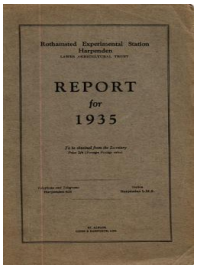
ROTHAMSTED RESEARCH

Report for 1935

Full Table of Content



Continuous Rotation Experiments

Rothamsted Research

Rothamsted Research (1936) *Continuous Rotation Experiments ;* Report For 1935, pp 158 - 174 **-**
DOI: https://doi.org/10.23637/ERADOC-1-67

FOUR COURSE ROTATION EXPERIMENT, ROTHAMSTED

RESIDUAL VALUES OF HUMIC AND PHOSPHATIC FERTILISERS

For details, see 1932 Report, p. 127

MANURES APPLIED, SEASON 1934-5

Treatment	Organic Fertilisers (cwt. per acre)				Additional Artificial Fertilisers (cwt. per acre)		
	Organic Matter	N	K_2O	P_2O_5	N. as S. of A.	K_2O as Mur. Pot.	P_2O_5 as Super.
1 ..	50 (as F.Y.M.)†	1.800	1.851	0.611	None†	1.149	0.589
2 ..	50 (as Adco)	1.030	0.793	1.167	0.770	2.207	0.033
3 ..	120.37 (as straw)	0.670	1.457	0.012	1.130	1.543	1.188
4 ..		None			0.36	0.6	1.2
5 ..		None			0.36	0.6	1.2*

* As mineral phosphate.

† The F.Y.M. used had too high a ratio of N. to organic matter, and had to be slightly diluted with straw. The adjustment was made so that a quantity of the mixture containing 50 cwt. of organic matter, also contained 1.8 cwt. of N. No additional sulphate of ammonia was therefore required. The weights applied per acre were 199.6 cwt. F.Y.M. and 6.6 cwt. straw.

CULTIVATIONS, ETC.

	Barley	Seeds†	Potatoes	Wheat
Variety	Plumage Archer	Ryegrass	Ally	Yeoman
Date of Sowing ..	March 13	Sept. 12	April 12	Oct. 23
Manures applied—				
Dung and Adco	Dec. 12	Sept. 7	Dec. 17	Sept. 10
Artificials to Adco and Dung ..	Dec. 12	Sept. 7	Dec. 17	Sept. 10
Straw	Dec. 13-Jan. 7	Sept. 7-8	Jan. 8-10	Sept. 11
Artificials to straw ..	Dec. 12, Feb. 12, Mar. 7	Sept. 7, Dec. 20, Mar. 7	Dec. 17, Feb. 12, Mar. 7	Sept. 10, Dec. 20, Mar. 7
Treatments 4 and 5 ..	March 7	Sept. 12, Mar. 19	April 5	Oct. 20, Mar. 19
Date of harvesting	Aug. 12	June 22	Oct. 14	Aug. 13
Previous crop ..	Potatoes	Barley	Wheat	Seeds hay
Cultivations—				
Ploughing ..	Dec. 13—Jan. 7-8	Sept. 7-8	Jan. 8-10	July 18, Sept. 11-13
Harrowing ..	March 12, 14	Sept. 12, 13	Mar. 29, May 7, 16	Oct. 20, 23, Mar. 21
Rolling ..		Sept. 12, 13	April 1, May 7	March 26
Ridging ..			April 1, May 24, July 19	
Grubbing ..			June 25, July 10	

† The seeds mixture of ryegrass and white clover, previously sown under barley, was replaced in 1934-35 by ryegrass alone, sown in autumn after ploughing the barley stubble.

https://doi.org/10.23637/ERADOC-1-67

PLAN AND YIELDS

Wheat—AW, plots 1-25
Yields in lb., grain above, straw below.

N.W.

5 45.1 79.4 III	2 64.5 97.0 I	1 57.3 77.7 IV	3 62.8 100.7 II	4 57.8 88.2 V
5 43.4 71.6 V	1 55.8 87.2 II	3 69.2 121.3 I	4 56.5 99.5 III	2 47.2 80.3 IV
3 44.3 64.7 V	2 44.1 64.4 III	5 50.2 80.8 II	4 52.7 109.3 IV	1 65.6 132.9 I
1 45.5 64.5 V	3 48.0 69.8 III	4 61.3 105.2 I	5 47.6 117.4 IV	2 47.6 113.9 II
4 55.7 87.8 II	1 50.2 76.8 III	5 53.0 103.5 I	3 46.2 116.8 IV	2 41.9 79.6 V

Potatoes—AP, plots 26-50
Yields in lb.

N.W.

26 3 183 V	27 2 224 I	28 5 193 II	29 4 263 IV	30 1 152 III
31 4 359 I	32 2 133 IV	33 1 148 V	34 5 181 III	35 3 129 II
36 1 224 IV	37 4 206 II	38 3 180 III	39 5 212 I	40 2 158 V
41 4 308 III	42 5 241 V	43 3 228 IV	44 2 217 II	45 1 290 I
46 2 217 III	47 4 224 V	48 3 226 I	49 1 212 II	50 5 232 IV

Ryegrass—AR, plots 51-75
Yields in lb., hay

N.W.

3 181 I	4 112 III	1 68 II	2 37 IV	5 83 V
3 100 II	4 105 V	5 104 I	2 43 III	1 36 IV
2 140 I	4 130 II	3 42 V	1 49 III	5 82 IV
5 120 II	1 115 I	3 65 III	4 109 IV	2 36 V
4 82 I	2 112 II	1 41 V	5 116 III	3 50 IV

Barley—AB, plots 76-100
Yields in lb., grain above, straw below

N.W.

4 85.6 94.9 V	2 89.0 106.0 I	5 80.6 90.9 IV	3 54.0 61.0 II	1 86.6 90.9 III
5 75.9 91.1 II	2 71.5 77.0 III	1 58.6 66.4 V	4 81.0 87.0 IV	3 97.0 109.0 I
2 62.4 70.1 IV	1 82.3 87.7 I	5 75.4 87.6 III	4 81.2 84.8 II	3 64.2 69.8 V
2 57.4 62.6 V	4 74.8 83.7 III	1 72.1 76.9 II	5 65.7 79.8 I	3 61.2 68.8 IV
5 76.8 89.7 V	2 61.1 65.9 II	3 62.3 65.2 III	1 55.5 62.5 IV	4 96.5 108.0 I

