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Yields of the Field Experiments 1952

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52/BA/3 Six-course Rotation - Rothamsted and Woburn

Rothamsted Research

Rothamsted Research (1953) *52/BA/3 Six-course Rotation - Rothamsted and Woburn* ; Yields Of The Field Experiments 1952, pp 23 - 26 - DOI: <https://doi.org/10.23637/ERADOC-1-178>

52/Ba/3.1

SIX COURSE ROTATION EXPERIMENT

The 23rd year

Seasonal effects of fertilizers - Rothamsted Long Hoos IV and Woburn Stackyard, 1952.

For details of rotation and treatments etc. see "Results of the Field Experiments 1939-47".

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

Cultivations, etc.:

Rothamsted

Sugar beet.

Ploughed: Aug 28, 1951 and again Dec 22. Fertilizers applied: Mar 18, 1952. Seed drilled at 18 lb per acre: Mar 21. Singled: May 23. Lifted: Dec 31. Variety: Klein E.

Barley.

Ploughed: Dec 17, 1951. Ground chalk applied at 20 cwt per acre: Feb 25, 1952. Fertilizers applied, seed drilled at 3 bushels per acre: Mar 3. Harvested: July 28. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: Apr 17, 1951. Autumn fertilizers applied: Nov 4. Sulphate of ammonia applied: Apr 16, 1952. Cut: June 25. Variety: Late flowering Montgomery Red.

Wheat.

Ploughed: Aug 7, 1951. Autumn fertilizers applied: Oct 18. Seed drilled at 3 bushels per acre: Oct 19. Sulphate of ammonia applied: Apr 24, 1952. Sprayed with M.C.P.A. 5 pints per acre: May 10. Harvested: July 26. Variety: Yeoman.

Potatoes.

Ploughed: Aug 25, 1951 and again Dec 18. Ridged, fertilizers applied, potatoes planted: Apr 25, 1952. Earthed up: July 8. Sprayed with copper fungicide 5 lb per acre: Sept 3. Sprayed with sulphuric acid, 20% B.O.V: Sept 23. Lifted: Oct 7. Variety: Majestic.

Rye.

Cultivated: Oct 10, 1951. 25 cwt ground chalk per acre and autumn fertilizers applied: Oct 17. Seed drilled at 3 bushels per acre: Oct 18. Sulphate of ammonia applied: Apr 17, 1952. Harvested: July 26. Variety: King II.

52/Ba/3.2

Woburn

Sugar beet.

Ploughed: Sept 13, 1951 and again Jan 7, 1952. Fertilizers applied and seed drilled at 18 lb per acre: Apr 18. Singled: May 29. Lifted: Oct 8. Variety: Klein E.

Barley.

Ploughed: Oct 12, 1951 and again Feb 9, 1952. Ground chalk applied at 20 cwt per acre: Feb 29. Fertilizers applied: Mar 13. Seed drilled at 3 bushels per acre: Mar 14. Harvested: July 31. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: Apr 18, 1951. Autumn fertilizers applied: Dec 5. Sulphate of ammonia applied: Apr 23, 1952. Cut: June 30. Variety: Late flowering Montgomery Red.

Wheat.

Ploughed: July 24, 1951 and again Sept 7. Autumn fertilizers applied: Oct 23. Seed drilled at 3 bushels per acre: Oct 26. Sulphate of ammonia applied: May 2, 1952. Sprayed with D.N.B.P.: May 24. Harvested: July 28. Variety: Red Standard.

Potatoes.

Ploughed: Sept 7, 1951 and again Jan 9, 1952. Ridged: Apr 23. Fertilizers applied, potatoes planted: Apr 24. Earthed up: June 16. Sprayed with copper fungicide 5 lb per acre: Aug 11 and again Sept 22. Sprayed with sulphuric acid, 15% B.O.V: Sept 22. Lifted: Oct 7. Variety: Majestic.

Rye.

Ploughed: Oct 9, 1951. Autumn fertilizers applied: Oct 23. Ground chalk applied at 20 cwt per acre: Oct 25. Seed drilled at 3 bushels per acre: Oct 26. Sulphate of ammonia applied: May 2, 1952. Harvested: July 25. Variety: King II.

52/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	12.37	9.21	32.0	25.3
Response to: N	+1.39	+0.73	+16.5	+30.7
P	-2.69	-2.43	+1.3	+2.4
K	-2.40	+3.11	+1.0	+2.7
	Sugar Beet, sugar percentage		Barley, straw: cwt per acre	
Mean	17.07	19.58	37.2	29.8
Response to: N	-0.34	-0.37	+40.0	+47.9
P	-0.05	+0.37	+4.1	-1.1
K	-0.50	+0.20	+0.8	+2.5
	Sugar Beet, total sugar: cwt per acre		Clover, hay, dry matter: cwt per acre	
Mean	42.2	36.1	37.6	43.8
Response to: N	+3.9	+1.9	-7.1	+10.0
P	-9.3	-8.8	+7.1	-15.3
K	-9.3	+12.5	-0.7	+14.8
	Sugar Beet, tops: tons per acre		Wheat, grain: cwt per acre	
Mean	⌘	4.79	34.3	8.6
Response to: N		+2.10	+14.0	+10.0
P		-1.75	-4.7	+7.1
K		+1.76	+1.0	-0.2
	Sugar Beet, plant number: thousands per acre		Wheat, straw: cwt per acre	
Mean	28.6	⌘	60.6	15.8
Response to: N	+2.8		+31.8	+18.2
P	-4.9		-1.9	+6.8
K	0.0		-0.4	+2.4

⌘ not recorded.

52/Ba/3.4

	Rothamsted	Woburn	Rothamsted	Woburn
	Potatoes, total tubers: tons per acre		Rye, grain: cwt per acre	
Mean	8.15	6.29	27.3	22.8
Response to: N	+1.87	+4.39	+12.5	+24.4
P	+0.26	+1.79	+10.8	-0.7
K	+3.03	-1.43	+1.2	+3.0
	Potatoes, percentage ware		Rye, straw: cwt per acre	
Mean	75.0	86.8	38.2	26.0
Response to: N	+1.5	-2.1	+21.3	+24.9
P	+7.1	+11.7	+17.2	+1.8
K	+7.4	-3.6	+3.3	+1.8