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ROTHAMSTED
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Rothamsted Experimental Station Report for 1984

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Weather Tables

Rothamsted Research

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WEATHER TABLES

ROTHAMSTED WEATHER 1983-84

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

	1984															
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
TEMPERATURE (°C)																
Mean screen maximum	13.7	9.7	7.7	6.4	5.8	7.3	12.8	13.3	19.3	22.6	23.1	16.9	14.5	10.7	7.6	13.3
Difference from average	-0.2	+0.7	+0.9	+0.9	-0.2	-1.6	+0.8	-2.5	+0.3	+2.1	+2.7	-1.0	+0.6	+1.7	+0.8	+0.4
Mean screen minimum	6.4	4.5	1.9	0.2	0.0	1.5	2.1	4.8	9.1	10.3	12.1	9.7	7.3	5.1	1.7	5.3
Difference from average	-0.1	+1.6	+0.6	+0.1	-0.2	+0.1	-1.3	-1.5	+0.1	-0.6	+1.2	+0.5	+0.8	+2.2	+0.4	+0.1
Soil at 10 cm	9.4	6.8	4.1	2.6	2.5	3.7	6.8	10.2	15.2	17.7	17.2	12.8	9.8	7.5	4.5	9.2
Dew point	7.5	5.2	3.0	1.0	0.8	2.0	1.4	5.7	10.5	11.5	13.3	10.4	9.4	6.3	3.5	6.3
No. of days with ground frost	11	11	21	28	22	22	22	14	3	0	0	3	12	10	21	157
RADIATION																
Sunshine (h per month)	115	46	58	91	72	45	233	136	242	228	201	100	93	50	48	1539
Difference from average	+15	-16	+12	+41	+10	-64	+93	-53	+45	+47	+34	-40	-7	-12	+2	+96
Mean daily radiation (MJ m ⁻² day ⁻¹)	6.1	2.8	2.0	2.9	4.3	6.3	16.4	13.5	20.0	18.8	14.9	8.1	5.6	2.7	1.7	115.2
Difference from average	+0.5	0.0	+0.3	+0.7	+0.3	-1.3	+4.9	-2.2	+2.6	+3.1	+1.7	-1.7	0.0	-0.1	0.0	+8.0
WIND (km day⁻¹)																
Wind run at 2 m	242	180	247	316	255	226	193	217	156	131	142	172	187	204	163	197
WATER (mm per month)																
Rainfall (5 inch walled gauge)	41	50	62	96	46	63	7	79	54	14	45	94	88	106	58	750
Difference from average	-19	-19	-7	+33	-6	+11	-40	+28	-4	-37	-16	+35	+28	+37	-11	+58
Rain days	13	8	18	21	14	12	6	13	10	7	10	15	16	22	20	166
Drainage through 50 cm bare undisturbed soil	19	31	57	80	34	42	1	22	17	0	0	26	60	89	55	426
Open water (tank) evaporation	39	18	10	23	14	28	68	69	102	122	104	61	31	19	9	650
Potential evaporation	23	5	0	3	10	28	71	67	99	106	81	44	16	5	0	530

NOTES ON THE TABLE

1. Except for potential evaporation, all quantities are measured
2. Drainage and evaporation are measured in inches.
3. Averages are for 30 years 1951-80, except radiation 28 years 1956-83.

WOBURN WEATHER 1983-84

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

	1984												Year
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
TEMPERATURE (°C)													
Mean screen maximum	6.7	6.1	7.6	13.2	14.1	19.7	22.8	23.4	17.2	14.9	10.7	8.3	13.7
Difference from average	+0.8	-0.2	-1.5	+1.1	-1.7	+0.6	+2.1	+3.1	-0.8	+0.9	+1.5	+1.3	+0.6
Mean screen minimum	0.7	0.2	1.4	1.6	4.0	8.9	10.4	11.5	10.1	7.9	5.4	2.4	5.4
Difference from average	+0.2	-0.2	-0.1	-1.7	-2.2	0.0	-0.5	+0.7	+1.0	+1.4	+2.2	+0.9	+0.1
Soil at 10 cm	2.6	2.6	3.9	6.4	10.2	15.8	17.7	17.1	13.4	10.4	7.9	4.6	9.4
Dew point	1.1	0.5	2.1	2.5	5.9	10.6	11.5	13.8	9.9	9.9	7.1	3.6	6.5
No. of days with ground frost	26	18	16	20	10	1	1	2	4	6	6	21	131
RADIATION													
Sunshine (h per month)	66	55	35	223	134	158	208	184	93	94	44	61	1355
Difference from average	+16	-6	-72	+91	-50	-35	+32	+22	-42	-6	-18	-16	-84
Mean daily radiation (MJ m ⁻² day ⁻¹)	N/A	4.7	6.1	16.6	16.5	19.8	19.6	15.2	8.7	6.3	2.9	2.3	N/A
WIND (km day⁻¹)													
Wind run at 2 m	312	230	171	165	152	166	150	135	190	238	210	179	191
WATER (mm per month)													
Rainfall (5 inch gauge)	73	45	49	9	88	49	12	69	89	48	105	49	685
Difference from average	+20	+3	0	-36	+38	-7	-39	+2	+35	-4	+46	-10	+48
Rain days	19	15	12	6	12	9	7	8	16	14	16	19	153

NOTE ON THE TABLE

Averages are for 30 years, 1951-80.

