

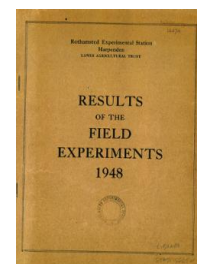
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Yields of the Field Experiments 1948

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48/BA/3 Four-course Rotation - Rothamsted

Rothamsted Research

Rothamsted Research (1949) *48/BA/3 Four-course Rotation - Rothamsted* ; Yields Of The Field Experiments 1948, pp 20 - 23

48/Ba/3.1

FOUR COURSE ROTATION EXPERIMENT

Hoosfield, 1948

Residual values of organic and phosphatic fertilizers.

The scheme of the experiment is as given in the 1932 Report, pp.127-8, with the following alterations:-

1. From 1935 onwards, clover ryegrass ley has been replaced by ryegrass alone, sown in autumn after ploughing barley stubble, with fertilizers applied as on wheat.
2. From 1935 onwards, lime was applied every year at the rate of 10 cwt. per acre to the potato break after the crop had been lifted.
3. Each plot of the potato break has been split from 1942 onwards, a random half of each plot receiving an additional 2 cwt. per acre sulphate of ammonia.
4. Majestic potato seed has been used since 1942 in place of Ally.

Manures applied 1947-8

RESULTS OF FIELD EXPERIMENTS - 1948

ERRATUM

48/Ba/3.1, Table of manures applied 1947-8 should read:-

Manures applied 1947-8

Treatment	Organic fertilizers (cwt. per acre)				Additional artificial fertilizers (cwt. per acre)		
	Organic matter	N	P ₂ O ₅	K ₂ O	N as Sulph. of amm.	P ₂ O ₅ as Super	K ₂ O as mur. of potash
Dung	50 (as FYM)	1.404	0.709	2.230	0.396	0.491	0.770
Adco	50 (as Adco)	0.980	0.510	0.419	0.820	0.690	2.581
Straw	77 (as Straw)	1.392	0.104	0.627	0.408	1.096	2.373
Super			None		0.36	1.2	0.6
Rock phosphate			None		0.36	1.2*	0.6

* As mineral phosphate

48/Ba/3.2

Cultivations, etc.

Potatoes, Series I.

Ploughed: Sept. 8. Dung, Adco with accompanying artificials applied; straw with first dressing of artificials applied; ploughed in: Nov. 20, 21. Second dressing of artificials applied to straw plot: Jan. 22. Ploughed, harrowed, rolled: Mar. 16-23. Ridged: Mar. 30. Artificials, including third dressing to straw plot applied in the ridges; Apr. 2. Potatoes planted and covered in: Apr. 7. Ridges rolled: Apr. 10. Ridges harrowed: May 10. Grubbed: June 9-16. Weeded: June 11-13. Earthed up: June 26. Hoed: June 30. Weeded: July 29. Sprayed with "Perinox": Aug. 9. Sprayed to kill haulm: Sept. 13. Lifted: Sept. 27, 28. Variety: Majestic. Previous crop: Wheat.

Barley, Series II

Applied dung, Adco and supplementary artificials: Nov. 12. Straw with first dressing of artificials applied; ploughed: Nov. 12, 13. Ground chalk (22 cwt. per acre) applied: Nov. 13. Second dressing of artificials applied to straw plots: Jan. 22. Springtine harrowed: Mar. 1. Artificials applied, including third dressing to straw plots: Mar. 4. Harrowed, seed drilled and harrowed in: Mar. 5. Ring rolled: Mar. 10. Hand weeded to clear thistles: May 28. Hoed: June 4. Harvested: Aug. 19. Variety: Plumage Archer. Previous crop: Potatoes.
Note: Ground chalk was used in place of ground lime.

Wheat, Series III

Applied dung and Adco with supplementary artificials, applied straw with first dressing of artificials, ploughed: Sept. 15-24. Flat rolled and harrowed: Sept. 25. Artificials applied excluding special dressing straw plots and sulphate of ammonia: Sept. 27. Harrowed: Oct. 2. Springtine harrowed, harrowed, seed (Squareheads Master 13/4) drilled and harrowed in: Oct. 3. Resown with Squareheads Master (13/4) as plant had failed, second dressing of artificials applied to straw

48/Ba/3.3

plot, harrowed in: Nov.29. Plant failed over winter, decided to resow, springtime harrowed, harrowed: Mar.8. Redrilled with Atlo, applied sulphate of ammonia and third dressing of artificials to straw plots, harrowed in: Mar.9. Ring rolled: Mar.10. Weeded to clear thistles: May 28. Hoed: June 4. Harvested: Aug.28. Variety: Atle. Previous crop: Ryegrass.

