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Yields of the Field Experiments 1948

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48/BE Market Garden

Rothamsted Research

Rothamsted Research (1949) *48/BE Market Garden* ; Yields Of The Field Experiments 1948, pp 51 - 55

48/Be/1.1

WOBURN MARKET GARDEN EXPERIMENT

Globe Beet and Peas. First crops of 7th year.

The use of heavy dressings of organic manures for making a market garden soil, and the effect of sulphate of ammonia.

JRB and JPE - Lansome, 1948.

System of replication: 2 series, one of each crop, each consisting of 4 randomized blocks of 10 plots each, certain interactions being confounded with block differences.

Area of each plot: $1/80$ acre.

Treatments:

Organic manures: Dung, sewage sludge compost, sewage sludge (West Middlesex), and vegetable compost, each at 15 and 30 tons per acre.

Sulphate of ammonia: None, 0.2 cwt. N per acre on organic manure plots. None, 0.2, 0.4, 0.6 cwt. N per acre on plots without organic manure.

Basal manuring: Superphosphate, 0.4 cwt. P_2O_5 per acre.
Muriate of potash, 0.5 cwt K_2O per acre.

Cultivations, etc.:

Series A. Globe Beet.

Organic manures applied: Mar 31. Ploughed: Apr 1.
Harrowed: Apr 2. Ground lime applied to all plots receiving sulphate of ammonia (plots 1,7 at 33 cwt per acre, plots 24, 27 at 22 cwt per acre, other plots at 11 cwt per acre). Harrowed in: Apr 5. Rolled, basal manures and sulphate of ammonia dressings applied, seed drilled and harrowed in: Apr 6. Ring rolled: Apr 10. Dusted with Flea beetle dust: Apr 27. Hoed: May 6-10. Hoed and hand weeded: May 13-28. Harvested: July 6, 12-13. Variety: Crimson Globe. Previous crop: Leeks.

Series B. Peas.

Organic manures applied: Jan 16-19. Ploughed: Jan 19-20. Springtime harrowed: Feb 17-19. Harrowed: Mar 15. Rolled, basal manures and sulphate of ammonia applied, peas drilled: Mar 16. Ring rolled: Mar 23. Hoed: Apr 29, May 10. Harvested: July 14-26. Variety: Kelvedon Wonder. Previous crop: Winter cabbage*.

Note: The winter cabbage crop failed owing to drought.

Standard errors per plot:

Peas, marketable produce, 11.88 cwt. per acre or 18.3%
Globe beet, weight of marketable produce, 1.272 tons per acre or 24.0%
total plant number, 4.01 thousands per acre or 12.3%
weight of bulbs, 0.719 cwt per acre or 26.4%

48/3e/1.2

Summary of Results

Organic manures	Level of manuring (tons/acre)	Sulphate of ammonia, cwt. N per acre				Mean
		None	0.2	0.4	0.6	

Green peas, marketable produce: cwt. per acre
(± 8.40 , means ± 5.94)

None		66.1	61.8	45.0	71.1	63.9*
Dung	15	96.1	75.0			85.5
Dung	30	79.3	41.3			61.8
Composted	15	75.7	85.0			80.4
sewage sludge	30	80.4	73.9			77.1
Sewage	15	47.1	46.8			47.0
sludge	30	35.7	38.2			37.0
Vegetable	15	85.4	84.3			84.8
compost	30	52.1	57.1			54.6

Globe beet, total produce: tons per acre
(± 0.900 , means ± 0.636)

None		1.30	2.92	3.86	2.37	2.11*
Dung	15	4.50	6.02			5.26
Dung	30	9.34	7.58			8.46
Composted	15	3.07	3.68			3.38
sewage sludge	30	4.72	6.19			5.45
Sewage	15	6.37	5.94			6.15
sludge	30	6.74	6.35			6.54
Vegetable	15	4.32	5.02			4.67
compost	30	6.85	8.78			7.82

Globe beet, weight of bulbs: tons per acre
(± 0.508 , means ± 0.360)

None		0.47	1.37	2.04	1.20	0.92*
Dung	15	2.04	3.20			2.62
Dung	30	5.01	4.12			4.56
Composted	15	1.39	1.77			1.58
sewage sludge	30	2.46	3.26			2.86
Sewage	15	3.25	3.08			3.17
sludge	30	3.50	3.30			3.40
Vegetable	15	2.10	2.62			2.36
compost	30	3.53	4.74			4.14

