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63/W/WMG/B/5 Market Garden Soil

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63/E/5.1

WOEBURN MARKET GARDEN EXPERIMENT

(WMG)

Organic manures, N, P and K - Lansome Field 1963, the 22nd year of the experiment, the third year with revised treatments.

Carrots (in place of early potatoes): Crop changed because of an infestation of potato root eelworm (Heterodora rostochiensis). The carrots are unthinned and are sprayed with a systemic insecticide to control Motley Dwarf Virus. Manurial treatments remain the same.

Globe beet: Seed dressing test (to columns of 4 half-plots):
No dressing, seed dressed against fungus disease with BHC/organomercury at 10 oz of the commercial preparation per 112 lb of seed.

Magnesium sulphate test: This is now discontinued.

Area of each sub plot (acres): 0.0063. Area harvested (acres):
Leeks - 0.0011, carrots - 1st harvest 0.0012, 2nd harvest 0.0017,
globe beet - 0.0009.

Note: The results for the 1963-64 leeks will be included in the 1964 report.

Cultivations, etc.:

Leeks 1962-63. Dung and NPK applied, plots ploughed: July 25, 1962.

Magnesium sulphate and second half of NPK applied: July 27.

Leeks planted: July 30. Harvested: 1st lifting - Mar 12, 2nd lifting - Apr 1, 1963. Variety: Musselburgh.

Carrots. PK applied: Mar 7, 1963. Dung applied, plots ploughed: Mar 13. N and second half of PK applied: Apr 11. Seed drilled at 2 lb per acre: Apr 21. Sprayed with demeton methyl at 6 fluid oz in 40 gallons per acre: May 31 and June 27. Lifted - 1st harvest: 15 July, 2nd harvest: 30 - 31 July. Variety: Early Market.

Globe beet. Ground chalk applied at 20 cwt per acre: May 3, 1963. Dung and NPK applied, plots ploughed: May 7. Second half of NPK applied: May 8. Seed drilled (untreated at 13 lb and treated at 14 lb per acre): May 9. Sprayed with demeton methyl at 6 fluid oz in 40 gallons per acre: June 6. Singled: June 14. Lifted: July 22*. Variety: Detroit.

* Through an error only one harvest was taken.

63/B/5.2

Summary of Results

Leeks 1962 - 1963. 1st Lifting. Saleable produce: tons per acre

Dung: tons per acre	Organic** manure applied 1942-62	Mean	Mag.sulph. lb p.a. 500		Diff.	Fertiliser		Diff.
			None	500		None	NPK	
10	D1	4.31	4.32	4.30	-0.02	3.87	4.75	+0.88
20	D2	4.25	4.07	4.42	+0.35	3.70	4.80	+1.10
10	C1	3.86	4.04	3.67	-0.37	3.52	4.20	+0.68
20	C2	4.26	4.24	4.27	+0.03	3.64	4.87	+1.23
Mean		4.17	4.17	4.16	-0.01	3.68	4.65	+0.97
Mag.sulph. lb per acre								
NPK					None	3.64	4.70	
					500	3.72	4.61	
111		3.72	3.42	4.02	+0.60			
111*		3.67	3.82	3.52	-0.30			
211		3.06	3.22	2.91	-0.31			
211*		4.37	4.32	4.42	+0.10			
112		3.37	3.12	3.62	+0.50			
112*		2.92	3.12	2.71	-0.41			
212		3.72	4.02	3.42	-0.60			
212*		4.12	4.12	4.12	0.00			
Mean		3.62	3.64	3.59	-0.05			

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

63/E/5.3

Leeks 1962 - 1963. 2nd Lifting. Saleable produce: tons per acre

Dung: tons per acre	Organic** manure applied 1942-62	Mag.sulph. lb p.a. 500		Fertiliser N.P.K.I		Diff
		None	500	None	N.P.K.I	
10	D1	4.62	4.67	4.52	4.77	+0.25
20	D2	4.35	4.52	4.04	4.82	+0.78
10	C1	4.45	4.20	3.77	4.88	+1.11
20	C2	4.60	4.14	3.59	5.15	+1.56
Mean		4.50	4.38	3.98	4.90	+0.92

Mag.sulph. lb per acre
None 4.01 5.00
500 3.96 4.81

NPK	Mag.sulph. lb per acre		Diff.
	None	500	
111	3.72	3.82	-0.10
111*	4.02	3.82	+0.20
211	3.22	3.62	-0.40
211*	4.42	5.13	-0.71
112	3.01	3.72	-0.71
112*	3.62	3.72	-0.10
212	4.42	4.42	0.00
212*	4.12	4.22	-0.10
Mean	3.82	4.06	-0.24

