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Yields of the Field Experiments 1951

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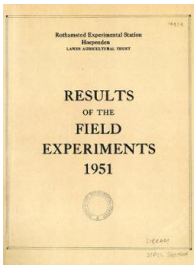

51/BA/3 Six-course Rotation - Rothamsted and Woburn

Rothamsted Research

Rothamsted Research (1952) *51/BA/3 Six-course Rotation - Rothamsted and Woburn ;* Yields Of The Field Experiments 1951, pp 19 - 22 **- DOI: https://doi.org/10.23637/ERADOC-1-171**

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SIX COURSE ROTATION EXPERIMENT

The 22nd year

Seasonal effects of fertilizers - Rothamsted Long Hoos IV and Woburn Stackyard, 1951.

For details of rotation and treatments etc. see Appendix Z 1950.

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

Cultivations, etc.:

Rothamsted

Sugar beet.
Ploughed: Aug 16 and again Jan 27. Fertilizers applied: Apr 25. Seed drilled at 18 lb per acre: May 2. Singled: June 13. Lifted: Nov 1. Variety: Klein E.

Barley.
Ploughed: Jan 25. Ground chalk applied: Apr 5. Fertilizers applied: Apr 14. Seed drilled at 3 bushels per acre: Apr 16. Harvested: Aug 25. Variety: Plumage Archer.

Clover.
Seed undersown in barley at 40 lb per acre: Mar 21. Autumn fertilizers applied: Oct 4. Sulphate of ammonia applied: May 3. Cut: July 7. Variety: Late flowering Montgomery Red.

Wheat.
Ploughed: Aug 10. Autumn fertilizers applied: Oct 5. Seed drilled at 3 bushels per acre: Oct 18. Sulphate of ammonia applied: May 21. Harvested: Aug 14. Variety: Yeoman.

Potatoes.
Ploughed: Aug 16 and again Jan 27. Fertilizers applied on the flat: May 3. Ridged: May 9. Potatoes planted with dropper machine into top of ridges: May 10. Earthed up: June 23. Sprayed with copper fungicide 5 lb per acre: Aug 14 and again Sept 8. Sprayed with 15% sulphuric acid: Sept 26. Lifted: Oct 9. Variety: Majestic.

Rye.
Ploughed: Oct 19. Ground chalk applied: Oct 20. Autumn fertilizers applied and seed drilled at 3 bushels per acre: Oct 21. Sulphate of ammonia applied: May 21. Harvested: Aug 14. Variety: King II.

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Woburn

Sugar beet.
Ploughed: Aug 29 and again Oct 20. Fertilizers applied: Apr 20. Seed drilled at 18 lb per acre: May 2. Singled: June 8. Lifted: Oct 11. Variety: Klein E.

Barley.
Ploughed: Oct 6. Ground chalk applied: Apr 5. Fertilizers applied and seed drilled at 3 bushels per acre: Apr 16. Harvested: Sept 3. Variety: Plumage Archer.

Clover.
Seed undersown in barley at 40 lb per acre: Mar 22. Autumn fertilizers applied: Oct 20. Sulphate of ammonia applied: May 7. Cut: July 9. Variety: Late flowering Montgomery Red.

Wheat.
Ploughed: July 20. Autumn fertilizers applied: Oct 17. Seed drilled at 3 bushels per acre: Oct 19. Sulphate of ammonia applied: May 7. Harvested: Aug 20. Variety: Squareheads Master 13/4.

Potatoes.
Ploughed: Aug 19 and again Oct 5. Fertilizers applied: May 3. Ridged: May 7. Potatoes planted: May 8. Earthed up: July 11. Sprayed with copper fungicide 5 lb per acre: Aug 8 and again Sept 8. Sprayed with 15% sulphuric acid: Sept 26. Lifted: Oct 4. Variety: Majestic.

Rye.
Ploughed: Oct 5. Autumn fertilizers applied: Oct 17. Seed drilled at 3 bushels per acre: Oct 19. Ground chalk applied: Apr 5. Sulphate of ammonia applied: May 7. Harvested: Aug 20. Variety: King II.

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Summary of Results

Mean yields per acre and responses in yield per cwt of N, P_2O_5 and K_2O

	Rothamsted	Woburn	Rothamsted	Woburn
	Sugar Beet, roots (washed): tons per acre		Barley, grain: cwt per acre	
Mean	10.05	6.19	27.9	16.9
Response to: N	0.73	5.19	8.7	19.5
P	1.26	-0.65	-1.7	-12.3
K	-0.78	-0.79	0.9	-2.8
	Sugar Beet, sugar percentage		Barley, straw: cwt per acre	
Mean	17.20	16.51	31.0	18.3
Response to: N	-0.63	-1.69	-2.8	5.9
P	0.12	-0.63	-2.5	-10.8
K	-0.17	-1.22	2.9	1.7
	Sugar Beet, total sugar: cwt per acre		Clover, hay: dry matter cwt per acre	
Mean	34.6	20.4	39.2	48.5
Response to: N	1.3	14.9	8.6	-22.1
P	4.7	-3.2	-6.0	29.9
K	-3.0	-4.0	-3.8	-1.5
	Sugar Beet, tops: tons per acre		Wheat, grain: cwt per acre	
Mean	10.66	5.62	26.8	8.7
Response to: N	6.09	6.55	23.4	19.9
P	2.15	-0.65	-0.3	10.7
K	-0.36	-0.15	-0.7	-1.4
	Sugar Beet, plant number: thousands per acre		Wheat, straw: cwt per acre	
Mean	29.3		37.9	16.4
Response to: N	-0.2		36.9	28.5
P	-0.3		0.5	8.3
K	1.6		1.6	-1.5

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	Rothamsted	Woburn	Rothamsted	Woburn
	Potatoes, total tubers tons per acre		Rye, grain: cwt per acre	
Mean	7.42	8.34	25.6	18.1
Response to: N	2.14	4.61	17.0	21.1
P	1.39	2.29	0.0	-5.5
K	0.03	0.60	1.5	3.6
	Potatoes, percentage ware		Rye, straw: cwt per acre	
Mean	85.3	82.0	28.2	17.8
Response to: N	0.4	11.2	13.9	19.5
P	-3.9	2.8	4.1	-4.0
K	3.0	5.3	-0.1	5.1