5	16.1	9.0	6.1	2.8	2.0	9.6
<b>WIND (km day<sup>-1</sup>)</b>																
Wind run at 2 m	162	242	244	355	314	262	250	190	190	137	166	226	242	180	247	230
<b>WATER (mm per month)</b>																
Rainfall (5 inch walled gauge)	127	100	72	69	43	44	118	93	26	35	13	78	41	50	62	672
Difference from average	+65	+30	+6	+7	-8	-9	+72	+40	-31	-17	-47	+20	-22	-21	-5	-21
Rain days	20	23	17	20	13	19	22	22	9	6	4	14	13	8	18	168
Drainage through 50 cm bare undisturbed soil	103	84	68	49	29	19	78	46	4	-	-	6	19	31	57	338
Open water (tank) evaporation	29	17	14	13	4	29	51	65	102	131	134	61	39	18	10	657
Potential evaporation	12	3	1	7	14	30	50	67	98	122	94	45	23	5	0	555

**NOTES ON THE TABLE**

1. Except for potential evaporation, all quantities are measured.
2. Drainage and evaporation are measured in inches.
3. Long period average s are for different periods: air temperatures 1878-1982; sunshine 1892-1982; rain 1948-1982.

**WOBURN WEATHER 1982-83**

Latitude 52° 1' 5" N; Longitude 0° 35' 35" W; Altitude 89m

	1982	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
<b>TEMPERATURE (°C)</b>																	
Mean screen maximum	13.3	10.4	10.4	7.1	9.3	4.1	10.0	11.3	14.2	19.2	25.9	23.0	17.6	14.1	10.1	8.2	13.9
Difference from average	-0.5	+1.1	+0.4	+0.4	+3.4	-2.3	+0.6	-1.1	-1.8	-0.1	+5.0	+2.3	-0.5	+0.3	+0.8	+1.5	+0.7
Mean screen minimum	6.9	5.3	1.0	1.0	4.1	-1.4	2.6	2.5	6.0	9.6	12.6	11.7	10.4	6.5	4.2	2.5	5.9
Difference from average	+0.8	+2.1	-0.3	-0.3	+3.8	-1.8	+1.1	-1.0	-0.1	+0.4	+1.5	+0.8	+1.2	+0.3	+0.9	+1.2	+0.7
Soil at 10 cm	9.7	7.3	3.3	3.3	5.1	1.7	4.8	6.2	10.5	15.4	19.9	17.7	13.3	9.7	7.0	4.4	9.6
Dewpoint	8.5	5.9	2.2	2.2	3.7	0.0	3.5	3.8	7.2	10.3	15.1	13.2	11.2	8.2	5.7	3.6	7.1
No. of days with ground frost	2	10	18	18	8	25	19	18	1	2	0	0	1	9	8	14	105
<b>RADIATION</b>																	
Sunshine (h per month)	74	57	38	38	39	60	86	135	106	167	236	215	108	110	38	40	1340
Difference from average	-28	-4	-6	-6	-10	-3	-28	-5	-77	-28	+57	+45	-27	+9	-22	-4	-93
Mean daily radiation (MJ m <sup>-2</sup> day <sup>-1</sup> )	5.5	3.0	2.0	2.0	2.5	5.1	7.9	12.7	13.4	17.9	20.0	15.9	9.5	6.5	N/A	N/A	—
<b>WIND (km day<sup>-1</sup>)</b>																	
Wind run at 2 m	179	269	268	268	389	223	262	203	164	182	114	139	237	275	137	279	217
<b>WATER (mm per month)</b>																	
Rainfall (5 inch gauge)	109	80	53	53	41	29	38	97	119	24	59	17	74	45	40	45	628
Difference from average	+54	+18	-1	-1	-13	-11	-9	+52	+65	-28	+6	-45	+23	-10	-22	-9	-1
Rain days	17	17	12	12	13	16	17	22	21	8	9	7	17	13	9	17	169