https://doi.org/10.23637/ERADOC-1-67

SUMMARY OF RESULTS, 1935

Manure	Year of Cycle	Wheat cwt. per Acre		Potatoes tons per Acre	Barley cwt. per Acre		Ryegrass cwt. per Acre dry matter
		Grain	Straw		Grain	Straw	
Manure as F.Y.M.	I	24.0	48.7	5.31	31.5	33.5	28.4
	II	20.4	32.0	3.88	27.6	29.4	16.7
	III	18.4	28.1	2.78	33.1	34.8	12.1
	IV	21.0	28.5	4.10	21.2	23.9	8.9
	V	16.7	23.6	2.71	22.4	25.4	10.0
Manure as Adco*	I	23.6	35.6	4.10	34.0	40.5	34.5
	II	17.4	41.7	3.98	23.4	25.2	27.7
	III	16.2	23.6	3.98	27.3	29.4	10.7
	IV	17.3	29.4	2.44	23.9	26.8	9.1
	V	15.4	29.2	2.90	22.0	23.9	9.0
Manure as Straw	I	25.4	44.4	4.14	37.1	41.7	44.7
	II	23.0	36.9	2.36	20.6	23.3	24.6
	III	17.6	25.6	3.30	23.8	24.9	16.1
	IV	16.9	42.8	4.18	23.4	26.3	12.3
	V	16.2	23.7	3.35	24.6	26.7	10.4
Super.	I	22.5	38.6	6.58	36.9	41.3	20.3
	II	20.4	32.2	3.78	31.0	32.4	32.0
	III	20.7	36.5	5.64	28.6	32.0	27.6
	IV	19.3	40.1	4.82	31.0	33.3	27.0
	V	21.2	32.3	4.10	32.7	36.3	25.9
Rock Phos-phate	I	19.4	37.9	3.88	25.1	30.5	25.5
	II	18.4	29.6	3.54	29.0	34.8	29.5
	III	16.5	29.1	3.32	28.8	33.5	28.7
	IV	17.4	43.0	4.25	30.8	34.8	20.3
	V	15.9	26.2	4.42	29.4	34.3	20.6

The number I denotes application of manure at the beginning of the present season (1934-35) ; II, application in the previous season, etc.

*The Adco treated straw was dried out in June and had to be completely re-wetted. The analysis given on p. 146 shows that the compost was particularly deficient in nitrogen (0.33%N). A reasonable figure wonld be 0.5%N.

https://doi.org/10.23637/ERADOC-1-67

SIX COURSE ROTATION EXPERIMENT,

SEASONAL EFFECTS OF N, P_2O_5 AND K_2O

(For details see 1932 Report, p. 131)

CULTIVATIONS, ETC.—ROTHAMSTED

	Sugar Beet	Barley	Clover Hay	Wheat	Potatoes	Rye
Variety	Kuhn	Plumage Archer	Broad Red	Yeoman	Ally	
Date of Sowing	April 29	March 13	April 24	Oct. 16	April 12	Oct. 27
Manures applied	April 29	March 8	Nov. 5, April 8	Oct. 9, Mar. 19	April 5,	Oct. 26, Mar. 20
Lime applied		March 4				Oct. 18
Date of harvesting	Oct. 30-Nov. 4	Aug. 12	Crop failed	Aug. 10	Oct. 15	July 29
Previous crop	Rye	Sugar beet	Barley	Clover	Wheat	Potatoes
Cultivations—						
Ploughing	Sept. 13, Feb. 11, 12	Jan. 7-8		Sept. 15	Sept. 10, Mar. 18	Oct. 18
Harrowing	Sept. 25, 27, Oct. 13, April 24, 29	Mar. 7, 14, April 18,		Oct. 16, Mar. 21,	Sept. 27, April 2, 3, May 7, 16	Oct. 26, 27 Mar. 21
Rolling	Oct. 13, April 29, 30	Mar. 15, April 18		Mar. 26	April 2, 3, May 7	Oct. 27
Singling	June 12, 13					
Hoeing	June 3, 15, 27 July 17, 27					
Ridging					April 3, May 25, July 17	
Grubbing					June 25, July 8	

L

https://doi.org/10.23637/ERADOC-1-67

CULTIVATIONS, ETC.—WOBURN

	Sugar Beet	Barley	Clover Hay	Wheat	Potatoes	Rye
Variety	Kuhn	Plumage Archer	Broad Red	Yeoman	Ally	
Date of sowing	April 29	March 6	May 1	Nov. 6 Resown Nov. 19	April 5	Nov. 3
Manures applied	April 29	March 7, April 5,	Nov. 7, Mar. 19,	Nov. 7, Mar. 19	April 5,	Nov. 3, Mar. 28
Lime applied		March 5				Oct. 12
Date of harvesting	Nov. 19	Aug. 6	July 24	Aug. 8	Oct. 2	July 24
Previous crop	Rye	Sugar Beet	Barley	Clover failed	Wheat	Potatoes
Cultivations—						
Ploughing	Oct. 4-5, Feb. 20	Jan. 7-10		July 20-21	Oct. 5, Mar. 4	Oct. 5-8
Harrowing	Oct. 15, 16, Mar. 19, April 3, 15, 29	Mar. 6, 19	May 1, Mar. 19	Oct. 27, Nov. 6, Mar 6, 19, 28, Apr. 15, May 2, 8,	Oct. 10, Nov. 6, Mar. 19, Apr. 3, 29 June 4	Oct. 30, Nov. 3, Mar. 6, 28, Apr. 15, May 2
Rolling	Mar. 26, Apr. 29	Mar. 6, 19	Mar. 20	Mar. 20	Mar. 26	Mar. 21
Singling	June 6-11					
Hoeing	June 4, 20, 27-30, Sept. 9-10			May 28-30	June 4, July 2,	
Ridging					April 4, 5, May 8, July 9	

Note: The green manure crop of rye immediately preceding sugar beet (see 1932 Report, p. 131) was discontinued in 1934-5, both at Rothamsted and Woburn. Thus there are now only two green manure crops, mustard after rye before sugar beet, and rye after wheat before potatoes.

https://doi.org/10.23637/ERADOC-1-67

ROTHAMSTED, 1935

Barley*—BB, plots 1-15
Yields in lb., grain above, straw below.

4K 109.2 132.8	**1K** 100.7 119.3	**1N** 94.6 111.4	**ON** 89.0 104.0	**3P** 101.8 126.2
0K 109.3 134.2	**3K** 108.6 134.9	**4N** 107.5 140.5	**1P** 103.3 122.2	**2P** 105.6 128.4
2K 113.4 140.6	**3N** 107.9 144.1	**2N** 107.2 123.8	**4P** 107.7 126.8	**0P** 91.9 108.6

N ↑

Potatoes—BP, plots 16-30
Yields in lb.

