

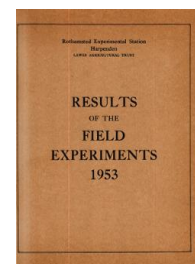
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Yields of the Field Experiments 1953

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53/BD/1 Green Manuring - Woburn

Rothamsted Research

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GREEN MANURING EXPERIMENT

Woburn Stackyard - 1953, the 17th year

For details of treatments etc. see "Results of Field Experiments 1939-47" Vol. I, Section Be/1. Since 1950 the fallow, lupin and ryegrass plots of the cabbage crop have been split into two for early and late planting.

Cultivations, etc.:

Green manures. Clover and ryegrass undersown in barley: Apr 17, 1952. Ploughed fallow, lupin and rape plots: Aug 29, 1952 and Jan 7, 1953. Sulphate of ammonia applied to clover, rape and ryegrass plots, rape sown: Mar 27. Sulphate of ammonia applied to fallow and lupin plots: Mar 28. Lupins drilled: Mar 31. Rape dusted with D.D.T.: May 5 and May 9.

Cabbages. Dung and straw applied to fallow, clover and ryegrass plots, and ploughed in: June 4, 1953. Dung and straw applied to lupin and rape plots, ploughed in: June 15. Basal fertilizers applied: June 18. Cabbages planted and watered in (calomel treated): June 20. Harvested: Dec 2, 1953-Feb 24, 1954.

Barley. Ploughed: Mar 11, 1953. $29\frac{1}{2}$ cwt ground chalk per acre applied: Mar 15. Sulphate of ammonia applied, seed drilled at 3 bushels per acre: Mar 16. Clover and ryegrass undersown: Apr 24. Harvested: Aug 14. Variety: Plumage Archer.

Note: Because of weather conditions it was not possible to plant the 'early' cabbages and all cabbages were therefore planted on the same date.

Standard errors per plot:

Cabbages, weight of headed cabbages: 1.04 tons per acre or 14.8%
(9 d.f.)

Barley, grain: 1.62 cwt per acre or 5.6% (9 d.f.)

53/Bd/1.2

Summary of Results

Cabbages

	Green manure				Rye-grass	Mean
	None	Lupins	Clover	Rape		
Weight of headed cabbages: tons per acre						
	(±0.522)					(±0.234)
No dung	6.28	7.15	8.68	4.79	2.38	5.86
Dung	8.83	9.66	11.75	6.56	4.63	8.28
No straw	7.15	8.49	10.87	6.23	3.78	7.31
Straw	7.96	8.31	9.56	5.11	3.23	6.84
Sulph. amm.						
2 cwt per acre	6.18	7.82	8.35	5.67	2.55	6.11
4 cwt per acre	8.94	8.99	12.08	5.67	4.45	8.03
Sulph. amm. to green manure						
Low	7.46	8.24	9.72	5.56	3.11	6.82
High	7.66	8.56	10.71	5.78	3.90	7.32
Mean (±0.369)	7.56	8.40	10.22	5.67	3.50	7.07

Total produce: tons per acre

No dung	8.16	8.67	10.20	6.70	4.57	7.66
Dung	10.22	11.04	13.22	8.41	6.56	9.89
No straw	8.89	10.12	12.21	7.92	5.84	9.00
Straw	9.49	9.59	11.21	7.18	5.30	8.55
Sulph. amm.						
2 cwt per acre	8.12	9.32	9.99	7.32	4.67	7.88
4 cwt per acre	10.26	10.39	13.43	7.79	6.46	9.67
Sulph. amm. to green manure						
Low	9.29	9.95	11.38	7.34	5.21	8.63
High	9.09	9.76	12.04	7.77	5.93	8.92
Mean	9.19	9.86	11.71	7.55	5.57	8.78

Headed cabbages as percentage of total number

No dung	56.6	66.0	70.8	52.7	29.4	55.1
Dung	70.3	75.0	78.2	61.2	50.2	67.0
No straw	60.3	70.3	76.5	61.5	40.8	61.9
Straw	66.6	70.7	72.4	52.4	38.8	60.2
Sulph. amm.						
2 cwt per acre	55.5	69.7	69.6	59.8	30.2	57.0
4 cwt per acre	71.4	71.3	79.4	54.1	49.4	65.1
Sulph. amm. to green manure						
Low	62.9	66.2	70.3	57.2	37.2	58.8
High	64.0	74.8	78.6	56.6	42.4	63.3
Mean	63.4	70.5	74.5	56.9	39.8	61.0

