

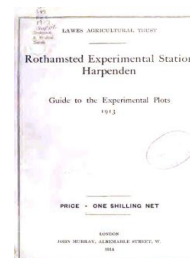
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ROTHAMSTED  
RESEARCH

# Guide to the Experimental Plots - 1913

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## Meteorological Observations

### Rothamsted Research

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## METEOROLOGICAL OBSERVATIONS

The rainfall has been measured at Rothamsted since February 1853 in a 5-inch funnel gauge, and in a rectangular gauge (7 feet 3·12 inches by 6 feet), having an area of one-thousandth acre.

In addition to these gauges, an 8-inch Board of Trade gauge has been employed since January 1881. The ground on which the gauges are situated is 420 feet above sea-level.

The amount of water percolating through bare soil has been measured since 1870 by means of three drain-gauges, each having an area of one-thousandth acre. These were constructed by undermining the soil at the desired depths—20, 40, and 60 inches respectively—and inserting perforated iron plates to support the soil. When this was completed, trenches were cut round the blocks of soil, and these were then isolated by means of brick and cement walls. The external soil was then returned. The percolating water falls on to zinc funnels, from which it passes to the measuring cylinders.

Barometric and temperature records have been kept since 1873, and since July 1891 daily observations of the bright sunshine have been made by means of a Campbell-Stokes recorder. More recently a self-recording soil thermometer has been set up.

The average yearly rainfall as measured at Rothamsted during the sixty years, 1853-1912, is 28·34 inches.

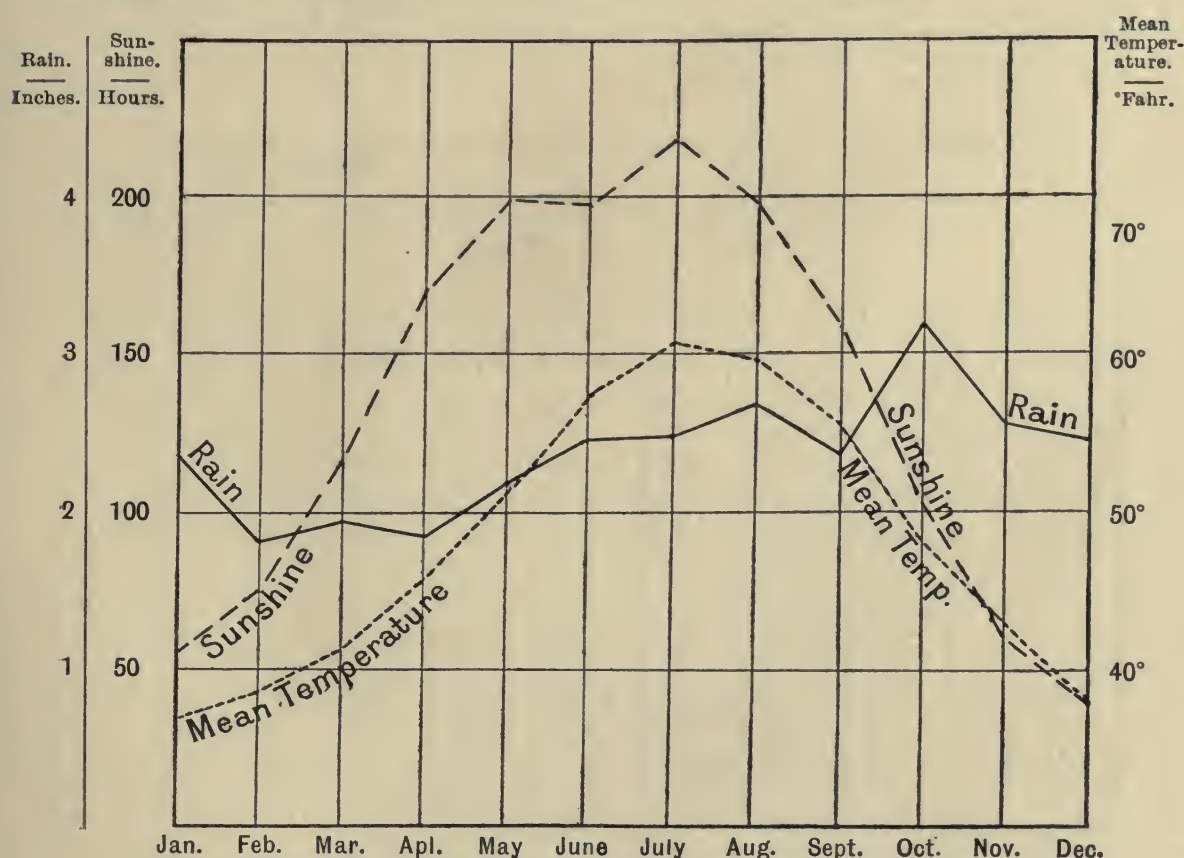


FIG. 5.—Rainfall: Average of 60 years (1853-1912).  
Sunshine: Average of 20 years (1892, 1893, and 1895-1912).  
Mean Temperature: Average of 35 years (1878-1912).

