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51/BF/1 Market Garden - Woburn

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51/Bf/4.1

WOBURN MARKET GARDEN EXPERIMENT

Organic manures and nitrochalk - Lansome 1951 the 10th 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.

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 15 and 20 tons per acre.
Nitrochalk; None; 0.3 cwt N per acre on plots receiving organic manure. None; 0.3, 0.6, 0.9 cwt N per acre on plots not receiving organic manure. The last two rates are applied in two equal dressings.

Basal manuring per acre: 0.3 cwt P_2O_5 ; 0.3 cwt K_2O , applied as granular fertilizer ($13\frac{3}{4}\%$ P_2O_5 ; $13\frac{3}{4}\%$ K_2O).

Cultivations, etc:

Globe beet. Organic manures applied and ploughed in: May 11.
Basal manure and nitrochalk applied (first dressing to 0.6 and 0.9 N plots), seed drilled at 13 lb per acre: May 15. Dusted against flea beetle: June 2 and again June 9. Singled: July 9.
Second application of nitrochalk to 0.6 and 0.9 N plots: July 12.
Lifted: July 31-Sept 13, 1951. Variety: Detroit.

Spring Cabbages 1951-52. Organic manures applied and ploughed in: Sept 17. Basal manures applied: Sept 18. Cabbages planted and watered in: Sept 19. Sprayed with D.D.T: Oct 10.
Nitrochalk applied (first dressing to 0.6 and 0.9 N plots): Mar 3. Second dressing of nitrochalk to 0.6 and 0.9 N plots: Mar 14. Cut: May 6-July 7, 1952. Variety: Durham Early.

Leeks 1951-52. Organic manures applied and ploughed in: Apr 27. Basal manures and nitrochalk applied (first dressing to 0.6 and 0.9 N plots): July 16. Leeks planted and watered in: July 23. Second dressing of nitrochalk to 0.6 and 0.9 N plots: Sept 11. Harvested: Jan 8-Mar 28, 1952. Variety: Musselburgh.

Standard errors per plot:

Globe beet, weight of saleable bulbs: 1.25 tons per acre or 20.4%
(17 d.f.)

Spring Cabbages, weight of headed cabbages: 0.844 tons per acre or
23.1% (17 d.f.)

Leeks, saleable weight: 0.517 tons per acre or 8.8% (17 d.f.)

Summary of Results

Globe Beet

Organic Manures	Level of manuring (tons/acre)	Nitrochalk, cwt N per acre				Mean
		None	0.3	0.6	0.9	
Weight of saleable bulbs: tons per acre						
			(± 0.884)		(± 0.625)	
None		3.98	4.83	4.68	6.42	4.41 [*]
Dung	10	6.68	5.50			6.09
	20	6.07	7.10			6.59
Sludge compost	10	4.95	7.61			6.28
	20	7.05	6.96			7.00
Sludge	10	5.23	5.46			5.34
	20	6.14	8.62			7.38
Vegetable compost	10	5.46	7.14			6.30
	20	6.27	6.46			6.37
Mean (± 0.313)		5.98 [†]	6.86 [†]			6.13
Total produce: tons per acre						
None		7.48	8.92	8.62	13.57	8.20 [*]
Dung	10	10.98	10.23			10.61
	20	10.75	12.05			11.40
Sludge compost	10	8.36	12.26			10.31
	20	11.67	11.39			11.53
Sludge	10	8.71	9.92			9.32
	20	10.86	14.29			12.58
Vegetable compost	10	9.21	11.57			10.39
	20	10.37	11.11			10.74
Mean		10.12 [†]	11.60 [†]			10.62
Plant number: thousands per acre						
None		54.4	50.1	47.6	65.8	52.3 [*]
Dung	10	61.2	52.0			56.6
	20	52.6	51.4			52.0
Sludge compost	10	43.8	55.6			49.8
	20	63.4	55.6			59.5
Sludge	10	42.5	50.0			46.3
	20	50.0	63.8			56.9
Vegetable compost	10	50.2	58.9			54.5
	20	52.4	57.0			54.7
Mean		52.0 [†]	55.5 [†]			53.9

* Mean over None and 0.3 cwt N per acre only.
 † Excluding 'No organics'.

Spring Cabbages

Organic Manures	Level of manuring (tons/acre)	Nitrochalk, cwt N per acre				Mean
		None	0.3	0.6	0.9	
Weight of headed cabbages: tons per acre						
						(± 0.422)
						(± 0.597)
None		0.61	2.08	2.88	3.94	1.34*
Dung	10	2.64	2.59			2.62
	20	3.63	5.05			4.34
Sludge compost	10	2.37	3.66			3.02
	20	3.88	4.93			4.40
Sludge	10	3.56	5.34			4.45
	20	6.04	6.72			6.38
Vegetable compost	10	2.43	4.69			3.56
	20	2.39	3.61			3.00
Mean (± 0.211)		3.37†	4.57†			3.65
Total produce: tons per acre						
None		1.72	4.10	4.86	5.64	2.92*
Dung	10	4.36	4.68			4.52
	20	5.78	6.86			6.32
Sludge compost	10	4.30	5.88			5.10
	20	5.96	6.63			6.30
Sludge	10	6.18	7.50			6.84
	20	8.01	8.82			8.42
Vegetable compost	10	4.26	6.00			5.13
	20	4.72	5.57			5.14
Mean		5.45†	6.49†			5.59
Percentage headed cabbages, (by number)						
None		14.2	32.0	43.2	53.6	23.1*
Dung	10	45.0	42.1			43.6
	20	49.2	66.4			57.8
Sludge compost	10	42.2	52.4			47.3
	20	52.7	62.4			57.5
Sludge	10	44.0	59.6			51.8
	20	64.0	70.6			67.4
Vegetable compost	10	40.8	68.2			54.4
	20	36.8	51.6			44.2
Mean		46.8†	59.2†			49.5

* Mean over None and 0.3 cwt N per acre only.
 † Excluding 'No organics'.

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Organic Manures		Leeks				Mean
		Nitrochalk, cwt N per acre				
Level of manuring (tons/acre)		None	0.3	0.6	0.9	
		Saleable weights: tons per acre				(±0.258)
		(±0.366)				
None		2.62	3.92	4.93	4.63	3.27*
Dung	10	5.16	5.89			5.52
	20	7.54	7.40			7.47
Sludge compost	10	5.31	6.03			5.67
	20	6.72	6.92			6.82
Sludge	10	6.00	5.94			5.97
	20	6.79	7.21			7.00
Vegetable compost	10	4.80	6.05			5.43
	20	6.51	7.28			6.90
Mean (±0.129)		6.10†	6.59†			5.88
		Percentage saleable (by number)				
None		86.8	94.0	95.7	95.2	90.4*
Dung	10	95.8	97.3			96.5
	20	97.9	97.5			97.7
Sludge compost	10	95.8	97.9			96.9
	20	97.8	97.0			97.4
Sludge	10	97.8	97.2			97.5
	20	98.0	98.3			98.1
Vegetable compost	10	98.2	97.0			97.6
	20	97.8	97.6			97.7
Mean		97.4†	97.5†			96.5

* Mean over None and 0.3 cwt N per acre only.

† Excluding 'No organics'.