4P 358	**0P** 360	**3K** 400	**4K** 428	**4N** 381
1P 356	**3P** 366	**2K** 415	**1N** 397	**0N** 306
2P 398	**1K** 368	**0K** 368	**3N** 402	**2N** 370

Rye—BR, Plots 31-45
Yields in lb., grain above, straw below

3P 54.9 147.1	**1P** 53.7 154.3	**1N** 60.0 141.0	**3N** 51.4 156.1	**4K** 49.8 139.2
4P 62.2 163.8	**2P** 49.9 154.6	**0N** 60.4 149.1	**0K** 60.9 153.1	**1K** 56.0 155.0
0P 59.6 135.4	**4N** 51.4 159.1	**2N** 56.1 148.4	**3K** 61.0 149.0	**2K** 55.5 151.0

N ↑

Sugar Beet—BS, plots 46-60
Yields in lb., roots (dirty) above, tops centre, sugar percentage below

4K 472 365 18.06	**1K** 470 343 17.37	**2N** 574 584 17.28	**0N** 544 441 17.83	**3P** 503 439 17.40
2K 476 458 17.02	**0K** 525 566 16.79	**3N** 496 625 16.77	**4P** 525 342 17.32	**2P** 562 480 17.74
3K 537 528 17.74	**1N** 566 541 17.80	**4N** 566 672 17.11	**1P** 596 590 17.49	**0P** 637 626 17.63

Clover Hay—BC, plots 61-75
Crop failed

0P —	**1P** —	**2N** —	**1N** —	**2K** —
4P —	**2P** —	**3N** —	**1K** —	**0K** —
3P —	**4N** —	**0N** —	**3K** —	**4K** —

N ↑

Wheat—BW, plots 76-90
Yields in lb., grain above, straw below

0K 70.8 116.2	**1K** 71.1 116.9	**4N** 74.0 125.0	**1N** 65.2 110.8	**1P** 72.4 131.6
3K 78.8 131.2	**4K** 78.3 130.7	**0N** 64.0 94.5	**3P** 65.9 109.1	**4P** 72.9 122.6
2K 82.1 137.4	**3N** 80.3 131.7	**2N** 65.3 102.2	**0P** 62.8 99.7	**2P** 58.0 104.5

* A mistake was made in the fertiliser applications to barley at both Rothamsted and Woburn. The varying nitrogen dressings were applied to the five plots which should have had varying quantities of potash, and *vice versa*. The rate of application of potash to the barley was also too high. A unit dressing was 0.374 cwt. K_2O per acre instead of 0.25 cwt. The rates of application of N and P_2O_5 were correct. The plan shows the actual treatments which were given.

https://doi.org/10.23637/ERADOC-1-67

WOBURN, 1935

Clover Hay—CC, Plots 1-15
Yields in lb., green weights

3K 141.0	0K 115.0	4P 170.0	3P 130.0	4N 75.0
4K 215.0	1K 100.0	1P 166.0	1N 176.0	3N 68.0
2K 58.5	0P 70.0	2P 128.0	2N 125.0	0N 153.0

N.W. ↑

Wheat—CW, Plots 16-30
Yields in lb., grain above, straw below

3N 40.2 65.2	1N 17.9 27.1	0P 33.7 53.5	4P 35.0 58.0	3K 34.7 57.0
2N 31.7 51.0	0N 11.5 14.0	2P 34.0 51.0	1K 38.2 55.0	0K 42.0 65.5
4N 46.2 80.5	3P 37.7 57.0	1P 38.7 60.0	4K 44.0 69.0	2K 39.2 60.5

Barley*—CB, Plots 31-45
Yields in lb., grain above, straw below

4N 67.0 92.5	0N 44.2 54.7	4P 73.5 91.5	2P 80.5 103.5	2K 80.2 100.2
1N 49.5 53.0	3N 69.2 83.2	1P 74.7 85.0	1K 79.7 94.7	3K 85.0 93.0
2N 61.2 63.0	3P 63.0 69.0	0P 69.5 75.5	0K 71.2 78.0	4K 74.0 84.0

N.W. ↑

Rye—CR, Plots 46-60
Yields in lb., grain above, straw below

2P 43.5 85.7	1P 48.0 92.2	4K 49.0 91.7	1K 55.5 102.7	1N 43.0 77.7
3P 50.0 90.7	4P 47.0 87.7	2K 52.0 104.7	4N 62.5 123.7	0N 40.5 68.7
0P 49.5 88.2	3K 47.0 87.7	0K 55.0 105.7	2N 55.2 104.7	3N 57.0 110.7

Potatoes—CP, Plots 61-75
Yields in lb.

2P 389	1P 356	3N 441	0N 381	4K 437
0P 356	3P 372	1N 409	2K 451	1K 381
4P 393	4N 372	2N 366	0K 409	3K 384

N.W. ↑

Sugar Beet—CS, Plots 76-90
Yields in lb., roots (dirty) above, tops centre, sugar percentage below

1N 395 309 15.81	2N 375 301 15.66	0P 477 356 15.95	1P 505 337 15.66	2K 441 326 15.61
3N 441 331 15.52	0N 373 296 15.75	4P 531 373 15.66	1K 543 363 16.21	0K 456 304 15.12
4N 510 283 15.70	2P 507 340 15.92	3P 530 346 15.72	3K 485 325 16.16	4K 431 341 16.07

* Error in manuring (see p. 163).

https://doi.org/10.23637/ERADOC-1-67

ROTHAMSTED, 1935

1.—Mean yields per acre and increments in yield per cwt. of N, P_2O_5 and K_2O.

		Average, 1930-34	1935	Standard error, 1935			Average, 1930-34	1935	Standard error, 1935
Sugar Beet Roots (washed) tons	Yield	6.72	8.56		**Clover Hay** Dry matter cwt.	Yield	19.5*		
	N	0.81	−0.28	±1.10		N	15.8*	**	
	P	0.24	**−3.38**	±1.10		P	−0.4*		
	K	0.27	−0.24	±0.66		K	1.2*		
Tops tons	Yield	8.71	9.05		**Wheat** Grain cwt.	Yield	24.6	25.3	
	N	3.06	**6.51**	±2.39		N	2.7†	8.4	±4.1
	P	−0.30	**−8.56**	±2.39		P	0.4	3.3	±4.1
	K	−0.48	−1.55	±1.43		K	1.2	3.2	±2.5
Sugar percentage	Mean	16.81	17.42		Straw cwt.	Yield	47.9	42.0	
	N	−0.23	**−1.65**	±0.50		N	20.1†	**19.3**	±8.3
	P	−0.68	−0.47	±0.50		P	1.8	5.6	±8.3
	K	0.39	**1.16**	±0.30		K	1.7	6.2	±5.0
Total Sugar cwt.	Yield	23.3	29.8		**Potatoes** tons	Yield	6.47	6.75	
	N	2.4	−3.8	—		N	1.87	1.85	±0.93
	P	−0.2	−12.7	—		P	0.98	0.07	±0.93
	K	1.6	1.0	—		K	3.26	1.08	±0.56
Barley§ Grain cwt.	Yield	26.7	37.1		**Rye** Grain cwt.	Yield	30.2‡	20.1	
	N	4.0	**11.9**	±3.5		N	3.5‡	−6.3	±3.1
	P	3.6	7.3	±3.5		P	0.6‡	1.5	±3.1
	K	0.7	0.7	±1.4		K	1.2‡	−2.5	±1.9
Straw cwt.	Yield	31.3	45.2		Straw cwt.	Yield	49.3‡	53.7	
	N	9.9	**25.3**	±5.3		N	2.4‡	8.4	±4.4
	P	7.9	9.7	±5.3		P	4.4‡	**11.7**	±4.4
	K	3.3	1.2	±2.1		K	−2.8‡	−4.9	±2.7

