

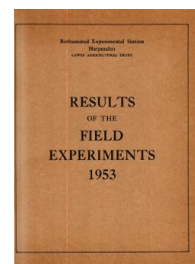
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# Yields of the Field Experiments 1953

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## 53/BF/1 Market Garden - Woburn

### Rothamsted Research

Rothamsted Research (1954) *53/BF/1 Market Garden - Woburn* ; Yields Of The Field Experiments 1953, pp 57 - 61 - DOI: <https://doi.org/10.23637/ERADOC-1-173>

53/Bf/1.1

WOBURN MARKET GARDEN EXPERIMENT

Organic manures and N - Lansome 1953 the 12th year.

The present cropping comprises two series, each carrying in turn the crops of a two course rotation: 1st year - Globe beet followed by Spring cabbages; 2nd year - Leeks.

In 1953 the Globe beet crop failed and was replaced by White turnips. The Spring cabbage crop of 1952-53 also failed (see 52/Bf/1), and was replaced by Peas, the results of which are included in this report.

System of replication (each series): 4 randomized blocks of 10 plots each, certain interactions being confounded with block differences.

Area of each plot: 0.0125 acre.

Treatments applied to each crop:

Organic manures: Dung; sewage sludge compost; sewage sludge (West Middlesex); vegetable compost, each at 10 and 20 tons per acre.

N (applied as nitrochalk): None; 0.3 cwt per acre on plots receiving organic manure. None; 0.3; 0.6; 0.9 cwt per acre on plots not receiving organic manure. The last two rates are applied in two equal dressings.

Basal manuring per acre to each crop: 0.3 cwt  $P_2O_5$ ; 0.3 cwt  $K_2O$ , applied as granular fertilizer (13%  $P_2O_5$ ; 13%  $K_2O$ ).

Cultivations, etc.:

Globe beet. Organic manures applied and ploughed in: Apr 22. Basal manure applied: Apr 24. Nitrochalk applied (first dressing 0.6 and 0.9 N plots): May 11. Seed drilled at 13 lb per acre: May 12. Singled, second application of nitrochalk to 0.6 and 0.9 N plots: July 6. Crop failed. Variety: Detroit.

White turnips. (Replacement for Globe beet). Ploughed: June 19. Seed drilled at 6 lb per acre: June 22. Dusted with DDT June 27 and July 3. Lifted: Sept 2-28. Variety: 6 week Turnip.

Spring cabbages 1953-54. Organic manures applied and ploughed in: Sept 29, 1953. Basal manures applied, cabbages planted: Sept 30. Nitrochalk applied (first dressing 0.6 and 0.9 N plots): Mar 10, 1954. Second dressing of nitrochalk to 0.6 and 0.9 N plots: Apr 9. Cut: May 21-July 13. Variety: Durham Early.

53/Bf/1.2

Peas. (Replacement for Spring cabbages of 1952-53). Nitrochalk applied (first dressing 0.6 and 0.9 N plots): Mar 23, 1953. Peas drilled at 180 lb per acre: Mar 27. Dusted with DDT: May 9. Second dressing of nitrochalk to 0.6 and 0.9 N plots: June 3. Harvested: July 8-15. Variety: Kelvedon Wonder.

Leeks 1953-54. Organic manures applied and ploughed in: July 24, 1953. Basal manures and nitrochalk applied (first dressing to 0.6 and 0.9 N plots): July 27. Leeks planted and watered in: Aug 28. Second dressing of nitrochalk to 0.6 and 0.9 N plots: Sept 21. Harvested: Jan 6 - Mar 9, 1954.

Standard errors per plot:

White turnips roots: 1.70 tons per acre or 10.1% (17 d.f.)  
 Spring cabbages, weight of headed cabbages: 0.882 tons per acre or 20.4% (17 d.f.)  
 Leeks, saleable produce: 0.464 tons per acre or 7.6% (17 d.f.)  
 Peas, saleable produce: 11.9 cwt per acre of 16.2% (17 d.f.)

Summary of Results

		White turnips				
Organic manures	Level of manuring	N, cwt per acre			Mean	
	(tons per acre)	None	0.3	0.6		0.9
Weight of roots: tons per acre						
		(±1.20)			(±0.85)	
None		10.08	15.52	16.92	15.68	12.80 <sup>*</sup>
Dung	10	18.02	17.72			17.88
	20	19.92	17.08			18.50
Sludge compost	10	18.32	17.22			17.78
	20	16.38	18.22			17.30
Sludge	10	16.78	15.78			16.28
	20	18.12	14.68			16.40
Vegetable compost	10	17.08	17.28			17.18
	20	18.42	18.48			18.45
Mean (±0.42)		17.88 <sup>+</sup>	17.06 <sup>+</sup>			16.88

<sup>\*</sup>Mean over None and 0.3 cwt N per acre only.

<sup>+</sup>Excluding 'No Organics'.