* These means are for 0.0 and 0.2 cwt. N per acre only

48/Be/1.3

Organic manures	Level of manuring (tons/acre)	Sulphate of ammonia, cwt. N per acre				Mean
		None	0.2	0.4	0.6	
Globe beet, total plant number: thous. per acre (± 2.87 , means ± 2.01)						
None		27.1	32.4	33.4	25.2	29.8*
Dung	15	32.8	31.6			32.2
Dung	30	42.8	29.4			36.1
Composted	15	29.6	35.0			32.4
sewage sludge	30	33.5	34.2			33.9
Sewage	15	37.6	29.9			33.8
sludge	30	28.8	27.2			28.0
Vegetable	15	37.0	39.0			38.0
compost	30	31.8	34.9			33.4

*These means are for 0.0 and 0.2 cwt. N per acre only

48/Be/2.1

WOBURN MARKET GARDEN EXPERIMENT

Leeks and Winter Cabbage. 2nd crops for 7th year

The use of heavy dressings of organic manures for making garden soil, and the effect of sulphate of ammonia.

JLE and JU - Lancaster 1948 - 9

System of replication: 2 series, one for each crop, each consisting of 4 randomized blocks of 10 plots each, certain interactions being confounded with block differences.

Area of each plot: $\frac{1}{80}$ acre.

Treatments:

Organic manures (applied to previous crops): Dung, sewage, sludge compost, sewage sludge (West Middlesex), and vegetable compost, each at 15 and 30 tons per acre.

Sulphate of ammonia: None, 0.4 cwt. N per acre on organic manure plots. None, 0.4, 0.8, 1.2 cwt. N per acre on plots without organic manure.

Basal manuring: None.

Cultivations, etc:

Series A. Winter Cabbage.

Ploughed and harrowed: July 15, 16. Rolled, sulphate of ammonia applied, cabbages planted: July 19, 20. Cabbages replanted where necessary: Aug 3 - 7. Hoed: Aug 24 - Sept 29. Cut: Jan 11, Feb 8, 15, 22. Variety: January King. Previous crop: Globe beet.

Series B. Leeks.

Ploughed: July 26, 27. Harrowed, rolled: July 27. Sulphate of ammonia applied, plots 48, 51, 72, 78 receiving only half dressings: July 30. Leeks planted: Aug 3 - 5. Hoed: Aug 24 - Sept 29. Second dressing of sulphate of ammonia to plots 48, 51, 72, 78: Sept 27. Harvested: Mar 16 - 29. Variety: Musselburgh. Previous crop: Peas.

Standard errors per plot:

Winter cabbages, marketable weight, 40.828 tons per acre or 11.8% total number, 0.372 thousands per acre or 2.1%

Leeks, total weight 14.40 cwt. per acre or 12.0% total number, 0.879 thousands per acre or 2.1%

48/Be/2.2

Summary of Results

Organic manures	Level of manuring tons per acre	Sulphate of Ammonia cwt N per acre				Mean
		None	0.4	0.8	1.2	
Cabbages, Marketable Weight: tons per acre						
(± 0.586 Means ± 0.414)						
None		2.41	5.98	7.59	7.49	4.20*
Dung	15	3.36	6.66			5.01
Dung	30	8.14	7.86			8.00
Composted	15	4.98	6.91			5.94
sewage sludge	30	5.88	8.05			6.96
Sewage	15	8.34	9.66			9.00
sludge	30	9.77	9.88			9.82
Vegetable	15	5.68	6.99			6.33
compost	30	6.95	8.26			7.61
Cabbages, Total Number: thous. per acre						
(± 0.263 Means ± 0.166)						
None		17.6	17.9	18.0	18.2	17.8*
Dung	15	16.7	18.3			17.5
Dung	30	18.3	18.0			18.1
Composted	15	17.8	18.2			18.0
sewage sludge	30	18.1	17.8			17.9
Sewage	15	17.8	17.8			17.8
sludge	30	17.4	18.0			17.7
Vegetable	15	17.9	17.5			17.7
compost	30	18.0	18.3			18.2

* These means are for 0.0 and 0.4 cwt N. per acre only.