*4 years only, 1933 crop failed. §Error in manuring (see p. 163). † 1931-34. ‡1934 only. **crop failed. Significant results in heavy type. Negative sign means depression.

2.—Average percentage increments in yield for each application of N, P_2O_5 and K_2O.

	N		P		K		Standard error, 1935
	Average, 1930-34	1935	Average, 1930-34	1935	Average, 1930-34	1935	
Sugar Beet—Roots (washed)	1.35	—0.49	0.82	**—5.92**	1.61	—0.71	±1.92
Tops	5.60	**10.79**	−0.61	**−14.19**	−0.56	−4.28	±3.96
Sugar percentage	0.26	**−1.42**	−0.41	−0.41	0.58	**1.67**	±0.43
Total sugar	1.09	−1.92	0.19	−6.37	2.27	0.85	—
Barley§—Grain	2.69	**4.82**	2.18	2.94	0.69	0.75	±1.42
Straw	5.06	**8.39**	3.83	3.21	2.62	1.02	±1.75
Clover Hay—Dry matter	9.92*	—	−3.90*	—	0.80*	—	—
Wheat—Grain	2.92†	4.99	0.38	1.94	0.99	3.20	±2.45
Straw	7.36†	**6.90**	0.30	2.00	0.52	3.67	±2.98
Potatoes	4.39	4.10	2.51	0.15	12.34	4.01	±2.06
Rye—Grain	1.72‡	−4.68	0.33‡	1.10	1.02‡	−3.09	±2.33
Straw	0.73‡	2.34	1.34‡	**3.28**	−1.40‡	−2.27	±1.24

*4 years only, 1933 crop failed. §Error in manuring (see p. 163). †1931-34. ‡1934 only. Significant results in heavy type. Negative sign means depression.

https://doi.org/10.23637/ERADOC-1-67

WOBURN, 1935

1.—Mean yields per acre and increments in yield per cwt. of N, P_2O_5 and K_2O.

		Average, 1930-34	1935	Standard error, 1935			Average, 1930-34	1935	Standard error, 1935
Sugar Beet Roots (washed) tons	Yield	7.12	6.38		**Clover Hay** Dry matter cwt.	Yield	24.6**	12.3	
	N	3.31	**2.91**	±0.98		N	−9.2**	−17.2	±7.9
	P	−1.24	1.21	±0.98		P	−8.4**	10.7	±7.9
	K	1.09	−0.59	±0.58		K	7.5**	9.4	±4.8
Tops tons	Yield	6.71	5.87		**Wheat** Grain cwt.	Yield	9.2†	12.5	
	N	2.45	−0.05	±0.76		N	12.0†	**21.9**	±2.4
	P	−0.29	0.51	±0.76		P	−1.3†	0.5	±2.4
	K	2.00	0.26	±0.46		K	−1.0†	0.1	±1.4
Sugar percentage	Mean	17.06	15.77		Straw cwt.	Yield	23.6†	19.6	
	N	−1.17	−0.26	±0.55		N	28.0†	**40.8**	±3.5
	P	0.03	−0.35	±0.55		P	−2.2†	1.5	±3.5
	K	0.79	**0.74**	±0.33		K	−4.3†	1.3	±2.1
Total Sugar cwt.	Yield	24.3	20.1		**Potatoes** tons	Yield	9.19	7.02	
	N	9.7	8.8			N	4.74	0.17	±1.11
	P	−4.2	3.3			P	0.68	1.07	±1.11
	K	4.8	−1.0			K	0.80	0.42	±0.66
Barley* Grain cwt.	Yield	22.5	24.8		**Rye** Grain cwt.	Yield	23.1‡	18.0	
	N	18.7	**15.5**	±4.6		N	0.8‡	**13.7**	±2.0
	P	1.3	−0.9	±4.6		P	−7.0‡	−0.7	±2.0
	K	3.0	1.0	±1.8		K	−0.6‡	**−2.9**	±1.2
Straw cwt.	Yield	40.1	29.1		Straw cwt.	Yield	35.8‡	33.9	
	N	25.4	**25.2**	±8.5		N	4.5‡	**34.1**	±3.5
	P	−0.9	3.7	±8.5		P	−7.9‡	−0.6	±3.5
	K	4.9	1.0	±3.4		K	−1.8‡	**−6.2**	±2.1

*Error in manuring (see p. 163). †1931-34. ‡1934 only. **1931-33. Significant results in heavy type. Negative sign means depression.

2.—Average percentage increments in yield for each application of N, P_2O_5 and K_2O.

	N		P		K		Standard error, 1935
	Average, 1930-34	1935	Average, 1930-34	1935	Average, 1930-34	1935	
Sugar Beet—Roots (washed)	5.97	**6.85**	−2.38	2.85	4.56	−2.30	±2.29
Tops	5.27	−0.12	−0.65	1.29	6.93	1.09	±1.96
Sugar percentage	−0.67	−0.25	0.04	−0.33	1.15	**1.17**	±0.52
Total sugar	5.05	6.56	−2.33	2.48	5.52	−1.19	
Barley*—Grain	13.21	**9.35**	0.66	−0.56	3.77	1.57	±2.76
Straw	9.83	**13.01**	−0.19	1.93	2.90	1.31	±4.39
Clover Hay—Dry matter	−5.58**	−20.94	−4.94**	13.07	7.39**	19.16	±9.66
Wheat—Grain	15.30†	**26.27**	−2.40†	0.56	0.94†	0.16	±2.83
Straw	16.93†	**31.18**	−2.11†	1.12	−0.08†	1.63	±2.71
Potatoes	8.47	0.36	0.47	2.28	1.86	1.51	±2.36
Rye—Grain	0.52‡	**11.46**	−4.55‡	−0.56	−0.61‡	**−4.00**	±1.63
Straw	1.90‡	**15.08**	−3.30‡	−0.26	−1.23‡	**−4.55**	±1.57

*Error in manuring (see p. 163). **1931-33. †1931-34. ‡1934 only. Significant results in heavy type. Negative sign means depression.

https://doi.org/10.23637/ERADOC-1-67

THREE COURSE ROTATION EXPERIMENT ROTHAMSTED, 1935

EFFECT OF PLOUGHING IN STRAW AND OF WINTER GREEN-MANURE CROPS

For details see 1933 Report, p. 118.

