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## Report for 1931

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## Errata for Rothamsted Report for 1930

### Rothamsted Research

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## BARLEY—HOOS FIELD, 1930

Corrected results to replace Table on p. 124 of 1930 Report.

As in 1929 the rows were widely spaced to facilitate weed control. In 1930, however, the field was sown longitudinally with a row spacing of 18 inches, instead of the 24 inch spacing adopted in 1929. The two varieties were sown by the half-drill strip method, and to equalise the area certain rows at the sides of each plot were not included in the weighed produce. In computing the yields per acre the whole area harvested experimentally was unfortunately taken as being the area occupied by each variety separately; the yields per acre published in the 1930 Report were therefore half what they should have been.

Plot	Manuring (Amounts stated are per acre)	Total Grain per acre		76 Years' Average 1852-1928 Dressed Grain per acre.	Total Straw per acre.		76 Years Average 1852-1928 Total Straw per acre.
		Plumage Archer	Spratt Archer		Plumage Archer	Spratt Archer	
		cwt.	cwt.	bush.	cwt.	cwt.	cwt.†
1O	Unmanured .. .. .	0.7	0.7	13.4	1.9	1.6	7.8
2O	Superphosphate only (3½ cwt.) ..	9.8	9.1	19.0	8.2	7.6	9.8
3O	Alkali Salts only (200 lb. Sulphate of Potash; 100 lb. Sulphate of Soda; 100 lb. Sulphate of Mag- nesia) .. .. .	3.6	3.0	14.3	5.6	4.3	8.7
4O	Complete Minerals; as 3O with Superphosphate (3½ cwt.) ..	7.2	9.5	19.0	6.7	8.1	11.2
5O	Potash (200 lb.) and Superphos- phate (3½ cwt.) .. .. .	8.4	8.3	15.5	8.3	9.2	9.4
1A	Ammonium Salts only (206 lb. Sul- phate of Ammonia) .. .. .	2.9	4.1	23.7	4.3	6.6	13.7
2A	Superphosphate and Amm. Salts ..	18.0	18.9	35.8	17.7	16.8	20.4
3A	Alkali Salts and Amm. Salts ..	7.8	5.3	25.8	11.1	8.2	16.0
4A	Complete Minerals and Amm. Salts	14.8	17.7	39.3	16.9	17.3	23.6
5A	Potash, Super. and Amm. Salts ..	13.3	12.1	33.8	19.4	17.3	21.7
1AA	Nitrate of Soda only (275 lb.) ..	4.7	4.8	24.3*	8.6	8.3	15.4*
2AA	Superphosphate and Nitrate of Soda	18.1	19.0	38.8*	18.6	18.8	23.1*
3AA	Alkali Salts and Nitrate of Soda ..	8.0	8.0	24.5*	11.0	10.9	16.6*
4AA	Complete Minerals and Nitrate of Soda .. .. .	17.0	17.4	37.7*	18.7	16.9	23.6*
1AAS	As Plot 1AA and Silicate of Soda (400 lb.) .. .. .	6.9	11.0	30.2*	7.6	13.4	18.2*
2AAS	As Plot 2AA and Silicate of Soda (400 lb.) .. .. .	20.5	21.4	39.7*	21.1	22.4	23.9*
3AAS	As Plot 3AA and Silicate of Soda (400 lb.) .. .. .	12.8	13.5	31.2*	14.3	14.2	19.9*
4AAS	As Plot 4AA and Silicate of Soda (400 lb.) .. .. .	19.2	21.0	39.9*	20.7	20.8	25.4*
1C	Rape Cake only (1,000 lb.) ..	11.9	12.5	35.5	13.3	12.9	20.6
2C	Superphosphate and Rape Cake ..	18.0	18.1	38.1	21.3	19.8	22.0
3C	Alkali Salts and Rape Cake ..	14.6	16.4	33.7	19.1	18.6	20.4
4C	Complete Minerals and Rape Cake	16.6	17.8	37.5	19.9	20.2	22.6
7-1	Unmanured (after dung (14 tons) for 20 years (1852-71) ..	7.9	9.8	22.5‡	8.8	10.1	13.5‡
7-2	Farmyard Manure (14 tons) ..	15.3	16.3	44.6	18.2	19.9	28.1
6-1	Unmanured since 1852 .. .. .	3.3	1.9	14.7	5.4	4.6	8.6
6-2	Ashes from Laboratory furnace ..	4.6	5.7	15.7	5.4	6.6	9.3
1N	Nitrate of Soda only (275 lb.) ..	4.2	3.4	28.7§	5.2	4.8	17.8§
2N	Nitrate of Soda only (275 lb.) ..	13.5	10.3	31.7§§	17.5	14.4	20.0§§

|| 1 cwt = 2.15 bushels. 1912, all plots were fallowed.  
 † Total straw includes straw, cavings and chaff.  
 \* 60 years, 1868-1928. ‡ 56 years, 1872-1928. § 75 years, 1853-1928. §§ 69 years, 1859-1928.



## FORAGE CROPS

### Correction to 1930 Experiment. (See p. 156.)

The conclusions drawn from this experiment stand without alteration, with the exception that the response to potash for grain and straw should have been stated to be significant on the oats mixtures as well as the barley mixtures, this response not being in fact significantly different for the two cereals. In the table showing Effect of Potash and Superphosphate (p. 144) the yields of the different mixtures are based on different numbers of plots, and are not equalised for rows and columns.

