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Yields of the Field Experiments 1951

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51/BA/1 Three-course Rotation - Rothamsted

Rothamsted Research

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THREE COURSE ROTATION EXPERIMENT

The 19th year

Ploughing in straw - Long Hoos VI 1951.

For details of rotation and treatment see Appendix Z 1950.

Area of each plot: 0.0200 acre.

Cultivations, etc:

Potatoes (Series 2)

Adco and all autumn fertilizers applied: Jan 29. Straw applied, ploughed all plots: Mar 5. Spring fertilizers applied: May 3. Ridged: May 9. Potatoes planted by dropper into top of ridges: May 10. Barthed up ridges: July 6. Sprayed with copper fungicide, 5 lb per acre: Aug 14 and again Sept 8. Sprayed with 15% sulphuric acid: Sept 26. Lifted Oct 8th. Variety: Majestic.

Barley (Series 1)

Adco, straw and all autumn fertilizers applied: Jan 29. Ploughed: Mar 5. Spring fertilizers applied, seed drilled at 3 bushels per acre: Apr 17. Harvested: Aug 29. Variety: Plumage Archer.

Sugar beet (Series 3)

Adco applied: Jan 29. Autumn fertilizers and straw applied: Jan 30. Ploughed: Mar 5. Spring fertilizers applied: Apr 24. Seed drilled at 18 lb per acre: May 2. Singled: June 18. Lifted: Nov 7. Variety: Klein E.

Standard errors per plot:

Potatoes, Total clean tubers:	0.500 tons per acre or 7.8% (8 d.f.)
Barley, Grain:	3.62 cwt per acre or 14.9% (8 d.f.)
Sugar beet, Total sugar:	4.46 cwt per acre or 13.1% (8 d.f.)
Tops:	1.31 tons per acre or 14.8% (8 d.f.)

51/Ba/1.2

Summary of Results

	Treatments applied 1949/50					Treatments applied 1950/51				
	Art.	Adco	St 1	St 2	Mean	Art.	Adco	St 1	St 2	Mean
<u>Potatoes</u>										
Total clean tubers: tons per acre	5.36	6.40 (±0.289)	6.23	6.16	6.04 (±0.144)	7.50	6.05 (±0.289)	6.22	7.34	6.78 (±0.144)
Percentage ware	75.8	81.5	79.4	81.9	79.6	82.7	82.7	83.7	83.6	83.2
<u>Barley</u>										
Grain: cwt per acre	21.1	20.8 (±2.09)	21.4	24.6	22.0 (±1.04)	30.3	21.3 (±2.09)	28.1	26.8	26.6 (±1.04)
Straw: cwt per acre	19.3	19.9	18.2	22.4	19.9	30.0	19.4	25.7	23.7	24.7
<u>Sugar beet</u>										
Roots (washed): tons per acre	9.84	8.18	10.00	10.30	9.58	12.53	8.43	10.32	8.52	9.95
Sugar Percentage	17.51	17.71	17.37	17.40	17.50	17.45	17.58	17.46	17.16	17.42
Total sugar: cwt per acre	34.5	29.0 (±2.58)	34.8	35.9	33.5 (±1.29)	43.8	29.7 (±2.58)	36.0	29.2	34.7 (±1.29)
Tops: tons per acre	8.35	7.19 (±0.756)	8.88	9.37	8.45 (±0.378)	12.30	7.31 (±0.756)	9.74	7.80	9.29 (±0.378)
Plant number: thous. per acre	27.7	27.8	26.4	27.9	27.4	27.1	26.8	26.5	25.7	26.5

51/Ba/1.3

Responses to Magnesium Sulphate

	Treatments applied 1949/50					Treatments applied 1950/51				
	Art.	Adco	St 1	St 2	Mean	Art.	Adco	St 1	St 2	Mean
<u>Potatoes</u>										
Total clean tubers:	0.50	1.23	-0.47	-0.32	0.23	1.34	0.11	-0.98	-0.63	-0.04
tons per acre		(±0.612)			(±0.306)		(±0.612)			(±0.306)
Percentage ware	2.4	4.6	-1.3	5.5	2.8	0.8	1.8	6.7	2.1	2.8
<u>Barley</u>										
Grain:	-1.2	-4.1	-5.3	0.6	-2.5	-3.7	-1.5	1.2	-3.4	-1.8
cwt per acre		(±4.43)			(±2.21)		(±4.43)			(±2.21)
Straw:	-0.3	-3.1	-6.9	-0.5	-2.7	-2.8	-0.3	2.3	-4.4	-1.3
cwt per acre										
<u>Sugar beet</u>										
Roots (washed):	-0.36	1.40	1.25	1.53	0.95	-1.24	1.03	-3.52	0.09	-0.91
tons per acre										
Sugar percentage	0.34	-0.02	-0.30	0.44	0.11	-0.52	0.33	0.16	0.48	0.11
Total sugar:	-0.6	4.9	3.7	6.3	3.6	-5.6	4.1	-12.0	1.1	-3.1
cwt per acre		(±5.47)			(±2.73)		(±5.47)			(±2.73)
Tops:	-0.67	0.94	1.95	1.09	0.83	-2.50	-0.25	-4.09	0.49	-1.59
tons per acre		(±1.60)			(±0.80)		(±1.60)			(±0.80)
Plant number:	-0.5	-1.7	2.1	1.3	0.3	1.4	2.1	-0.7	-1.1	0.4
thous. per acre										