CULTIVATIONS, ETC.

	Barley	Sugar Beet	Potatoes
Variety ..	Plumage Archer	Kuhn	Ally
Date of sowing	March 13	April 29	April 12
Manures applied			
Artificials ..	October 19, March 7	September 11, April 29	November 2, April 6-8
Adco and Straw	October 19	September 11	November 2
Date of Harvesting	August 12	October 22-23	October 15
Previous crop ..	Potatoes	Barley	Sugar Beet
Cultivations—			
Ploughing ..	October 19-20, February 19-20	September 11-12, April 1	November 3, March 20-21
Harrowing ..	October 27, March 13	September 25, 27, April 24, 29	November 5, April 2, 3, May 7, 16
Rolling ..	October 27, March 15	September 27, April 29	April 2, 3, May 7
Singling ..		June 13-14	
Hoeing ..		June 15, 27, July 17, 27	July 9
Ridging ..			April 3, May 24, July 19
Grubbing ..			June 25, July 9

GREEN MANURE CROPS—GREEN WEIGHTS—TONS PER ACRE

Preceding		Manured 1934-35					Manured 1933-34				
		Art'ls.	Adco	St. 1	St. 2	*Mean*	Art'ls.	Adco	St. 1	St. 2	*Mean*
Barley	Vetches	0.58	0.51	0.64	0.64	*0.59*	0.71	0.59	0.78	0.75	*0.71*
	Rye ..	1.79	1.72	1.49	1.77	*1.69*	2.13	1.51	1.63	1.88	*1.79*
Sugar Beet	Vetches	0.49	0.53	0.62	0.51	*0.54*	0.36	0.34	0.45	0.60	*0.44*
	Rye ..	3.67	5.60	2.30	4.21	*3.94*	4.64	3.28	3.92	5.24	*4.27*
Potatoes	Vetches	0.27	0.44	0.29	0.39	*0.35*	0.30	0.24	0.30	0.34	*0.30*
	Rye ..	1.46	1.10	0.94	1.32	*1.20*	1.66	1.52	1.49	1.60	*1.57*

PERCENTAGE DRY MATTER

Preceding		Sample 1	Sample 2
Barley ..	Vetches	5.92	7.22
	Rye	9.96	8.71
Sugar Beet	Vetches	8.16	8.33
	Rye	12.94	13.51
Potatoes ..	Vetches	6.52	9.91
	Rye	13.80	14.15

For each break of the rotation, two large samples each of rye and vetches were taken for dry matter determination. These were weighed fresh, dried at 100°C, cleaned from soil as far as possible and weighed again. The dry matter percentages thus include a dirt tare correction.

https://doi.org/10.23637/ERADOC-1-67

PLAN AND YIELDS

Barley—DB, Plots 49-72. Yields in lb. grain above, straw below.

St 1 R I 86.8 110.2	Ad R I 84.5 100.2	Ad V II 87.5 106.5	Ad V I 83.2 99.3	Ad R II 72.9 78.6	St 1 V I 87.8 105.2
St 1 O I 89.4 107.1	St 2 V II 87.0 110.0	St 1 V II 88.9 103.6	St 2 V I 85.2 109.6	St 2 R I 84.3 88.8	St 2 O I 88.6 94.5
Ar R I 83.8 103.2	Ar R II 76.9 82.0	Ar O I 84.1 109.9	Ad O I 82.1 91.2	St 1 O II 84.5 97.0	Ar V II 82.0 103.1
St 1 R II 73.1 84.9	Ad O II 79.7 90.9	St 2 R II 73.3 81.7	St 2 O II 80.1 94.9	Ar V I 65.2 117.8	Ar O II 80.5 96.2

Sugar Beet—DS, Plots 25-48. Yields in lb. roots (dirty) above, tops centre, sugar percentage below.

St 1 O II 551 412 17.46	Ad O I 522 396 18.18	Ad R II 507 344 18.32	Ar V II 564 390 18.35	Ar R I 569 476 17.95	St 2 O I 560 438 18.01
St 2 O II 507 517 17.37	Ad V II 538 522 17.63	St 2 R I 572 433 19.24	St 2 V I 614 486 18.35	St 1 R II 540 350 18.64	Ar O I 561 480 17.77
Ar R II 446 451 17.98	Ad O II 528 542 17.92	St 2 R II 522 351 18.58	St 1 V I 594 466 18.35	St 1 R I 540 374 18.69	Ad V I 496 340 18.24
Ad R I 489 330 17.98	Ar V I 447 472 17.23	St 1 O I 442 436 17.72	Ar O II 429 340 18.29	St 2 V II 449 378 18.15	St 1 V II 428 352 18.15

Potatoes—DP, Plots 1-24. Yields in lb.

St 1 R II 274	St 2 R I 336	Ar R I 300	St 2 O II 246	Ar O II 200	Ad O I 337
St 1 O I 382	St 2 R II 308	St 1 O II 248	Ar V II 211	Ad O II 245	St 2 O I 302
Ar R II 248	St 2 V II 256	Ar V I 348	St 1 R I 384	Ad R I 280	St 1 V II 243
Ad V II 330	Ar O I 322	Ad V I 239	St 2 V I 324	St 1 V I 342	Ad R II 251

