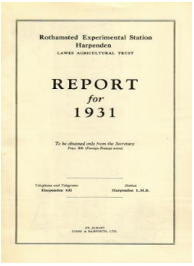
This work is licensed under a Creative Commons Attribution 4.0 International License.

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readible, or you suspect there are some problems, please let us know and we will correct that.

ROTHAMSTED RESEARCH

Report for 1931

Full Table of Content



Accuracy of Field Experiments

Rothamsted Research

Rothamsted Research (1932) *Accuracy of Field Experiments ;* Report For 1931, pp 59 - 61 **- DOI: https://doi.org/10.23637/ERADOC-1-65**

This work is licensed under a Creative Commons Attribution 4.0 International License.

data, until the influence of varying root number has been separately assessed.

The year has seen considerable progress in theory, especially in regard to the analysis of covariance, as well as in the practice of its various applications.

THE ACCURACY OF THE FIELD EXPERIMENTS

The standard errors per plot of experiments carried out in 1931 are given in Tables X, XI and XII together with an average of those obtained in previous years. It will be seen that these errors are of the same magnitude as in previous years, and that there is little difference in the accuracy obtained at Rothamsted and the outside centres.

TABLE X.

STANDARD ERRORS PER PLOT, 1931.

Rothamsted.

Weight per acre.

	Potatoes. tons.	*Sugar Beet* Roots. tons.	Tops. tons.	*Barley.* Grain. cwt.	Straw. cwt.	*Wheat.* Grain. cwt.	Straw. cwt.
Latin Squares—							
Average 1925-1930 ..	0.4	0.6	0.7	1.3	1.9	—	—
1931	—	—	—	2.0	2.1	1.5	3.1
Randomised Blocks—							
Average 1925-1930 ..	0.7	0.3†	1.2†	1.5	1.9	2.9	4.3
1931	1.2	0.5	1.0	—	—	1.8 1.4	4.2 3.2

†Single figure.

	Oats. Grain. cwt.	Straw. cwt.	*Forage.* Hay. cwt.	Grain. cwt.	Straw. cwt.	*Hay.* cwt.
Latin Squares—						
Average 1925-1930	—	—	—	—	—	—
1931	—	—	4.2	2.4	3.6	3.1
Randomised Blocks—						
Average 1925-1930	—	—	—	—	—	—
1931	2.4	2.6	1.4	—	—	—

Per cent of Yield.

	Potatoes.	*Sugar Beet.* Roots.	Tops.	*Barley.* Grain.	Straw.	*Wheat.* Grain.	Straw.
Latin Squares—							
Average 1925-1930	4.4	5.7	5.6	5.6	7.4	—	—
1931 ..	—	—	—	12.4	9.4	8.3	8.7
Randomised Blocks							
Average 1925–1930	8.4	10.2*	10.9*	9.1	7.2	14.0	10.8
1931 ..	10.0	4.1	6.4	—	—	8.3 8.9	9.5 8.2

*Single figure.

https://doi.org/10.23637/ERADOC-1-65

This work is licensed under a Creative Commons Attribution 4.0 International License.

	Oats.		Forage.			Hay.
	Grain.	Straw.	Hay.	Grain.	Straw.	
Latin Squares—						
Average 1925-1930	—	—	—	—	—	—
1931	—	—	8.2	12.2	7.8	7.9
Randomised Blocks—						
Average 1925–1930	—	—	—	—	—	—
1931	12.7	10.2	16.1	—	—	—

TABLE XI.

Woburn.

Weight per acre.

	Potatoes.	Sugar Beet.	
	tons.	Roots. tons.	Tops. tons.
Latin Squares—			
Average 1926-1930	0.5	1.3	1.1
1931	—	1.0	1.2
Randomised Blocks—			
Average 1926-1930	0.7	1.0	1.5
1931	—	1.3	2.6

Per cent. of Yield.

	Potatoes.	Sugar Beet.	
		Roots.	Tops.
Latin Squares—			
Average 1926–1930	5.1	9.1	11.0
1931	—	8.4	7.3
Randomised Blocks—			
Average 1926–1930	8.7	12.5	19.1
1931	—	11.5	20.2

TABLE XII.

Average of Outside Centres.

Weight per acre.

	Potatoes. tons.	Sugar Beet. Roots. tons.	Sugar Beet. Tops. tons.	Swedes. Roots. tons.	Swedes. Tops. tons.	Barley. Grain. cwt.	Barley. Straw. cwt.	Hay. cwt.
Latin Squares—								
Average 1927-1930	0.6	0.6	0.8	—	—	1.5	1.4	2.1
1931 ..	0.6	0.6	1.1	1.7	0.2	—	—	3.6
Randomised Blocks								
Average 1927-1930	1.0	0.8	1.3	—	—	—	—	—
1931 ..	0.8	0.7	2.0	—	—	—	—	4.9

https://doi.org/10.23637/ERADOC-1-65

This work is licensed under a Creative Commons Attribution 4.0 International License.

Per cent. of Yield.

	Potatoes.	*Sugar Beet.* Roots.	Tops.	*Swedes.* Roots.	Tops.	*Barley.* Grain.	Straw	*Hay*
Latin Squares—								
Average 1927–1930	5.2	6.4	6.7	—	—	7.8	8.3	8.5
1931 ..	6.6	5.3	8.4	5.6	5.6	—	—	7.7
Randomised Blocks—								
Average 1927–1930	9.0	7.4	8.2	—	—	—	—	—
1931 ..	10.2	5.8	10.3	—	—	—	—	10.9

FARM DIRECTOR'S REPORT, 1931

Weather. The general character of the weather is shown by the graph of deviations from average values (p. 62). The features of the year October, 1930—September, 1931 were the wet November and December, the mild winter and the cool, moist summer with a wet harvest. The mean temperatures for June, October and November were respectively 1°F., 2.1°F. and 0.3°F. above the 52 year average, but for all the other months it was under the average, the total deficit for the year being 7.1°F. The only really hot weather occurred between June 20th and July 10th.

There was very little frost apart from a fortnight of quite sharp weather at the end of February and beginning of March. This, along with occasional night frosts during the winter, brought the ploughed land to a good powdery tilth by the spring.

Every month from April to September experienced fewer hours of sunshine than the 38 year mean, the deficit totalling altogether 191.6 hours. October had 28 hours and March 38.7 hours above the mean.

5.1 inches of rain in November made the autumn very wet, but luckily this did not affect any of the farm work. July and August together had 2.1 inches rainfall above the 78 years average, but it was not the amount that made the bad harvest so much as the numerous small showers. The total for the year was 29.9 inches, being 1.15 inches above the mean.

Although the past season was wet and cool, yet October, 1930, and March, 1931, were unusually dry. In October, only 1.24 inches fell, against the average of 3.11 inches, and the drainage through 60 inches of bare soil was 0.211 inches as against the average of 1.63 inches for that month. In March the total rainfall was 0.09 inches, and measurable rain fell on two days only. The rainfall was the lowest shown in our 78 years records for March, except for March, 1929 (0.065 ins.), the lowest recorded figure for any month being 0.063 ins. in December, 1864.

Cropping, 1930-1932. (For dates, yield and other information, see pp. 109-114.)

Rye was sown in Long Hoos, Sections I, II and III, in September, 1930. This was fed off to sheep in March, 1931, and again in May. Sections I and III (old division) had previously been dunged just before sowing at the rate of 14 tons per acre. Section II had carried mustard folded off with sheep in August, 1930

Dung was carted out to Little Hoos in September, 1930, at the

https://doi.org/10.23637/ERADOC-1-65