ROTHAMSTED RESEARCH

Yields of the Field Experiments 1955

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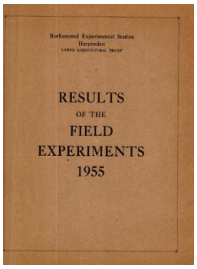

55/W/BF/1 Market Garden Soil

Rothamsted Research

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55/Bf/1.1

WOBURN MARKET GARDEN EXPERIMENT

Organic Manures and Nitrogen, Lansome 1955 the 14th 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.

Note: The results for the 1955-56 leeks will be included in the 1956 report.

Design (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 'Nitro-Chalk'): None; 0.3 cwt per acre on plots receiving organic manures. 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 dressing 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.:

Spring cabbages 1954-55.

Organic manures spread and ploughed in: Sept 25, 1954. Ground chalk at 20 cwt per acre, Aldrin at 1½ cwt per acre and basal fertilizer applied: Sept 27. Cabbages planted and watered in: Sept 29. First dressing of 'Nitro-Chalk' applied: Mar 14, 1955. Second dressing of 'Nitro-Chalk' applied: Apr 13. Cut 8 times: June 3 - July 8. Variety: Durham Early.

Note: The cabbages were attacked by pigeons in winter. The plots without organic manures or 'Nitro-Chalk' were particularly badly damaged.

Globe beet 1955.

Organic manures applied and ploughed in: Apr 29. Ground chalk applied at 20 cwt per acre: May 3. Basal fertilizer and first dressing of 'Nitro-Chalk' applied: May 11. Seed drilled at 14 lb per acre: May 16. Singled: July 1-8. Second dressing of 'Nitro-Chalk' applied: July 15. Harvested: Aug 18 - Sept 8. Variety: Detroit.

Standard errors per plot.

Spring cabbages 1954-55, weight of headed: 1.21 tons per acre or 23.3% (16 d.f.)*

Globe beet 1955, saleable bulbs: 1.30 tons per acre or 23.4% (17 d.f.)

*1 missing value.

Summary of Results

Spring cabbages 1954-55

Organic manures	Level of manuring: tons per acre	N: cwt per acre None	0.3	0.6	0.9	Mean
Weight of headed: tons per acre						
			(±0.853)			(±0.603)
None		0.22(1)	2.80	5.01	4.03	1.51*
Dung	10	2.06(2)	5.49			3.77
	20	5.60	8.05			6.82
Sludge compost	10	3.01	5.84			4.43
	20	4.45	8.56			6.51
Sludge	10	4.65	5.57			5.11
	20	5.84	10.45			8.14
Vegetable compost	10	2.86	5.55			4.20
	20	4.30	9.18			6.74
Mean (±0.301)		4.10+	7.34+			5.18
Total produce: tons per acre						
None		3.01(1)	5.44	7.55	6.43	4.22*
Dung	10	6.05(2)	7.78			6.92
	20	8.44	10.09			9.27
Sludge compost	10	7.22	8.15			7.68
	20	8.26	10.50			9.38
Sludge	10	8.05	8.83			8.44
	20	10.50	12.07			11.29
Vegetable compost	10	5.95	8.14			7.04
	20	7.48	10.73			9.10
Mean		7.74+	9.54+			8.03
Percentage headed, (by number)						
None		0.2(1)	40.4	58.8	53.0	20.3*
Dung	10	27.0(2)	64.4			45.7
	20	58.4	75.4			66.9
Sludge compost	10	36.5	69.3			52.9
	20	50.9	78.2			64.6
Sludge	10	52.4	57.0			54.7
	20	52.3	84.9			68.6
Vegetable compost	10	34.5	60.6			47.6
	20	49.8	84.5			67.1
Mean		45.2+	71.8+			54.4

(1) Both plots receiving no organics or N, were badly damaged by birds.
(2) Includes one estimated value.
* Mean over None and 0.3 cwt N per acre only.
\+ Excluding 'No organics'.

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Globe beet 1955

Organic manures	Level of manuring: tons per acre	N: cwt per acre None	0.3	0.6	0.9	Mean
Saleable bulbs: tons per acre						
			(±0.917)			(±0.648)
None		1.37	1.58	2.72	3.13	1.47*
Dung	10	6.34	4.38			5.36
	20	7.68	8.07			7.87
Sludge compost	10	4.82	6.54			5.68
	20	8.19	8.25			8.22
Sludge	10	4.31	5.55			4.93
	20	6.79	7.01			6.90
Vegetable compost	10	5.61	6.64			6.12
	20	6.22	5.81			6.01
Mean (±0.324)		6.24+	6.53+			5.55
Total produce: tons per acre						
None		2.78	2.76	4.74	5.54	2.77*
Dung	10	9.37	7.38			8.37
	20	11.21	11.68			11.45
Sludge compost	10	7.72	10.09			8.91
	20	11.80	12.01			11.91
Sludge	10	7.07	9.08			8.07
	20	10.41	11.44			10.92
Vegetable compost	10	8.44	9.90			9.17
	20	9.47	9.50			9.48
Mean		9.44+	10.14+			8.62
Plant number: thousands per acre						
None		50.0	40.7	59.1	59.7	45.4*
Dung	10	79.1	76.9			78.0
	20	83.0	75.3			79.2
Sludge compost	10	75.5	76.7			76.1
	20	82.9	80.9			81.9
Sludge	10	75.5	75.3			75.4
	20	82.1	85.3			83.7
Vegetable compost	10	81.8	77.5			79.6
	20	80.5	84.2			82.4
Mean		80.0+	79.0+			74.1

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

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