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## METEOROLOGICAL OBSERVATIONS

TABLE VIII.—*Meteorological Summary.*

|                 | Rainfall.                         |             |              | Bright Sunshine.                                  |              |                                 |              | Temperature.                      |               |                                  |
|-----------------|-----------------------------------|-------------|--------------|---------------------------------------------------|--------------|---------------------------------|--------------|-----------------------------------|---------------|----------------------------------|
|                 | Average, 60 years<br>(1853-1912). |             |              | Average, 20 years<br>(1892, 1893, and 1895-1912). |              |                                 |              | Average, 35 years<br>(1878-1912). |               |                                  |
|                 | Total<br>Fall.                    | Rainy Days. |              | Total.                                            | Per<br>cent. | Days with 0·1<br>hour, or more. |              | Means.                            |               | Min.<br>and<br>Max.<br>combined. |
|                 |                                   | Actual.     | Per<br>cent. |                                                   |              | Actual.                         | Per<br>cent. | Mini-<br>mum.                     | Maxi-<br>mum. |                                  |
|                 | Inches.                           | No.         |              | Hours.                                            |              | No.                             |              | °F.                               | °F.           | °F.                              |
| January . . .   | 2·34                              | 16          | 52           | 55·2                                              | 21           | 17                              | 55           | 31·7                              | 42·0          | 36·9                             |
| February . . .  | 1·81                              | 14          | 48           | 71·1                                              | 26           | 19                              | 68           | 32·6                              | 44·1          | 38·4                             |
| March . . .     | 1·92                              | 14          | 45           | 115·9                                             | 31           | 26                              | 84           | 33·7                              | 48·3          | 41·0                             |
| April . . .     | 1·84                              | 13          | 43           | 170·9                                             | 41           | 27                              | 91           | 37·0                              | 54·2          | 45·6                             |
| May . . .       | 2·19                              | 13          | 42           | 199·6                                             | 42           | 29                              | 93           | 42·5                              | 60·6          | 51·6                             |
| June . . .      | 2·45                              | 12          | 41           | 197·8                                             | 41           | 27                              | 91           | 48·4                              | 66·2          | 57·3                             |
| July . . .      | 2·50                              | 13          | 43           | 217·9                                             | 45           | 30                              | 96           | 51·8                              | 69·8          | 60·8                             |
| August . . .    | 2·69                              | 14          | 45           | 198·6                                             | 44           | 30                              | 95           | 51·3                              | 68·5          | 59·9                             |
| September . . . | 2·37                              | 13          | 44           | 157·3                                             | 42           | 27                              | 92           | 47·4                              | 63·9          | 55·7                             |
| October . . .   | 3·18                              | 18          | 57           | 104·1                                             | 32           | 25                              | 80           | 41·5                              | 55·3          | 48·4                             |
| November . . .  | 2·58                              | 16          | 55           | 61·1                                              | 23           | 19                              | 62           | 36·5                              | 48·2          | 42·4                             |
| December . . .  | 2·47                              | 17          | 54           | 42·5                                              | 18           | 16                              | 51           | 33·0                              | 43·5          | 38·3                             |
| Whole year      | 28·34                             | 173         | 47           | 1592·0                                            | 35           | 292                             | 80           | 40·6                              | 55·4          | 48·0                             |

TABLE IX.—*Rainfall and Drainage, etc., at Rothamsted, 1912.*

|               | Rain.                      |                          |                             | Drainage.                |                          |                          | Bright<br>Sunshine. | Temperature. |      |
|---------------|----------------------------|--------------------------|-----------------------------|--------------------------|--------------------------|--------------------------|---------------------|--------------|------|
|               | Total Fall.                |                          | Number<br>of Rainy<br>Days. | Soil<br>20 ins.<br>deep. | Soil<br>40 ins.<br>deep. | Soil<br>60 ins.<br>deep. |                     | Max.         | Min. |
|               | 5-inch<br>Funnel<br>Gauge. | 1000th<br>Acre<br>Gauge. |                             |                          |                          |                          |                     |              |      |
|               |                            |                          | Inches.                     |                          |                          |                          |                     |              |      |
| January .     | 3·738                      | 3·886                    | 18                          | 3·684                    | 3·636                    | 3·582                    | 41·2                | 43·0         | 33·4 |
| February .    | 2·008                      | 2·210                    | 17                          | 1·825                    | 1·875                    | 1·854                    | 39·2                | 46·9         | 35·4 |
| March .       | 4·141                      | 4·288                    | 21                          | 3·423                    | 3·440                    | 3·357                    | 89·4                | 51·0         | 39·0 |
| April .       | 0·131                      | 0·166                    | 2                           | 0·003                    | 0·035                    | 0·038                    | 239·5               | 58·4         | 36·8 |
| May .         | 1·415                      | 1·474                    | 12                          | 0·007                    | 0·017                    | 0·034                    | 177·0               | 64·7         | 45·2 |
| June .        | 3·139                      | 3·284                    | 16                          | 0·514                    | 0·547                    | 0·508                    | 194·1               | 65·8         | 49·0 |
| July .        | 3·225                      | 3·354                    | 14                          | 1·134                    | 1·174                    | 1·079                    | 151·0               | 70·4         | 53·4 |
| August .      | 6·277                      | 6·528                    | 27                          | 4·165                    | 4·112                    | 4·001                    | 98·9                | 62·4         | 49·0 |
| September     | 2·528                      | 2·718                    | 10                          | 1·639                    | 1·523                    | 1·500                    | 101·5               | 59·4         | 44·8 |
| October .     | 2·632                      | 2·744                    | 14                          | 1·895                    | 1·866                    | 1·867                    | 135·4               | 56·1         | 36·9 |
| November      | 2·407                      | 2·517                    | 14                          | 1·936                    | 1·988                    | 1·961                    | 39·9                | 48·1         | 36·5 |
| December      | 3·263                      | 3·423                    | 23                          | 3·109                    | 3·046                    | 3·044                    | 30·4                | 49·9         | 37·9 |
| Total or Mean | 34·904                     | 36·592                   | 188                         | 23·334                   | 23·259                   | 22·825                   | 1337·5              | 56·3         | 41·4 |