

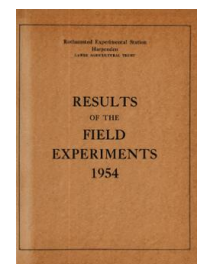
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Yields of the Field Experiments 1954

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54/R/BA/3 and 54/W/BA/3 Six-course Rotation

Rothamsted Research

Rothamsted Research (1955) *54/R/BA/3 and 54/W/BA/3 Six-course Rotation* ; Yields Of The Field Experiments 1954, pp 23 - 25 - DOI: <https://doi.org/10.23637/ERADOC-1-184>

54/Ba/3.1

SIX COURSE ROTATION EXPERIMENT

The 25th year

Seasonal effects of fertilizers - Rothamsted Long Hoos IV and Woburn Stackyard 1954.

For details of treatments, rotation etc., see "Results of the Field Experiments 1939-47" Vol.I, Section Ba/4.

Area of each plot: Rothamsted - 0.0250 acre. Woburn - 0.0266 acre.

Cultivations, etc.:

Rothamsted

Sugar beet.

Ploughed: Aug 21, 1953, Oct 20 and Dec 1. Fertilizers applied: Mar 26, 1954. Seed drilled at 18 lb per acre: Mar 30. Singled: May 31. Lifted: Nov 17. Variety: Klein E.

Barley.

Ploughed: Nov 27, 1953. Ground chalk applied at 22 cwt per acre: Dec 4. Fertilizers applied, seed drilled at 3 bushels per acre: Mar 15, 1954. Harvested: Aug 25. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: Apr 23, 1953. Autumn fertilizers applied: Nov 2. Sulphate of ammonia applied: Apr 30, 1954. Cut: July 13. Variety: Late flowering Montgomery Red.

Wheat.

Ploughed: July 10, 1953 and again Sept 17. Autumn fertilizers applied: Oct 9. Seed drilled at 3 bushels per acre: Oct 17. Sulphate of ammonia applied: Apr 30, 1954. Harvested: Aug 26. Variety: Yeoman.

Potatoes.

Ploughed: Aug 29, 1953, Oct 20 and Nov 30. Ridged: Apr 13, 1954. Fertilizers applied, potatoes planted: Apr 14. Earthed up: July 6. Sprayed (low volume) with copper fungicide paste $\frac{1}{2}$ gallon per acre: July 27 and again Aug 18. Sprayed with sulphuric acid 15% B.O.V: Sept 28. Lifted: Oct 2. Variety: Majestic.

Rye.

Ploughed: Sept 30, 1953. Ground chalk applied at 22 cwt per acre: Oct 3. Autumn fertilizers applied: Oct 10. Seed drilled at 3 bushels per acre: Oct 17. Sulphate of ammonia applied: Apr 30, 1954. Harvested: Aug 25. Variety: King II.

Note:- Clover: 6 plots were carted off in error when green. No summary of results can be shown.

54/Ba/3.2

Woburn

Sugar beet.

Ploughed: Aug 20, 1953, Nov 3 and Jan 20, 1954. Fertilizers applied: Mar 29. Seed drilled at 18 lb per acre: Mar 30. Dusted with D.D.T; May 12. Singled: May 31. Sprayed with parathion $\frac{1}{2}$ pint per acre: June 21. Lifted: Nov 2. Variety: Klein E. Previous crop: Rye. N.B. The crop was attacked by flea beetle and mangold fly.

Barley.

Ploughed: Nov 4, 1953. 2nd ploughing: Jan 20, 1954. Fertilizers applied: Mar 11. Seed drilled at $2\frac{1}{2}$ bushels per acre: Mar 17. Harvested: Aug 28. Variety: Plumage Archer. Previous crop: Sugar beet.

Clover.

Seed undersown in barley at 40 lb per acre: Mar 26, 1953. Autumn fertilizers applied: Oct 23. Sulphate of ammonia applied: Apr 27, 1954. Cut: June 30. Variety: Montgomery Red. Previous crop: Barley. N.B. The crop was damaged by Sclerotinia and was very weedy.

Wheat.

Ploughed: July 3, 1953. 2nd ploughing: Sept 16. Autumn fertilizers applied: Oct 22. Drilled at $2\frac{1}{2}$ bushels per acre: Oct 23. Sprayed with D.N.O.C. at 6 lb per acre in 80 gallons: Apr 27. Sulphate of ammonia applied: Apr 29. Harvested: Sept 7. Variety: Squareheads Master $13\frac{3}{4}$. Previous crop: Clover. N.B. The crop was very weedy.

Potatoes.

Ploughed: Sept 15, 1953, Nov 3 and Jan 20, 1954. Ridged, fertilizers applied, seed planted: Apr 18. Sprayed with copper fungicide: July 30. Sprayed with 15% sulphuric acid: Sept 23. Lifted: Oct 8. Variety: Majestic. Previous crop: Wheat.

Rye.

Ploughed: Oct 1, 1953. Autumn fertilizer applied, drilled seed at $2\frac{1}{2}$ bushels per acre: Oct 22. Sulphate of ammonia applied: Apr 29. Harvested: Aug 28. Variety: King II. Previous crop: Potatoes.

54/Ba/3.3

Summary of Results

Mean yields per acre and responses in yield per cwt of N, P₂O₅ and K₂O

	Rothamsted	Woburn	Rothamsted	Woburn	
		Sugar Beet, roots (washed): tons per acre		Barley, grain: cwt per acre	
Mean	8.55	4.57	31.7	29.1	
Response to: N	+2.88	+1.14	+4.6	+25.6	
P	+3.05	+4.46	+0.4	-1.9	
K	-0.08	-0.07	-1.2	-1.0	
		Sugar Beet, sugar percentage		Barley, straw: cwt per acre	
Mean	16.30	16.29	36.0	29.9	
Response to: N	+0.22	+0.56	+12.8	+40.3	
P	-1.21	+1.03	+1.1	-7.1	
K	+0.28	+0.58	-1.9	+2.8	
		Sugar Beet, total sugar: cwt per acre		Clover, hay: dry matter cwt per acre	
Mean	27.9	14.9		37.6	
Response to: N	+9.9	+4.2		-29.0	
P	+8.1	+15.7		+11.3	
K	+0.2	+0.2		+8.6	
		Sugar Beet, tops: tons per acre		Wheat, grain: cwt per acre	
Mean	10.93	4.88	26.5	14.8	
Response to: N	+5.88	+0.69	+8.0	+19.3	
P	+1.93	+5.21	-10.7	-9.6	
K	+0.02	-0.55	+5.2	+10.1	
		Sugar Beet, plant number: thousands per acre		Wheat, straw: cwt per acre	
Mean	26.0		48.2	18.6	
Response to: N	-1.1	†	+22.1	+22.7	
P	+3.1		-2.1	-9.8	
K	+1.7		-0.8	+12.7	
		Potatoes, total tubers: tons per acre		Rye, grain: cwt per acre	
Mean	6.08	4.21	32.8	26.4	
Response to: N	+3.07	+4.49	+32.2	+24.6	
P	+0.57	+1.39	-3.7	+3.3	
K	+1.32	+0.30	+0.1	-1.1	
		Potatoes, percentage ware		Rye, straw: cwt per acre	
Mean	78.9	80.5	40.2	30.9	
Response to: N	-10.7	+10.8	+23.6	+23.5	
P	-10.7	+6.6	-3.9	+8.9	
K	+6.5	+12.7	+2.0	-0.5	

* corrected to 85% Dry Matter. Mean Dry Matter %: 83.6 † not recorded.