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Yields of the Field Experiments 1953

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

Rothamsted Research

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53/Ba/3.1

SIX COURSE ROTATION EXPERIMENT

The 24th year

Seasonal effects of fertilizers - Rothamsted Long Hoos IV and Woburn Stackyard, 1953.

For details of rotation and treatments 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 18, 1952 and again Feb 2, 1953. Fertilizers applied: Mar 17. Seed drilled at 18 lb per acre: Mar 26. Sprayed with D.D.T. emulsion, 3 pints in 10 gallons per acre: May 11. Singled: June 5. Lifted: Nov 15. Variety: Klein E.

Barley.

Ploughed: Jan 22, 1953. 20 cwt ground chalk per acre applied: Feb 4. Fertilizers applied, seed drilled at 3 bushels per acre: Feb 27. Harvested: Aug 10. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: Apr 18, 1952. Autumn fertilizers applied: Nov 12. Sulphate of ammonia applied: Apr 7, 1953. Cut: June 23. Variety: Late flowering Montgomery Red.

Wheat.

Ploughed: Aug 6, 1952 and again Sept 5. Autumn fertilizers applied: Oct 8. Seed drilled at 3 bushels per acre: Oct 29. Sulphate of ammonia applied: Apr 21, 1953. Harvested: Aug 12. Variety: Yecman.

Potatoes.

Ploughed: Aug 24, 1952. Ridged and fertilizers applied: Mar 27, 1953. Potatoes planted: Mar 28. Earthed up: June 25. Sprayed with copper fungicide, 5½ lb per acre: July 28 and again Aug 8. Lifted: Sept 29. Variety: Majestic.

Rye.

Ploughed: Oct 8, 1952. 23 cwt ground chalk per acre applied: Oct 11. Autumn fertilizers applied: Oct 15. Seed drilled at 3 bushels per acre: Oct 29. Sulphate of ammonia applied: Apr 21, 1953. Harvested: Aug 10. Variety: King II.

Woburn

Sugar beet.

Ploughed: Aug 19, 1952 and again Nov 11. Fertilizers applied: Mar 20, 1953. Seed drilled at 18 lb per acre: Mar 24. Dusted with D.D.T.: Apr 25. Singled: May 29. Lifted: Oct 20. Variety: Klein E.

Barley.

Ploughed: Nov 11, 1952. 25 cwt ground chalk per acre applied: Feb 23, 1953. Fertilizers applied and seed drilled at 3 bushels per acre: Mar 5. Harvested: Aug 13. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: May 9, 1952. Autumn fertilizers applied: Jan 14, 1953. Sulphate of ammonia applied: Apr 20. Cut: June 25. Variety: Late flowering Montgomery Red.

Wheat.

Ploughed: July 9, 1952 and again Aug 20. Autumn fertilizers applied: Oct 9. Seed drilled at 3 bushels per acre: Oct 10. Sulphate of ammonia applied: Apr 21, 1953. Sprayed with D.N.O.C. 80 gallons per acre: May 26. Harvested: Aug 26. Variety: Squareheads Master 13/4.

Potatoes.

Ploughed: Aug 19, 1952 and again Nov 11. Ridged, fertilizers applied, potatoes planted: Apr 10, 1953. Sprayed with sulphuric acid, 15% B.O.V.: Sept 17. Lifted: Sept 24. Variety: Majestic.

Rye.

Cultivated: Oct 5, 1952. 25 cwt ground chalk per acre applied: Oct 9. Autumn fertilizers applied, seed drilled at 3 bushels per acre: Oct 11. Sulphate of ammonia applied: Apr 21, 1953. Harvested: Aug 13. Variety: King II.

Summary of Results

53/Ba/3.3

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	13.84	12.66	23.2	21.8	
Response to: N	+1.32	+9.71	+22.8	+24.5	
P	-1.57	-1.24	-4.3	+0.3	
K	+1.71	+0.30	-0.4	+5.9	
		Sugar Beet, sugar percentage		Barley, straw: cwt per acre	
Mean	18.07	17.27	25.0	29.0	
Response to: N	+0.53	+1.67	+23.6	+25.1	
P	-0.17	-0.71	-9.7	-0.7	
K	+0.06	+0.28	+1.1	+6.8	
		Sugar Beet, total sugar: cwt per acre		Clover, hay: dry matter cwt per acre	
Mean	50.0	43.8	35.3	33.6	
Response to: N	+6.1	+37.5	+3.5	-2.0	
P	-6.2	-6.3	+1.3	+7.3	
K	+6.3	+1.7	+2.7	+8.9	
		Sugar Beet, tops: tons per acre		Wheat, grain: cwt per acre	
Mean	8.41	7.14	34.1	6.0	
Response to: N	+1.79	+9.27	+5.5	+10.6	
P	-0.29	-1.53	-6.7	+0.6	
K	+1.58	+0.70	-2.8	-2.8	
		Sugar Beet, plant number: thousands per acre		Wheat, straw: cwt per acre	
Mean	26.6	*	58.1	12.7	
Response to: N	-5.1		+20.9	+17.8	
P	+3.7		-1.5	+4.5	
K	+0.8		-2.3	-4.1	
		Potatoes, total tubers: tons per acre		Rye, grain: cwt per acre	
Mean	10.95	10.16	26.7	16.8	
Response to: N	+5.11	+5.04	+28.7	+27.0	
P	+1.54	+2.57	+0.2	+2.3	
K	-0.09	+1.83	-3.4	-2.4	
		Potatoes, percentage ware		Rye, straw: cwt per acre	
Mean	88.9	90.0	38.0	26.1	
Response to: N	-1.9	+1.0	+28.0	+36.7	
P	-1.8	+5.9	-7.1	+9.4	
K	-2.5	+2.5	+3.2	-0.8	

*not recorded.