NOTE ON THE TABLE

1. Long period averages are for the period 1930-82.

**BROOM'S BARN WEATHER 1982-83**

Latitude 52° 16' N; Longitude 0° 34' E; Altitude 75 m

	1982	1983	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
<b>TEMPERATURE (°C)</b>															
Mean screen maximum	13.2	10.2	9.1	4.0	9.8	11.1	14.0	18.9	25.4	22.5	17.6	14.2	10.0	7.7	13.7
Difference from average	-1.0	+1.1	+3.2	-2.3	+0.9	-0.5	-1.9	-0.2	+4.7	+1.4	-0.9	0.0	+0.9	+1.1	+0.5
Mean screen minimum	7.7	5.6	3.6	-1.2	3.0	3.0	6.5	9.9	13.4	12.5	10.9	7.4	4.9	2.9	6.4
Difference from average	+0.5	+2.3	+2.5	-2.2	+0.9	-0.7	-0.3	+0.2	+1.9	+0.9	+0.9	+0.2	+1.4	+1.3	+0.6
Soil at 10 cm	9.8	7.0	4.7	1.3	4.6	6.4	10.8	16.0	20.2	18.3	13.5	9.9	6.8	4.0	9.7
Dewpoint	9.2	5.9	3.6	-1.2	3.4	4.6	7.6	10.4	14.7	13.1	10.6	7.9	5.5	3.5	7.0
No. of days with ground frost	2	5	6	20	10	10	1	0	0	0	0	1	6	13	67
<b>RADIATION</b>															
Sunshine (h per month)	76	64	52	94	86	135	141	177	233	196	111	129	39	58	1451
Difference from average	-33	-6	+3	+34	-25	-6	-56	-25	+52	+21	-39	+22	-41	+11	-37
Mean daily radiation (MJ m <sup>-2</sup> day <sup>-1</sup> )	5.1	2.8	2.5	5.6	7.8	12.3	14.6	18.9	19.3	15.0	8.9	6.4	2.7	2.1	9.7
Mean daily diffuse radiation (MJ m <sup>-2</sup> day <sup>-1</sup> )	3.6	2.0	1.9	3.6	5.7	7.6	10.2	11.4	10.7	8.8	5.6	3.8	2.1	1.4	6.1
WIND (km day <sup>-1</sup> )	141	246	352	243	250	200	172	171	127	142	229	240	145	257	211
Wind run at 2 m															
<b>WATER (mm per month)</b>															
Rainfall (5 inch gauge)	119	71	39	40	38	86	120	30	34	10	65	39	55	40	596
Difference from average	+72	+11	-6	+7	-7	+43	+74	-22	-11	-45	+14	-12	-6	-13	+16
Raindays	22	15	15	11	17	19	24	9	7	4	16	15	10	16	163
Open water evaporation sunken tank	21	23	17	14	34	49	82	147	147	137	73	42	10	7	729
Difference from average	-17	+4	+3	-1	-5	-14	-22	-5	+23	+18	-11	+5	-9	-6	-24
Open water evaporation Class 'A' pan	25	21	35	28	43	59	81	119	151	132	76	47	11	11	793
Potential transpiration	13	6	14	14	36	47	68	102	116	87	50	25	7	2	568

NOTES ON THE TABLE

1. Except for potential transpiration, all quantities are measured.
2. Long period averages are: air temperature 1964-82; sunshine 1965-82; rainfall 1963-82; evaporation 1970-82.

**SAXMUNDHAM WEATHER 1982-83**  
 Latitude 52° 13' N; Longitude 1° 28' E; Altitude 37 m

	1982	1983	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
<b>TEMPERATURE (°C)</b>															
Mean screen maximum	14.0	11.3	7.1	4.5	9.8	10.9	13.3	18.8	24.1	22.2	18.0	14.0	9.1	7.2	13.4
Difference from average	+0.5	+2.0	0.0	-2.7	+0.9	-0.2	-1.1	+0.1	+3.7	+1.2	-0.6	+0.5	-0.5	+0.2	+0.3
Mean screen minimum	7.1	5.7	1.7	0.0	2.6	2.3	5.9	9.3	12.3	12.6	10.5	6.7	4.4	3.0	6.1
Difference from average	-0.1	+1.7	-0.7	-1.7	-0.2	-1.3	-1.1	-0.7	+0.5	+0.6	+0.1	-0.5	+0.1	+0.8	-0.1
Soil at 10 cm	11.0	8.1	2.9	5.2	6.4	8.6	12.7	19.1	22.2	19.7	13.9	11.0	7.3	4.4	11.0
Dewpoint	8.9	7.2	2.8	0.0	3.3	4.4	5.0	10.6	15.0	13.9	12.0	7.8	5.6	3.9	7.2
No. of days with ground frost	6	7	14	21	15	13	5	0	0	0	0	5	6	12	86
<b>RADIATION</b>															
Mean daily radiation (MJ m <sup>-2</sup> day <sup>-1</sup> )	4.3	2.4	1.7	4.9	6.9	11.0	12.6	17.6	18.8	16.9	8.2	5.8	2.4	1.7	9.1
<b>WIND (km day<sup>-1</sup>)</b>															
Wind run at 2 m	229	382	283	301	302	261	224	176	142	173	278	288	184	318	254
<b>WATER (mm month<sup>-1</sup>)</b>															
Rainfall (5 inch gauge)	124	70	51	36	34	80	83	26	37	9	74	51	52	40	579
Difference from average	+75	+10	-9	-5	-17	+42	+45	-20	-8	-32	+7	-9	-10	-22	-26
Rain days	24	17	13	11	17	17	24	9	6	5	16	15	9	17	158
Open water (tank) evaporation	35	35	—	—	—	41	79	98	129	126	70	57	20	—	—

NOTES ON THE TABLE

1. All quantities are measured.
2. Temperatures were measured in °F.
3. 'Soil at 10 cm' and 'Dewpoint' are at 0900 GMT.
4. Radiation was measured with a Kipp Solarimeter.
5. Rain and evaporation were measured in inches.
6. 'Evaporation' is the mean of two open water tanks installed 17 March 1983. They are 56 cm diameter, 30 cm deep and set 15 cm in the ground. Water level is about 6 cm below the rim.
7. Long period averages are for the period 1973-82.