53/Bd/1.3

Cabbages

Differential Responses

Response to	Mean	Dung		Straw		Sulph. amm. cwt per acre		Sulph. amm. to green manure	
		Abs.	Pres.	Abs.	Pres.	2	4	Low	High
Weight of headed cabbages: tons per acre									
	(±0.330)				(±0.472)				
Dung	+2.43	-	-	+2.63	+2.23	+2.64	+2.22	+2.42	+2.44
Straw	-0.47	-0.27	-0.67	-	-	-0.82	-0.12	-1.10	+0.16
Sulph. amm.	+1.91	+2.12	+1.70	+1.56	+2.26	-	-	+2.82	+1.00
Sulph. amm. to green manure	+0.50	+0.49	+0.51	-0.13	+1.13	+1.41	-0.41	-	-
Total produce: tons per acre									
Dung	+2.23	-	-	+2.36	+2.10	+2.37	+2.09	+2.24	+2.22
Straw	-0.44	-0.31	-0.57	-	-	-0.62	-0.26	-1.01	+0.13
Sulph. amm.	+1.78	+1.92	+1.64	+1.60	+1.96	-	-	+2.45	+1.11
Sulph. amm. to green manure	+0.28	+0.29	+0.27	-0.29	+0.85	+0.95	-0.39	-	-
Headed cabbages as percentage of total number									
Dung	+11.9	-	-	+12.8	+11.0	+15.0	+8.8	+11.9	+11.9
Straw	-1.7	-0.8	-2.6	-	-	-3.3	-0.1	-3.6	+0.2
Sulph. amm.	+8.1	+11.2	+5.0	+6.5	+9.7	-	-	+12.4	+3.8
Sulph. amm. to green manure	+4.5	+4.5	+4.5	+2.6	+6.4	+8.8	+0.2	-	-

53/Bd/1.4

	Barley					Mean
	None	Green manure			Rye-grass	
		Lupins	Clover	Rape		
Grain: cwt per acre						
		(±0.81)				(±0.36)
No dung to cabbages 1952	24.0	29.7	30.6	26.5	28.0	27.8
Dung to cabbages	31.0	29.8	31.7	30.3	30.2	30.6
No straw to cabbages 1952	28.3	29.6	30.9	27.8	28.5	29.0
Straw to cabbages	26.7	30.0	31.4	29.0	29.7	29.4
Sulph. amm. to cabbages 1952						
2 cwt per acre	27.1	29.1	31.4	27.6	28.0	28.7
4 cwt per acre	27.8	30.4	30.9	29.2	30.2	29.7
Sulph. amm. to barley						
Nil	24.5	29.4	31.7	25.7	28.7	28.0
1½ cwt per acre	30.4	30.2	30.6	31.1	29.5	30.4
Mean (±0.57)	27.5	29.8	31.1	28.4	29.1	29.2
Straw: cwt per acre						
No dung to cabbages 1952	31.0	41.2	42.6	36.0	37.1	37.6
Dung to cabbages	44.6	46.6	51.2	47.6	48.4	47.6
No straw to cabbages 1952	38.2	44.1	46.2	42.2	40.8	42.3
Straw to cabbages	37.5	43.8	47.5	41.4	44.7	43.0
Sulph. amm. to cabbages 1952						
2 cwt per acre	36.8	41.6	45.4	39.3	41.4	40.9
4 cwt per acre	38.8	46.3	48.2	44.4	44.1	44.4
Sulph. amm. to barley						
Nil	29.8	38.7	44.9	33.9	36.8	36.8
1½ cwt per acre	45.9	49.2	48.8	49.8	48.7	48.5
Mean	37.8	43.9	46.8	41.8	42.7	42.6

53/Bd/1.5

Barley

Differential Responses

Response to	Mean	Dung to cabbages		Straw to cabbages		Sulph. amm. to cabbages		Sulph. amm. to barley	
		Abs. Pres.	Abs. Pres.	Abs. Pres.	Abs. Pres.	cwt per acre	cwt per acre	0	1½

Grain: cwt per acre

	(±0.51)			(±0.73)					
Dung to cabbages 1952	+2.8	-	-	+3.7	+1.9	+4.2	+1.4	+4.4	+1.2
Straw to cabbages 1952	+0.3	+1.2	-0.6	-	-	+1.5	-0.9	-0.1	+0.7
Sulph. amm. to cabbages 1952	+1.1	+2.5	-0.3	+2.3	-0.1	-	-	+2.2	0.0
Sulph. amm. to barley	+2.4	+4.0	+0.8	+2.0	+2.8	+3.5	+1.3	-	-

Straw: cwt per acre

Dung to cabbages 1952	+10.0	-	-	+10.3	+9.7	+13.3	+6.7	+9.3	+10.7
Straw to cabbages 1952	+0.7	+1.0	+0.4	-	-	+2.5	-1.1	-1.3	+2.7
Sulph. amm. to cabbages 1952	+3.5	+6.8	+0.2	+5.3	+1.7	-	-	+6.5	+0.5
Sulph. amm. to Barley	+11.7	+11.0	+12.4	+9.7	+13.7	+14.7	+8.7	-	-