https://doi.org/10.23637/ERADOC-1-67

SUMMARY OF RESULTS

		Manured 1934-35					Manured 1933-34				
		Artificials.	Adco.*	Straw. St. 1	Straw. St. 2.	*Mean.*	Artificials.	Adco.	Straw. St. 1	Straw. St. 2	*Mean.*
Barley Grain cwt. p.a.	None	37.6	36.7	39.9	39.6	*38.4*	35.9	35.6	37.7	35.8	*36.2*
	Vetches	29.1	37.2	39.2	38.1	*35.9*	36.6	39.1	39.7	38.8	*38.6*
	Rye	37.4	37.8	38.8	37.6	*37.9*	34.4	32.6	32.6	32.7	*33.1*
	Mean	*34.7*	*37.2*	*39.3*	*38.4*	*37.4*	*35.6*	*35.8*	*36.7*	*35.8*	*36.0*
Straw cwt. p.a.	None	49.1	40.8	47.8	42.2	*45.0*	43.0	40.6	43.3	42.4	*42.3*
	Vetches	52.6	44.4	47.0	49.0	*48.2*	46.0	47.6	46.3	49.1	*47.2*
	Rye	46.1	44.7	49.2	39.7	*44.9*	36.6	35.1	37.9	36.5	*36.5*
	Mean	*49.3*	*43.3*	*48.0*	*43.6*	*46.0*	*41.9*	*41.1*	*42.5*	*42.7*	*42.0*
Sugar Beet Roots (Washed) Tons p.a.	None	11.22	10.44	8.84	11.20	*10.42*	8.58	10.56	11.02	10.14	*10.08*
	Vetches	8.94	9.92	11.88	12.29	*10.76*	11.28	10.76	8.56	8.98	*9.90*
	Rye	11.38	9.78	10.80	11.44	*10.85*	8.92	10.14	10.80	10.44	*10.08*
	Mean	*10.51*	*10.05*	*10.51*	*11.64*	*10.68*	*9.59*	*10.49*	*10.13*	*9.85*	*10.02*
Tops Tons p.a.	None	10.71	8.84	9.73	9.78	*9.76*	7.59	12.10	9.20	11.54	*10.11*
	Vetches	10.54	7.59	10.40	10.85	*9.84*	8.70	11.65	7.86	8.44	*9.16*
	Rye	10.62	7.37	8.35	9.66	*9.00*	10.07	7.68	7.81	7.83	*8.35*
	Mean	*10.62*	*7.93*	*9.49*[1]	*10.10*	*9.53*	*8.79*	*10.48*	*8.29*	*9.27*	*9.21*
Sugar percentage	None	17.77	18.18	17.72	18.01	*17.92*	18.29	17.92	17.46	17.37	*17.76*
	Vetches	17.23	18.24	18.35	18.35	*18.04*	18.35	17.63	18.15	18.15	*18·07*
	Rye	17.95	17.98	18.69	19.24	*18.46*	17.98	18.32	18.64	18.58	*18.38*
	Mean	*17.65*	*18.13*	*18.25*	*18.53*	*18.14*	*18.21*	*17.96*	*18.08*	*18.03*	*18.07*
Total sugar cwt. p.a.	None	39.9	38.0	31.3	40.3	*37.4*	31.4	37.8	38.5	35.2	*35.7*
	Vetches	30.8	36.2	43.6	45.1	*38.9*	41.4	37.9	31.1	32.6	*35.8*
	Rye	40.8	35.2	40.4	44.0	*40.1*	32.1	37.2	40.3	38.8	*37.1*
	Mean	*37.2*	*36.5*	*38.4*	*43.1*	*38.8*	*35.0*	*37.6*	*36.6*	*35.5*	*36.2*
Potatoes Tons p.a.	None	7.19	7.52	8.53	6.74	*7.50*	4.46	5.47	5.54	5.49	*5.24*
	Vetches	7.77	5.33	7.63	7.23	*6.99*	4.71	7.37	5.42	5.71	*5.80*
	Rye	6.70	6.25	8.57	7.50	*7.26*	5.54	5.60	6.12	6.87	*6.03*
	Mean	*7.22*	*6.37*	*8.24*	*7.16*	*7.25*	*4.90*	*6.15*	*5.69*	*6.02*	*5.69*

*The Adco treated straw was dried out in June and had to be completely re-wetted. The analysis given on page 146 shows that the compost was particularly deficient in nitrogen (0.33% N). A reasonable figure would be 0.5% N.

https://doi.org/10.23637/ERADOC-1-67

LONG PERIOD CULTIVATION EXPERIMENT, 1935

LONG HOOS V

(For details see 1934 Report, p. 175)

CULTIVATIONS, ETC.

	Wheat	Mangolds	Barley
Variety	Victor	Yellow Globe	Plumage Archer
Date of sowing	Oct. 19	May 1	Mar. 23
Manures applied—			
Cyanamide	Mar. 20	April 30	Mar. 13
Nitro-chalk	Mar. 20	July 4	Mar. 13
Super. & mur. pot.	—	April 30	—
Date of harvesting	Aug. 10	Oct. 29	Aug. 12
Previous crop	Barley	Wheat	Mangolds
Cultivations—			
Ploughing	Sept. 26	Mar. 25	Nov. 27, Mar. 12
Simaring	Sept. 26	Mar. 25	Mar. 12
Cultivating	Sept. 26	Mar. 25	Nov. 27, Mar. 12
Harrowing	Oct. 19, Mar. 21	April 3, 18, May 1	Mar. 18, 20, 22, 23
Hoeing	—	June 3, 11, July 4, 18	—
Rolling	Mar. 26	May 1	Mar. 22, 25
Singling	—	June 25, 26	—

PLAN AND YIELDS IN LB.

Barley
Grain left, straw right

N ↑

1	P D Cy	57.2	65.3	C D N	61.9	74.6	73
	P Sh Cy	52.9	59.6	S D N	62.7	71.3	
	S D N	60.5	66.5	S Sh Cy	57.3	62.7	
	C Sh N	58.6	66.4	P D Cy	60.3	66.2	
	S Sh Cy	51.7	55.8	S Sh N	59.2	67.3	
	C D N	56.5	64.5	P D N	61.5	73.0	
B	S D Cy	57.1	59.9	P Sh N	58.3	68.2	A
	C Sh Cy	57.4	63.1	S D Cy	59.7	64.3	
	C D Cy	61.1	67.9	C D Cy	62.1	66.9	
	S Sh N	61.2	66.8	C Sh N	60.5	68.5	
	P Sh N	60.6	67.9	C Sh Cy	55.7	61.3	
	P D N	58.9	69.6	P Sh Cy	59.2	68.8	
	C Sh N	60.1	67.4	C D Cy	56.2	63.8	
	S Sh Cy	60.9	67.1	P Sh Cy	68.3	75.7	
	P D Cy	63.9	74.6	S D Cy	67.5	80.0	
	C D Cy	65.5	73.0	P D Cy	64.9	78.6	
	C Sh Cy	58.9	66.6	S Sh N	64.6	74.4	
	P Sh Cy	62.0	65.5	C Sh Cy	65.8	72.7	
C	S Sh N	60.4	67.6	S D N	65.4	71.6	C
	C D N	59.3	62.7	C D N	63.2	67.3	
	S D N	57.7	63.8	P Sh N	63.6	71.9	
	P Sh N	62.7	71.3	P D N	68.1	80.4	
	S D Cy	57.2	60.3	S Sh Cy	61.4	68.1	
	P D N	48.6	56.4	C Sh N	47.9	51.6	

