

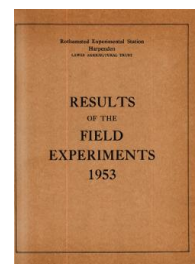
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1953

[Full Table of Content](#)



53/BA/2 Four-course Rotation - Rothamsted

Rothamsted Research

Rothamsted Research (1954) *53/BA/2 Four-course Rotation - Rothamsted* ; Yields Of The Field Experiments 1953, pp 20 - 22 - DOI: <https://doi.org/10.23637/ERADOC-1-173>

53/Ba/2.1

FOUR COURSE ROTATION EXPERIMENT

The 24th year

Direct and residual effects of organic manures and phosphatic fertilizers - Hoosfield 1953.

For details of treatments and rotation see "Results of the Field Experiments 1939-47" Vol. I, Section Ba/3.

Area of each plot: Potatoes (whole plot): 0.0242 acre. Barley and ryegrass: 0.0244 acre. Wheat: 0.0233 acre.

Manures (cwt per acre) applied 1952-53

Treatment	Organic manures and phosphates				Supplementary fertilizers		
	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	2.131*	0.820	1.066	-	0.380	1.934
Adco	50	1.012	0.600	0.750	0.788	0.600	2.250
Straw	112	0.496	0.108	0.312	1.304	1.092	2.688
Super			1.2		0.36 †		0.6 †
Rock phosphate			1.2		0.36 †		0.6 †

*In excess of the standard rate (1.800 cwt N).

†Yearly dressings totalling to the standard rate in the 5 year period.

Cultivations, etc.:

Potatoes.

Ploughed: Sept 1, 1952. Supplementary fertilizers to dung and adco plots applied: Jan 20, 1953. Dung and adco applied: Jan 21. Straw and first dressing to straw plots applied, all plots ploughed: Jan 26. Ridged: Mar 31. Spring fertilizers, including second and third dressing to straw plots, and sulphate of ammonia to half plots, applied: Apr 1. Potatoes planted: Apr 2. Earthed up: June 27. Sprayed with copper fungicide 5½ lb per acre: July 28 and again Aug 8. Sprayed with sulphuric acid, 20% B.O.V.: Sept 26. Lifted: Oct 1. Variety: Majestic.

Barley.

Dung, adco and supplementary fertilizers and first dressing to straw plots applied: Jan 20, 1953. Straw applied, all plots ploughed: Jan 21. 19 cwt ground chalk per acre applied: Feb 25. Spring fertilizers and second and third dressing to straw plots applied: Feb 27. Seed drilled at 3 bushels per acre: Feb 28. Harvested: Aug 11. Variety: Plumage Archer.

53/Ba/2.2

Ryegrass.

Dung and adco applied: Sept 13, 1952. Straw applied, all plots ploughed: Sept 15. Supplementary fertilizers to dung and adco plots, first dressing to straw plots, autumn fertilizers applied and seed sown at 112 lb per acre: Sept 19. Second dressing to straw plots applied: Jan 23, 1953. Sulphate of ammonia and third dressing to straw plots applied: Apr 7. Harvested: June 25. Variety: Western Wolths.

Wheat.

Ploughed: Aug 7, 1952. Supplementary fertilizers to dung and adco plots and first dressing to straw plots applied: Sept 16. Dung, adco and straw applied, ploughed all plots: Sept 17. Autumn fertilizers applied: Oct 8. Seed drilled at 3 bushels per acre: Oct 27. Second dressing to straw plots applied: Jan 23, 1953. Sulphate of ammonia and third dressing to straw plots applied: Apr 22. Harvested: Aug 20. Variety: Squareheads Master 13/4.

Summary of Results

Manure +	Year of Cycle	Potatoes					Barley (at 85% D.M.)			Ryegrass		Wheat	
		Total tubers, tons		Resp. to Nitrogen		Percentage Ware		Grain Straw cwt per acre	Dry Matter cwt per acre	Grain Straw cwt per acre	Dry Matter cwt per acre	Grain Straw cwt per acre	Dry Matter cwt per acre
		Without	With	Without	With	Without	With						
Dung	I	8.33	10.40	9.36	+2.07	87.1	91.1	31.9	20.7	20.7	20.7	37.6	37.6
	II	7.23	8.90	8.06	+1.67	87.5	91.1	27.8	18.3	21.4	18.3	34.6	34.6
	III	8.03	5.77	6.90	-2.26	91.5	88.3	24.4	14.9	17.5	14.9	27.6	27.6
	IV	6.04	8.68	7.36	+2.64	87.6	88.7	21.9	12.3	17.7	12.3	28.6	28.6
	V	5.45	8.05	6.75	+2.60	81.2	82.6	23.7	11.9	17.7	11.9	26.1	26.1
Adco (Straw compost)	I	10.09	12.04	11.06	+1.95	81.1	93.1	28.1	34.1	29.6	34.1	52.0	52.0
	II	7.23	8.91	8.07	+1.68	84.4	83.4	26.4	15.7	15.8	15.7	22.6	22.6
	III	5.31	6.40	5.86	+1.09	84.2	86.2	21.7	12.5	15.9	12.5	21.8	21.8
	IV	6.17	7.40	6.78	+1.23	87.3	90.6	24.5	13.9	16.9	13.9	26.5	26.5
	V	5.86	7.70	6.78	+1.84	86.8	86.6	21.5	12.2	18.5	12.2	27.0	27.0
Straw	I	8.52	12.84	10.68	+4.32	89.6	93.4	26.0	59.7	28.7	59.7	55.8	55.8
	II	6.84	7.66	7.25	+0.82	81.6	90.3	13.3	14.7	17.6	14.7	28.1	28.1
	III	6.75	8.17	7.46	+1.42	88.5	91.0	25.1	17.3	18.7	17.3	30.0	30.0
	IV	7.19	8.80	8.00	+1.61	88.4	89.2	27.1	12.2	18.9	12.2	31.9	31.9
	V	6.99	8.41	7.70	+1.42	89.5	90.6	22.0	12.2	16.8	12.2	26.5	26.5
Super-phosphate	I	9.07	9.18	9.12	+0.11	87.2	87.3	30.9	32.7	19.7	32.7	31.9	31.9
	II	7.58	9.46	8.52	+1.83	86.2	85.4	25.1	30.2	21.5	30.2	37.4	37.4
	III	8.41	8.84	8.62	+0.43	89.0	89.9	26.9	26.7	20.6	26.7	30.8	30.8
	IV	7.19	9.11	8.15	+1.92	89.7	89.9	24.3	30.3	22.3	30.3	33.2	33.2
	V	8.33	7.78	8.06	-0.55	94.0	89.3	26.6	30.3	22.5	30.3	34.6	34.6
Rock phosphate	I	5.93	6.01	5.97	+0.08	83.3	86.6	29.3	29.4	21.5	29.4	33.2	33.2
	II	4.87	6.00	5.44	+1.13	84.3	83.1	25.7	23.5	19.9	23.5	31.2	31.2
	III	6.39	5.77	6.03	-0.62	89.6	80.1	27.3	29.4	20.8	29.4	29.1	29.1
	IV	6.43	7.23	6.86	+0.75	89.5	91.7	22.9	28.0	21.5	28.0	33.5	33.5
	V	5.10	6.48	5.79	+1.38	88.2	90.1	29.0	26.9	20.6	26.9	29.7	29.7
Mean Dry Matter %		84.5 83.4											

+Note. All manures are supplemented by fertilizers as shown in table on page 53/Ba/2.1