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Yields of the Field Experiments 1949

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49/BA/2 Three-course Rotation - Rothamsted

49/BA/2 *Three-course Rotation - Rothamsted*, Rothamsted Research (1950) Yields Of The Field Experiments 1949, pp 19 - 22

49/Ba/2.1

THREE COURSE ROTATION EXPERIMENT

Long Hoos VI, 1949

Effect of ploughing in straw

Treatments as given in 1933 Report, pp. 118-9, except that no comparisons of winter green manuring crops are now made, and that commencing in 1942 a yearly dressing of $2\frac{1}{2}$ cwt per acre magnesium sulphate is applied to one of the replicate plots of each treatment in each crop block.

Cultivations, etc.

Sugar beet, Series I.

Applied Adco with accompanying artificials: Dec 16.
Applied straw and accompanying artificials and ploughed in: Dec 29. Cultivated: Mar 30. Harrowed: Apr 9.
Harrowed and rolled: Apr 11. Seed drilled: Apr 12.
Applied artificials and harrowed in: Apr 13. Rolled: Apr 14.
Hoed: May 12. Singled: May 27. Hoed: June 2, 21, 29-30 and July 25. Lifted: Nov 15. Variety: Klein E.
Previous crop: Barley.

Barley, Series II.

Applied Adco with accompanying artificials: Dec 16.
Applied straw and accompanying artificials and ploughed in: Dec 29-30. Springtime harrowed: Feb 25. Applied artificials: Mar 2. Harrowed, seed drilled and harrowed in: Mar 4. Ring rolled: Apr 12. Thistles pulled: June 8-9, and 13. Harvested: Aug 6. Variety: Plumage Archer. Previous crop: Potatoes.

Potatoes, Series III.

Applied Adco with accompanying artificials: Dec 16.
Applied straw and accompanying artificials and ploughed in: Dec 29-30. Cultivated: Mar 30. Harrowed and ring rolled: Mar 31. Bouted, applied artificials: Apr 1.
Potatoes planted and covered in: Apr 4. Rolled down ridges: Apr 9. Harrowed: Apr 27. Re-ridged: May 9.
Harrowed ridges: May 16. Grubbed: June 1 and 28.
Weeded: June 29. Earthed up: July 11. Sprayed to kill off haulm: Sept 9. Lifted: Sept 22. Variety: Majestic. Previous crop: Sugar beet.

49/Ba/2.2

Standard errors per plot:

Sugar beet,	roots (washed),	0.740	tons per acre or 11.1%
	tops,	0.900	tons per acre or 14.8%
	sugar percentage,	0.456	
	total sugar,	2.19	cwt per acre or 10.3%
Barley,	plant number,	1.81	thousands per acre or 7.1%
	grain,	1.24	cwt per acre or 4.6%
	straw,	1.84	cwt per acre or 6.2%
Potatoes,	total tubers,	0.463	tons per acre or 12.1%
	percentage ware,	2.91	

All standard errors are based on 8 d.f.

Note: Owing to varying conditions during harvest all barley grain and straw yields have been corrected to 88% dry matter.

49/Ba/2.3

Summary of Results

	Treatments applied 1947/8					Treatments applied 1948/9				
	Art.	Adco	St 1	St 2	Mean	Art.	Adco	St 1	St 2	Mean
<u>Series I</u>										
Sugar beet										
Roots (washed) tons/acre	5.98	5.96 (±0.427)	6.08	6.71	6.18 (±0.214)	7.05	7.06 (±0.427)	7.11	7.21	7.11 (±0.214)
Tops tons/acre	5.41	5.31 (±0.520)	6.37	5.72	5.70 (±0.260)	6.91	6.05 (±0.520)	6.71	6.34	6.50 (±0.260)
Sugar percentage	16.01	15.91 (±0.263)	15.79	15.68	15.85 (±0.132)	15.41	16.17 (±0.263)	16.01	15.70	15.82 (±0.132)
Total sugar cwt./acre	19.1	20.1 (±1.26)	19.2	21.1	19.9 (±0.63)	21.8	22.8 (±1.26)	22.8	22.7	22.5 (±0.63)
Plant number thous./acre	25.5	24.9 (±1.04)	25.9	26.2	25.6 (±0.52)	25.9	27.0 (±1.04)	23.1	25.4	25.4 (±0.52)
<u>Series II</u>										
Barley										
Grain cwt./acre	25.4	26.4 (±0.71)	26.4	27.5	26.4 (±0.36)	30.3	25.4 (±0.71)	30.5	29.1	28.8 (±0.36)
Straw cwt./acre	26.9	27.7 (±1.06)	26.3	28.7	27.9 (±0.53)	34.8	25.9 (±1.06)	32.4	33.9	31.8 (±0.53)
<u>Series III</u>										
Potatoes										
tons/acre	2.91	3.82 (±0.267)	3.61	3.85	3.55 (±0.134)	3.93	3.85 (±0.267)	4.53	4.08	4.10 (±0.134)
Percentage Ware	70.7	76.0 (±1.68)	74.1	73.2	73.5 (±0.84)	71.8	73.4 (±1.68)	79.1	72.7	74.3 (±0.84)

49/Ba/2.4

Responses to Magnesium Sulphate

	Treatments applied 1947/8					Treatments applied 1948/9				
	Art.	Adco	St 1	St 2	Mean	Art.	Adco	St 1	St 2	Mean
<u>Series I</u>										
Sugar beet										
Roots (washed)	0.75	-0.82	-1.45	0.13	-0.55	0.24	0.20	0.46	0.13	0.26
tons/acre		(±0.907)					(±0.907)			
Tops	0.43	-0.80	1.87	0.00	0.38	0.15	-1.17	0.72	-0.04	-0.08
tons/acre		(±1.103)					(±1.103)			
Sugar	-0.11	0.03	0.41	0.44	0.19	-0.16	-0.45	-0.60	0.17	-0.26
Percentage		(±0.558)					(±0.558)			
Total sugar	2.2	-4.4	-4.2	0.9	-1.3	0.5	0.0	0.5	0.6	0.4
cwt./acre		(±2.68)					(±2.68)			
Plant number	1.4	-1.8	1.0	0.2	0.2	0.4	1.6	-0.2	-1.2	0.2
thous./acre		(±2.21)					(±2.21)			
<u>Series II</u>										
Barley										
Grain	-1.5	4.1	-0.6	-2.7	-0.2	0.2	2.4	0.5	0.3	0.9
cwt./acre		(±1.52)					(±1.52)			
Straw	0.8	-0.9	0.2	-3.6	-0.9	4.8	-0.4	2.6	0.9	2.0
cwt./acre		(±2.25)					(±2.25)			
<u>Series III</u>										
Potatoes										
tons/acre	-0.50	0.90	0.44	-0.20	0.16	-0.86	-1.36	0.56	0.54	-0.28
		(±0.567)					(±0.567)			
Percentage	-6.1	2.7	5.0	2.4	1.0	-12.2	-9.1	-4.2	-4.4	-7.5
Ware		(±3.56)					(±3.56)			