Ryegrass, Series IV.

Dung, Adco with accompanying artificials applied: Sept.24. Straw with first dressing of artificials applied, ploughed: Sept.23-25. Harrowed and rolled: Sept.26. Autumn artificials applied not including sulphate of ammonia: Sept.27. Harrowed twice, ring rolled: Nov.10. Seed sown and harrowed in: Nov.13. Second dressing of artificials applied to straw plots: Nov.29. Applied sulphate of ammonia, third dressing of artificials applied to straw plot: Mar.17. Rolled: Mar.20. Hand weeded to clear thistles: June 12. Cut: June 15. Variety: Western Worths. Previous crop: Barley.

FOUR COURSE ROTATION
Summary of Results 1948

Manure	Year of Cycle	Wheat		Barley		Ryegrass cwt per acre Dry matter	Total tubers tons per acre		Resp. to N	Percentage Ware		Resp. to N
		Grain	Straw	Grain	Straw		Additional N Without	Additional N With		Mean		
Manure as F.Y.M.	I	16.3	37.6	32.1	46.3	6.5	5.94	8.70	2.76	97.1	97.6	0.5
	II	9.7	29.5	27.1	28.1	5.7	7.89	10.09	2.20	97.2	97.7	0.5
	III	9.9	28.0	22.9	27.4	5.6	7.75	9.09	1.33	97.3	97.7	0.4
	IV	8.6	25.7	24.0	31.7	4.9	8.05	9.61	1.56	97.9	98.0	0.1
	V	10.4	29.2	21.4	29.0	4.4	7.62	9.42	1.80	97.2	98.4	1.2
Manure as A.D.C.	I	20.2	47.8	35.7	26.6	16.7	9.09	10.72	1.63	98.1	98.4	0.3
	II	10.7	32.5	24.4	30.4	3.7	6.37	9.69	3.32	97.9	98.8	0.9
	III	8.9	23.0	25.1	30.4	3.5	6.04	9.71	3.67	97.4	98.2	0.8
	IV	9.0	21.2	23.6	30.6	4.4	7.94	9.46	1.52	98.1	98.2	0.1
	V	9.7	24.6	22.6	31.9	2.8	5.85	9.28	3.43	97.0	98.3	1.3
Manure as Straw	I	21.6	47.8	36.5	47.1	19.2	10.19	12.30	2.11	97.6	98.1	0.5
	II	11.0	33.0	28.3	33.6	6.6	6.54	8.55	2.01	96.1	97.3	1.2
	III	13.1	32.0	23.9	25.0	6.5	6.79	10.56	3.77	97.2	98.2	1.0
	IV	10.6	29.0	26.4	32.0	4.8	7.39	9.67	2.28	97.2	98.4	1.2
	V	9.7	25.8	24.7	28.7	2.9	8.29	10.65	2.56	97.5	97.6	0.1
Super phos- phate	I	15.1	32.4	32.1	34.2	9.3	10.69	11.65	0.96	97.5	97.2	-0.3
	II	14.1	32.0	27.6	32.5	5.5	9.20	9.81	0.61	98.1	98.8	0.7
	III	12.7	30.4	30.2	33.0	9.4	7.69	11.38	3.49	98.5	98.8	0.3
	IV	11.6	23.8	27.5	32.1	6.1	7.59	8.59	0.80	97.7	98.0	0.3
	V	11.7	28.4	29.0	31.8	2.9	7.32	8.90	1.58	97.6	98.7	1.1
Rock phos- phate	I	16.6	33.5	26.8	33.8	4.6	9.25	9.95	0.70	97.3	98.1	0.8
	II	12.1	27.1	26.2	31.2	4.0	7.03	7.82	0.79	97.3	97.8	0.5
	III	11.9	27.8	28.4	31.9	4.0	6.13	7.80	1.67	96.6	98.0	1.4
	IV	13.5	26.2	27.5	35.2	2.4	6.31	5.82	-0.49	97.2	95.9	-1.3
	V	10.3	21.8	29.0	45.6	4.6	6.74	6.22	-0.52	97.7	97.5	-0.2

48/Ba/3.4