BROOM'S BARN WEATHER 1983-84
 Latitude 52° 16' N; Longitude 0° 34' E; Altitude 75 m

	1984												1983											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year	Oct	Nov	Dec	Year							
TEMPERATURE (°C)																								
Mean screen maximum	6.2	5.8	7.3	12.7	12.9	18.8	21.2	23.2	16.9	14.9	10.6	7.9	13.2	14.2	10.0	7.7	1482							
Difference from average	+0.2	-0.4	-1.6	+1.1	-3.0	-0.3	+0.2	+2.1	-1.6	+0.7	+1.4	+1.3	0.0	0.0	+0.8	+1.1	1482							
Mean screen minimum	0.3	0.4	1.6	1.9	4.9	9.5	11.2	12.3	10.6	8.6	6.2	2.9	5.9	7.4	4.9	2.9	1482							
Difference from average	-0.8	-0.5	-0.5	-1.8	-1.9	-0.2	-0.4	+0.7	+0.5	+1.4	+2.7	+1.2	+0.1	+0.2	+1.4	+1.2	1482							
Soil at 10 cm	2.2	2.2	3.6	6.7	10.3	15.4	17.9	17.7	13.2	10.3	7.6	4.2	9.3	9.5	6.8	4.0	1482							
Dew point	1.0	0.7	2.3	2.6	5.4	10.7	11.9	13.8	10.6	8.9	6.6	3.8	6.5	7.9	5.5	3.4	1482							
No. of days with ground frost	21	17	18	17	7	0	0	0	0	1	2	13	96	6	6	13	96							
RADIATION																								
Sunshine (h per month)	91	75	36	221	125	194	213	193	87	115	53	79	1482	129	39	58	1482							
Difference from average	+42	+13	-73	+81	-69	-7	+31	+17	-61	+6	-15	+32	-3	+20	-29	+11	1482							
Mean daily radiation (MJ m ⁻² day ⁻¹)	2.96	4.24	6.14	16.20	13.45	18.04	18.03	14.98	7.83	6.39	2.67	2.13	9.42	6.36	2.69	2.06	9.42							
Mean daily diffuse radiation (MJ m ⁻² day ⁻¹)	1.74	3.18	5.31	7.38	6.84	11.26	10.31	8.59	5.29	3.58	1.82	1.22	5.54	3.79	2.13	1.44	5.54							
WIND (km day⁻¹)																								
Wind run at 2 m	294	202	181	166	160	150	139	144	166	209	200	174	182	240	145	257	182							
WATER (mm per month)																								
Rainfall (5 inch gauge)	78	49	40	17	88	94	16	44	103	57	75	39	700	39	55	40	700							
Difference from average	+34	+15	-5	-28	+38	+43	-29	-9	+52	+7	+15	-14	+119	-11	-5	-13	700							
Rain days	20	12	17	6	9	12	10	8	19	12	16	19	160	15	10	16	160							
Open water evaporation sunken tank	3	22	24	79	77	82	110	89	55	37	18	12	608	45	10	7	608							
Difference from average	-6	+7	-15	+17	-26	-40	-15	-31	-28	0	-1	+2	-136	+8	-9	-3	608							
Open water evaporation Class 'A' pan	5	14	27	89	77	96	123	110	55	42	17	10	665	47	11	11	665							
Potential transpiration	3	10	25	64	65	93	98	85	40	26	5	0	514	25	7	2	514							

NOTES ON THE TABLE

1. Except for potential transpiration, all quantities are measured.
2. Long period averages are: air temperature 1964-83; sunshine 1965-83; rainfall 1964-83; evaporation 1970-83.

SAXMUNDHAM WEATHER 1983-84

Latitude 52° 13' N; Longitude 1° 28' E; Altitude 37 m

	1983	1984	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
TEMPERATURE (°C)															
Mean screen maximum	14.0	9.1	7.2	4.8	5.8	10.5	11.2	17.8	20.9	23.0	17.8	15.2	11.9	8.2	12.6
Difference from average	+0.5	-0.5	+0.2	-1.4	-2.8	-0.4	-3.4	-0.6	+0.2	+2.1	-0.6	+1.2	+2.4	+1.2	-0.4
Mean screen minimum	6.7	4.4	3.0	1.1	1.9	2.5	5.6	8.3	10.4	12.2	9.6	8.1	6.4	2.6	5.8
Difference from average	-0.5	+0.1	+0.8	-1.1	-0.2	-1.0	-1.3	-1.4	-1.4	+0.2	-0.7	+0.8	+2.3	+0.3	-0.3
Soil at 10 cm	11.0	7.3	4.4	1.9	2.8	6.9	11.1	16.0	17.2	18.7	13.2	11.4	8.8	5.4	9.8
Dew point	7.8	5.6	3.9	1.1	3.3	2.8	7.2	11.1	11.9	13.9	11.7	9.4	7.8	4.4	7.1
No. of days with ground frost	5	6	12	18	18	16	9	1	1	0	0	4	4	17	111
RADIATION															
Mean daily radiation (MJ m ⁻² day ⁻¹)	5.8	2.4	1.7	3.4	6.0	14.4	11.1	16.0	15.8	15.3	7.7	5.3	2.3	1.6	8.4
WIND (km day ⁻¹)	288	184	318	288	258	209	—	—	146	152	217	260	270	215	238
Wind run at 2 m	51	52	40	48	60	22	62	35	53	33	89	63	64	57	688
WATER (mm month ⁻¹)	-9	-10	-22	+5	+13	-18	+20	-10	+3	-8	+23	+13	-5	+2	+83
Rainfall (5 inch gauge)	15	9	17	13	14	5	13	7	12	5	21	18	16	19	163
Difference from average	57	20	—	—	—	85	69	98	107	100	75	36	16	10	—
Rain days	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Open water (tank) evaporation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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 different periods: air temperatures 1969-83; rain 1968-83.