53/Bf/1.3

White turnips

Organic manures	Level of manuring tons per acre	N: cwt per acre				Mean
		None	0.3	0.6	0.9	

Plant number: thousands per acre

None		156.6	174.2	174.7	170.8	165.4 <sup>##</sup>
Dung	10	157.9	185.8			171.8
	20	159.3	126.2			142.8
Sludge compost	10	182.1	141.5			161.8
	20	153.4	141.0			147.2
Sludge	10	160.0	160.9			160.5
	20	142.3	136.1			139.2
Vegetable compost	10	158.2	154.1			156.2
	20	142.3	162.6			152.4
Mean		156.9 <sup>+</sup>	151.0 <sup>+</sup>			157.0

Spring cabbages 1953-54

Weight of headed: tons per acre

						Mean
		(±0.623)			(±0.441)	
None		0.11 <sup>##</sup>	1.91	3.44	4.22	1.01 <sup>##</sup>
Dung	10	3.06	4.26			3.66
	20	5.98	7.63			6.80
Sludge compost	10	2.05	4.70			3.37
	20	4.51	6.17			5.34
Sludge	10	3.84	6.26			5.05
	20	6.08	6.86			6.47
Vegetable compost	10	2.42	3.93			3.18
	20	3.59	5.60			4.60
Mean (±0.220)		3.94 <sup>+</sup>	5.68 <sup>+</sup>			4.32

Total produce: tons per acre

None		1.88 <sup>##</sup>	4.51	6.43	6.87	3.19 <sup>##</sup>
Dung	10	6.03	6.96			6.50
	20	8.11	9.00			8.55
Sludge compost	10	5.67	7.61			6.64
	20	7.25	7.98			7.62
Sludge	10	6.99	8.25			7.62
	20	8.55	9.26			8.90
Vegetable compost	10	5.37	6.61			5.99
	20	6.75	7.41			7.08
Mean		6.84 <sup>+</sup>	7.88 <sup>+</sup>			6.87

<sup>##</sup>Mean over None and 0.3 cwt N per acre only.

<sup>##</sup>Both plots receiving no Organics or N, were badly damaged by birds.

<sup>+</sup>Excluding 'No Organics'.

53/Bf/1.4

Spring cabbages 1953-54

Organic manures	Level of manuring tons per acre	N: cwt per acre				Mean
		None	0.3	0.6	0.9	
Percentage headed, (by number)						
None		1.8 <sup>##</sup>	30.4	48.1	55.4	16.1 <sup>##</sup>
Dung	10	42.4	56.4			49.4
	20	67.4	78.4			72.9
Sludge compost	10	31.6	57.8			44.7
	20	58.7	70.2			64.4
Sludge	10	46.3	69.7			58.0
	20	62.9	75.2			69.0
Vegetable compost	10	37.3	54.8			46.0
	20	48.0	69.6			58.8
Mean		49.3 <sup>+</sup>	66.5 <sup>+</sup>			53.0

Leeks

Saleable produce: tons per acre

		(±0.328)			(±0.232)	
None		3.79	4.45	5.40	5.33	4.12 <sup>##</sup>
Dung	10	5.40	6.24			5.82
	20	7.51	7.72			7.62
Sludge compost	10	5.63	6.06			5.84
	20	6.32	7.15			6.73
Sludge	10	6.43	6.41			6.42
	20	6.30	7.05			6.68
Vegetable compost	10	5.04	5.99			5.51
	20	6.51	7.59			7.05
Mean (±0.116)		6.14 <sup>+</sup>	6.78 <sup>+</sup>			6.12

Percentage saleable, (by number)

None		99.4	100.0	100.0	99.9	99.7 <sup>##</sup>
Dung	10	99.9	100.0			100.0
	20	99.7	99.7			99.7
Sludge compost	10	100.1	99.7			99.9
	20	99.9	99.7			99.8
Sludge	10	99.8	99.7			99.8
	20	100.1	99.6			99.8
Vegetable compost	10	99.5	100.0			99.8
	20	100.0	100.0			100.0
Mean		99.9 <sup>+</sup>	99.8 <sup>+</sup>			99.8

<sup>##</sup> Mean over None and 0.3 cwt N per acre only

<sup>##</sup> Both plots receiving no Organics or N, were badly damaged by birds.

<sup>+</sup> Excluding 'No Organics'.

53/Bf/1.5

Peas (replacement for Spring Cabbages 1952-53)

Organic manures	Level of manuring tons per acre	N: cwt per acre				Mean
		None	0.3	0.6	0.9	
Saleable produce: cwt per acre						
			(±8.39)			(±5.93)
None		48.8	73.6	92.9	69.2	61.2 <sup>‡</sup>
Dung	10	62.5	94.5			78.5
	20	94.5	77.3			85.9
Sludge compost	10	56.8	78.5			67.6
	20	56.3	72.6			64.4
Sludge	10	78.5	70.5			74.5
	20	54.8	62.0			58.4
Vegetable compost	10	89.3	74.1			81.7
	20	67.6	89.5			78.6
Mean (±2.97)		70.0 <sup>+</sup>	77.4 <sup>+</sup>			73.2

Total produce: cwt per acre

None		53.4	78.4	99.4	74.5	65.9 <sup>‡</sup>
Dung	10	69.3	102.0			85.6
	20	99.8	84.0			91.9
Sludge compost	10	60.8	83.2			72.0
	20	60.3	78.8			69.5
Sludge	10	83.9	76.2			80.1
	20	59.2	65.3			62.2
Vegetable compost	10	94.0	78.9			86.5
	20	72.6	97.4			85.0
Mean		75.0 <sup>+</sup>	83.2 <sup>+</sup>			78.6

<sup>‡</sup>Mean over None and 0.3 cwt N per acre only.

<sup>+</sup>Excluding 'No Organics'.