There is, also, an arithmetical error in the same table (Effect of Potash and Superphosphate). The yields for straw, barley with peas, without and with potash should read 26.2 and 28.8 respectively, instead of 20.9 and 34.1. The corresponding means of all mixtures now become 27.8 and 29.8 instead of 26.5 and 31.2.

The systematic arrangement of the strips of vetches and peas, and oats and barley, not commented on in the 1930 report, was an error in sowing. In the original design the layout consisted of *randomised* pairs of strips, after the manner of the 1929 experiment on sugar beet.

### Forage Crop: Comparison of Oats and Wheat, Vetches and Peas. Basal Crop of Beans.

Effect of Sulphate of Ammonia and Nitrate of Soda.

Effect of Muriate of Potash and Superphosphate.

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	N.E.												
	O	W	W	O	O	W	O	W	W	O	W	O	
I.	4	8	6	2	10	7	5	11	1	3	12	9	V
II.	11	3	7	5	9	2	4	8	6	12	1	10	P
III.	3	7	1	12	8	10	6	4	11	5	9	2	P
IV.	7	10	4	11	6	9	2	3	5	1	8	12	V
V.	12	5	8	6	3	1	9	10	4	11	2	7	V
VI.	6	1	10	9	4	3	8	5	12	2	7	11	P
VII.	5	6	9	4	12	11	10	1	2	7	3	8	V
VIII.	1	4	5	3	7	12	11	2	8	9	10	6	P
IX.	10	11	2	7	5	8	12	9	3	4	6	1	P
X.	9	2	12	1	11	6	3	7	10	8	4	5	V
XI.	8	9	3	10	2	5	1	12	7	6	11	4	V
XII.	2	12	11	8	1	4	7	6	9	10	5	3	P

#### Key to Treatments.

1	2	3	4	5	6	7	8	9	10	11	12
—	—	—	—	S/A	S/A	S/A	S/A	N/S	N/S	N/S	N/S
—	K	—	K	—	K	—	K	—	K	—	K
—	—	P	P	—	—	P	P	—	—	P	P

SYSTEM OF REPLICATION: 12x12 Latin Square, with randomised pairs of rows and columns allotted to different seedings.

AREA OF EACH PLOT: 1/50th acre. Half cut for hay, half harvested.

Manurial Treatments: No Nitrogen *v.* Sulphate of Ammonia (S/A) at the rate of 0.2 cwt. N per acre *v.* Nitrate of Soda (N/S) at the rate of 0.2 cwt. N per acre. Potash *v.* Muriate of Potash (K) at the rate of 0.5 cwt. K<sub>2</sub>O per acre. No Phosphate *v.* Superphosphate (P) at the rate of 0.5 cwt. P<sub>2</sub>O<sub>5</sub> per acre.

O=Oats at the rate of 3 bushels per acre.

W=Wheat at the rate of 2 bushels per acre.

V=Vetches at the rate of 1 bushel per acre.

P=Peas at the rate of 1 bushel per acre.

Basal Crop: Beans at the rate of 1 bushel per acre.

All plots received Adco at the rate of 14 tons (approx.) per acre (September 12th).

Manures sown: March 24th-25th.

Beans, peas and vetches sown: October 9th-10th.

Other crops: October 11th.

Peas redrilled: Mar. 25th.

Half-plots cut for hay: July 9th-14th.

Remainder harvested: August 17th-21st.

Previous crop: Winter Oats.



## SUGAR BEET

### Correction to 1929 Experiment.

A further examination of this experiment revealed certain defects which vitiate the original analysis. A new analysis has now been made. The principal correction is that the standard errors given in the original summary of results (1929 Report, p. 103-5) are considerably too small.

No standard errors applicable for all comparisons can be assigned to the tables (a), of separate treatments. The standard errors of table (b), comparing Sulphate of Ammonia, Nitrate of Soda and no nitrogen, should be :

	Roots.	Tops.	Sugar Percentage.
Tons per acre .. .. .	0.093	0.070	
Per cent. .. .. .	1.25	1.30	0.068

and the summary under (b) stands without correction.

No response to or interaction with phosphate is significant. Table (c) should therefore read as follows :

### (c) Effect of Salt and Chloride of Potash, averaging for Variety, Phosphate and Nitrogen.

Average yield— tons per acre.	Roots.			Tops.		
	Without Mur./Pot.	With Mur./Pot.	Mean.	Without Mur./Pot.	With Mur./Pot.	Mean.
Without Salt .. .. .	7.28	7.38	7.33	5.13	5.35	5.24
With Salt .. .. .	7.54	7.52	7.53	5.56	5.60	5.58
Mean .. .. .	7.41	7.45	7.43	5.34	5.48	5.41
Standard Error ..	0.107			0.081		

The summary should read :

The increase of yield due to salt is barely significant in the case of the roots, but is definitely significant in the case of the tops. Muriate of Potash shows no significant effects.

The standard errors given in Table (d) do not apply to the comparisons shown, and no effect of phosphate or variety can claim to be clearly significant. The same applies even more strongly to the possible interactions discussed at the foot of p. 105 ; none of these seem to produce effects of any importance.