https://doi.org/10.23637/ERADOC-1-67

Mangolds

Roots left, tops right

	S Sh N	253	84		S Sh N	296	82	
	C Sh N	334	92		S D Cy	326	72	
	C Sh Cy	260	71		P Sh Cy	349	84	
	P D N	424	90		P Sh N	404	101	
	C D N	416	88		P D Cy	462	96	
C	P Sh Cy	429	98		C D Cy	354	70	C
	C D Cy	411	83		S D N	394	89	
	S D Cy	420	85		P D N	408	81	
	P Sh N	422	102		S Sh Cy	294	66	
	S Sh Cy	376	76		C Sh N	96	50	
	S D N	431	88		C D N	320	86	
	P D Cy	428	94		C Sh Cy	209	76	
	S Sh Cy	398	92		S Sh N	270	80	
	P D N	420	94		S D N	330	88	
	P D Cy	355	78		P Sh Cy	365	86	
	P Sh Cy	365	81		C Sh N	372	92	
	C D Cy	379	88		P Sh N	346	94	
	S D Cy	406	85		P D Cy	272	69	
A	C D N	386	92		S D Cy	343	80	B
	C Sh Cy	350	72		C D N	291	82	
	P Sh N	400	94		C Sh Cy	278	70	
	C Sh N	337	92		C D Cy	288	76	
	S D N	366	91		S Sh Cy	326	82	
	S Sh N	334	99		P D N	373	96	

Wheat

Grain left, straw right.

	C Sh N	19.9	37.1		C Sh Cy	26.9	38.1	
	S Sh N	36.8	64.2		C D Cy	33.0	52.0	
	P Sh Cy	41.5	62.0		C Sh N	29.7	54.6	
	C D Cy	36.8	57.2		P D N	35.7	55.6	
	C Sh Cy	33.0	58.5		C D N	36.6	54.9	
	C D N	29.5	66.0		S Sh Cy	33.0	47.0	
C	S Sh Cy	33.9	57.1		S D N	39.3	62.7	A
	S D Cy	31.0	52.0		P Sh Cy	33.9	54.1	
	P D Cy	35.0	55.0		S D Cy	31.8	53.7	
	P Sh N	35.5	58.0		P D Cy	35.1	53.4	
	P D N	35.5	56.5		P Sh N	35.8	59.7	
	S D N	30.1	61.4		S Sh N	33.1	55.9	
	S Sh Cy	32.0	56.0		S D Cy	38.4	57.1	
	C D Cy	27.5	54.0		C D Cy	38.0	55.8	
	C Sh Cy	27.3	52.2		C Sh Cy	38.2	53.3	
	P Sh Cy	32.3	51.7		P Sh N	41.1	78.9	
	C Sh N	32.1	57.2		C D N	38.0	53.5	
B	S Sh N	39.3	62.2		S Sh N	38.6	58.4	C
	C D N	37.1	67.9		S D N	35.0	57.5	
	P D Cy	41.4	57.1		S Sh Cy	39.2	60.3	
	S D N	41.3	65.7		P D Cy	40.4	58.1	
	P D N	46.1	72.9		P D N	41.3	67.2	
	S D Cy	40.6	65.9		C Sh N	43.6	72.4	
72	P Sh N	49.3	76.2		P Sh Cy	48.3	71.7	144

https://doi.org/10.23637/ERADOC-1-67

Summary of Results

	Continuous				Cycle A			Cycle B			
Last year	P P	S S	C C	*Mean*	C P	P S	S C	S P	C S	P C	*Mean*
WHEAT					GRAIN : cwt. per acre						
N D	22.3	18.9	19.6	*20.3*	20.7	22.8	21.2	26.8	24.0	21.5	*22.8*
N Sh	22.2	21.9	18.4	*20.8*	20.8	19.2	17.2	28.6	22.8	18.6	*21.2*
Cy D	21.9	20.1	21.7	*21.2*	20.4	18.4	19.2	24.0	23.6	16.0	*20.3*
Cy Sh	26.0	21.2	20.7	*22.6*	19.7	19.2	15.6	18.7	18.6	15.8	17.9
St. errors		±1.65		*±0.953*							
					STRAW : cwt. per acre						
N D	35.9	34.5	34.7	*35.0*	32.2	36.4	31.9	42.3	38.1	39.4	*36.7*
N Sh	39.7	35.6	31.8	*35.7*	34.6	32.4	31.6	44.2	36.1	33.2	*35.4*
Cy D	32.8	31.6	32.8	*32.4*	31.0	31.2	30.2	33.1	38.2	31.3	*32.5*
Cy Sh	38.8	34.1	32.4	*35.1*	31.4	27.3	22.1	30.0	32.5	30.3	*28.9*
St. errors		±3.79		*±2.19*							
MANGOLDS					ROOTS : tons per acre						
N D	24.14	23.94	21.36	*23.15*	24.37	21.24	22.40	21.65	19.15	16.89	*20.95*
N Sh	23.97	15.93	12.48	*17.46*	23.21	19.38	19.56	20.08	15.67	21.59	*19.92*
Cy D	25.82	21.65	22.20	*23.22*	20.60	23.56	22.00	15.78	19.91	16.71	*19.76*
Cy Sh	22.58	19.44	13.61	*18.54*	21.18	23.10	20.31	21.18	18.92	16.13	*20.14*
St. errors		±2.12		*±1.22*							
					TOPS : tons per acre						
N D	4.96	5.14	5.03	*5.04*	5.48	5.28	5.37	5.54	5.08	4.76	*5.25*
N Sh	5.90	4.83	4.11	*4.95*	5.43	5.74	5.31	5.46	4.61	5.34	*5.32*
Cy D	5.50	4.57	4.45	*4.84*	4.53	4.93	5.08	4.00	4.64	4.41	*4.60*
Cy Sh	5.28	4.12	4.28	*4.56*	4.70	5.34	4.18	5.02	4.76	4.09	*4.68*
St. errors		±0.366		*±0.211*							
BARLEY					GRAIN : cwt. per acre						
N D	33.9	35.7	35.5	*35.0*	35.7	36.4	35.9	34.2	35.1	32.8	*35.0*
N Sh	36.6	36.3	31.3	*34.7*	33.8	34.4	35.1	35.2	35.5	34.0	*34.7*
Cy D	37.4	36.2	35.3	*36.3*	35.0	34.6	36.0	33.2	33.1	35.4	*34.6*
Cy Sh	37.8	35.5	36.2	*36.5*	34.4	33.2	32.3	30.7	30.0	33.3	*32.3*
St. errors		±2.43		*±1.40*							
					STRAW : cwt. per acre						
N D	39.7	39.3	37.7	*38.9*	42.4	41.4	43.3	40.4	38.6	37.4	*40.6*
N Sh	41.6	41.2	34.5	*39.1*	39.6	39.0	39.8	39.4	38.8	38.5	*39.2*
Cy D	44.4	40.7	39.7	*41.6*	38.4	37.3	38.8	37.9	34.8	39.4	*37.8*
Cy Sh	41.0	39.2	40.4	*40.2*	39.9	36.4	35.6	34.6	32.4	36.6	*35.9*
St. errors		±3.14		*±1.81*							

