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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 |
| TEMPERATURE (°C) | | | | | | | | | | | | | | | | |
| 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 |
| RADIATION | | | | | | | | | | | | | | | | |
| 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 ⁻² day ⁻¹) | 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 |
| WIND (km day⁻¹) | | | | | | | | | | | | | | | | |
| Wind run at 2 m | 162 | 242 | 244 | 355 | 314 | 262 | 250 | 190 | 190 | 137 | 166 | 226 | 242 | 180 | 247 | 230 |
| WATER (mm per month) | | | | | | | | | | | | | | | | |
| 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 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TEMPERATURE (°C) | | | | | | | | | | | | | | | | | |
| 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 |
| RADIATION | | | | | | | | | | | | | | | | | |
| 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 ⁻² day ⁻¹) | 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 | — |
| WIND (km day⁻¹) | | | | | | | | | | | | | | | | | |
| Wind run at 2 m | 179 | 269 | 268 | 268 | 389 | 223 | 262 | 203 | 164 | 182 | 114 | 139 | 237 | 275 | 137 | 279 | 217 |
| WATER (mm per month) | | | | | | | | | | | | | | | | | |
| 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 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| TEMPERATURE (°C) | | | | | | | | | | | | | | | |
| 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 |
| RADIATION | | | | | | | | | | | | | | | |
| 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 ⁻² day ⁻¹) | 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 ⁻² day ⁻¹) | 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⁻¹) | | | | | | | | | | | | | | | |
| Wind run at 2 m | 141 | 246 | 352 | 243 | 250 | 200 | 172 | 171 | 127 | 142 | 229 | 240 | 145 | 257 | 211 |
| WATER (mm per month) | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | Year | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | |
| TEMPERATURE (°C) | | | | | | | | | | | | | | | | |
| Mean screen maximum | 14.0 | 11.3 | 7.1 | 9.5 | 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 | +3.1 | -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 | 3.2 | 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 | +1.6 | -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 | 1.2 | 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 | 4.4 | 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 | 9 | 21 | 15 | 13 | 5 | 0 | 0 | 0 | 0 | 5 | 6 | 12 | 86 |
| RADIATION | | | | | | | | | | | | | | | | |
| Mean daily radiation (MJ m ⁻² day ⁻¹) | 4.3 | 2.4 | 1.7 | 2.0 | 4.9 | 6.9 | 11.0 | 12.6 | 17.6 | 18.8 | 16.9 | 8.2 | 5.8 | 2.4 | 1.7 | 9.1 |
| WIND (km day⁻¹) | | | | | | | | | | | | | | | | |
| Wind run at 2 m | 229 | 382 | 283 | 402 | 301 | 302 | 261 | 224 | 176 | 142 | 173 | 278 | 288 | 184 | 318 | 254 |
| WATER (mm month⁻¹) | | | | | | | | | | | | | | | | |
| Rainfall (5 inch gauge) | 124 | 70 | 51 | 57 | 36 | 34 | 80 | 83 | 26 | 37 | 9 | 74 | 51 | 52 | 40 | 579 |
| Difference from average | +75 | +10 | -9 | +4 | -5 | -17 | +42 | +45 | -20 | -8 | -32 | +7 | -9 | -10 | -22 | -26 |
| Rain days | 24 | 17 | 13 | 12 | 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.