https://doi.org/10.23637/ERADOC-1-67

Mean of Nitro-Chalk and Cyanamide

	Continuous				Cycle A			Cycle B			
Last Year / This year	P P	S S	C C	*Mean*	C P	P S	S C	S P	C S	P C	*Mean*
WHEAT					GRAIN : cwt. per acre						
D ..	22.1[1]	19.5[1]	20.6[1]	*20.7*[3]	20.6	20.6	20.2	25.4	23.8	18.8	*21.6*
Sh ..	24.1[1]	21.6[1]	19.6[1]	*21.8*[3]	20.2	19.2	16.4	23.6	20.7	17.2	*19.6*
Mean	*23.1*[2]	*20.6*[2]	*20.1*[2]	*21.3*	*20.4*	*19.9*	*18.3*	*24.5*	*22.2*	*18.0*	*20.6*
St. errors (1) ±1.17, (2) ± 0.827, (3) ±0.676											
					STRAW : cwt. per acre						
D	34.4[1]	33.0[1]	33.8[1]	*33.7*[3]	31.6	33.8	31.0	37.7	38.2	35.4	*34.6*
Sh	39.2[1]	34.8[1]	32.1[1]	*35.4*[3]	33.0	29.8	26.8	37.1	34.3	31.8	*32.1*
Mean	*36.8*[2]	*33.9*[2]	*33.0*[2]	*34.6*	*32.3*	*31.8*	*28.9*	*37.4*	*36.2*	*33.6*	*33.4*
St. errors (1) ±2.68, (2)±1.90, (3) ±1.55											
MANGOLDS					ROOTS : tons per acre						
D	24.98[1]	22.80[1]	21.78[1]	*23.19*[3]	22.48	22.40	22.20	18.72	19.53	16.80	*20.36*
Sh	23.28[1]	17.68[1]	13.04[1]	*18.00*[3]	22.20	21.24	19.94	20.63	17.30	18.86	*20.03*
Mean	*24.13*[2]	*20.24*[2]	*17.41*[2]	*20.59*	*22.34*	*21.82*	*21.07*	*19.68*	*18.42*	*17.83*	*20.19*
St. errors (1) ±1.50, (2) ±1.06, (3) ±0.866											
					TOPS : tons per acre						
D	5.23[1]	4.86[1]	4.74[1]	*4.94*[3]	5.00	5.10	5.22	4.77	4.86	4.58	*4.92*
Sh	5.59[1]	4.48[1]	4.20[1]	*4.76*[3]	5.06	5.54	4.74	5.24	4.68	4.72	*5.00*
Mean	*5.41*[2]	*4.67*[2]	*4.47*[2]	*4.85*	*5.03*	*5.32*	*4.98*	*5.00*	*4.77*	*4.65*	*4.96*
St. errors (1) ±0.259 (2) ±0.183, (3) ±0.150											
BARLEY					GRAIN : cwt. per acre						
D	35.6[1]	36.0[1]	35.4[1]	*35.7*[3]	35.4	35.5	36.0	33.7	34.1	34.1	*34.8*
Sh	37.2[1]	35.9[1]	33.8[1]	*35.6*[3]	34.1	33.8	33.7	33.0	32.8	33.6	*33.5*
Mean	*36.4*[2]	*36.0*[2]	*34.6*[2]	*35.6*	*34.8*	*34.6*	*34.8*	*33.4*	*33.4*	*33.8*	*34.1*
St. errors (1) ±1.72, (2) ±1.22, (3) ±0.993											
					STRAW : cwt. per acre						
D	42.0[1]	40.0[1]	38.7[1]	*40.2*[3]	40.4	39.4	41.0	39.2	36.7	38.4	*39.2*
Sh	41.3[1]	40.2[1]	37.4[1]	*39,6*[3]	39.8	37.7	37.7	37.0	35.6	37.6	*37.6*
Mean	*41.6*[2]	*40.1*[2]	*38.0*[2]	*39.9*	*40.1*	*38.6*	*39.4*	*38.1*	*36.2*	*38.0*	*38.4*
St. errors (1) ±2.22, (2) ±1.57, (3) ±1.28											

https://doi.org/10.23637/ERADOC-1-67

Conclusions

On both mangolds and wheat the plots ploughed this year and last yielded significantly higher than the cultivated plots, the simared plots being intermediate. On the wheat similar differences appeared on the plots with rotating cultivations, but in the case of the mangolds the differences, though in the same direction, were much smaller.

In addition the shallow cultivations of the continuous part of the experiment gave lower yields than the deep cultivations, this difference being most marked on the cultivated plots and only small on the ploughed plots. No such difference appeared on the plots with rotating cultivations.

The yields of barley did not appear to be affected by the cultivations.

There were no observable differences between nitro-chalk and cyanamide.

THREE COURSE ROTATION EXPERIMENT, ROTHAMSTED, 1933

GREEN MANURE CROPS—GREEN WEIGHTS—TONS PER ACRE

Preceding		Manured 1932-33					Not yet manured				
		Art'ls.	Adco	St. 1.	St. 2	*Mean*	Art'ls.	Adco	St. 1	St. 2	*Mean*
Sugar Beet	Vetches	0.55	0.65	0.56	0.70	*0.62*	0.49	0.84	0.62	0.58	*0.63*
	Rye	1.02	0.78	0.75	0.92	*0.87*	1.29	1.08	0.78	1.11	*1.06*
Potatoes	Vetches	0.32	0.27	0.34	0.41	*0.34*	0.38	0.35	0.28	0.33	*0.34*
	Rye	0.54	0.76	0.30	0.67	*0.57*	0.63	0.47	0.62	0.52	*0.56*
Barley ..	Vetches	0.26	0.20	0.14	0.20	*0.20*	0.19	0.24	0.16	0.24	*0.21*
	Rye	0.37	0.40	0.22	0.40	*0.34*	0.74	0.30	0.44	0.44	*0.48*

NOTE: These figures were omitted from the 1933 report and are included here for the sake of completeness.

https://doi.org/10.23637/ERADOC-1-67