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

63/B/5.4

Leeks 1962 - 1963. Mean of 2 Liftings. Saleable produce: tons per acre

Dung: tons per acre	Organic** manure applied 1942-62	Mag.sulph. lb p.a. 500		Fertiliser N/P/K		Diff.
		None	500	None	N/P/K	
10	D1	4.47	4.48	4.20	4.76	+0.56
20	D2	4.21	4.47	3.87	4.81	+0.94
10	C1	4.24	3.93	3.64	4.54	+0.90
20	C2	4.42	4.21	3.62	5.01	+1.39
Mean		4.34	4.27	3.83	4.78	+0.95

Mag.sulph. lb per acre

None 3.83
500 3.84

NPK

111	3.74	3.62	3.87	+0.25
111*	3.80	3.82	3.77	-0.05
211	3.24	3.42	3.06	-0.36
211*	4.57	4.72	4.42	-0.30
112	3.37	3.42	3.32	-0.10
112*	3.29	3.42	3.16	-0.26
212	4.07	4.22	3.92	-0.30
212*	4.14	4.17	4.12	-0.05
Mean	3.78	3.85	3.71	-0.14

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

63/B/5.5

Carrots. Graded produce. Roots: tons per acre

Dung: tons per acre	Organic manure applied 1942-61	Mean	Fertiliser		Diff.	Treatment NPK
			None	N.P.K.		
			<u>1st Harvest</u>			
10	D1	3.78	3.58	3.97	+0.39	111
20	D2	5.33	5.24	5.42	+0.18	111*
10	C1	4.02	4.65	3.40	-1.25	211
20	C2	4.00	4.84	3.15	-1.69	211*
Mean		4.28	4.58	3.98	-0.60	112 112* 212 212*
			<u>2nd Harvest</u>			
10	D1	5.90	5.94	5.84	-0.10	111
20	D2	7.09	7.84	6.33	-1.51	111*
10	C1	6.14	6.10	6.17	+0.07	211
20	C2	6.73	7.84	5.62	-2.22	211*
Mean		6.46	6.94	5.99	-0.95	112 112* 212 212*
						Mean 3.17 5.56 5.30 3.75 3.88 3.23 5.04 3.94 3.49 Mean 4.27

*PK half ploughed in, half in seedbed.

63/B/5,6

Carrots. Graded produce. Roots: tons per acre

Dung: tons per acre	Organic manure applied 1942-61	Mean	Fertiliser		Diff.	Treatment NPK
			None	NPK		
<u>Mean of 1st and 2nd Harvest</u>						
10	D1	5.05	5.00	5.09	+0.09	111
20	D2	6.39	6.80	5.97	-0.83	111*
10	C1	5.29	5.52	5.06	-0.46	211
20	C2	5.64	6.64	4.63	-2.01	211*
Mean		5.59	6.00	5.19	-0.81	Mean
						4.81
						4.88
						3.22
						3.80
						2.63
						5.04
						3.14
						3.14
						3.83

* PK half ploughed in, half in seedbed

63/B/5.7

Carrots. Tops: tons per acre

Dung: tons per acre	Organic manure applied 1942-61	Mean	Fertiliser		Diff.	Treatment NPK
			None	NPK		
			<u>1st Harvest</u>			
10	D1	4.22	3.68	4.75	+1.07	111
20	D2	6.76	7.52	6.01	-1.51	111*
10	C1	4.60	5.14	4.07	-1.07	211
20	C2	5.84	6.69	4.99	-1.70	211*
						112
						112*
						212
						212*
Mean		5.36	5.76	4.95	-0.81	Mean
						3.11
			<u>2nd Harvest</u>			
10	D1	4.91	4.16	5.66	+1.50	111
20	D2	7.45	7.56	7.34	-0.22	111*
10	C1	5.22	5.20	5.24	+0.04	211
20	C2	6.77	7.50	6.04	-1.46	211*
						112
						112*
						212
						212*
Mean		6.09	6.10	6.07	-0.03	Mean
						3.18

* PK half ploughed in, half in seedbed.

63/B/5.8

Carrots. Tops: tons per acre

Dung: tons per acre	Organic manure applied 1942-61	Fertiliser		Diff.	Treatment NPK
		None	N1P1K1		
Mean		Mean of 1st and 2nd Harvest			
10	D1	3.97	5.30	+1.33	111
20	D2	7.54	6.81	-0.73	111*
10	C1	5.18	4.77	-0.41	211
20	C2	7.18	5.62	-1.56	211*
					112
					112*
					212
					212*
Mean		5.80	5.62	-0.34	
					Mean
					3.16

* PK half ploughed in, half in seedbed.

63/B/5.9

Globe beet. Total produce: tons per acre

Dung: tons per acre	Organic manure applied 1942-62**	Mean	Fungicide		Diff.	Fertiliser		Diff.
			0	F		None	NPKI	
10	D1	12.94	12.21	13.66	+1.45	10.88	14.99	+4.11
20	D2	15.51	14.16	16.86	+2.70	14.47	16.55	+2.08
10	C1	13.41	13.45	13.37	-0.08	9.87	16.96	+7.09
20	C2	15.53	14.65	16.41	+1.76	15.36	15.70	+0.34
Mean		14.35	13.62	15.08	+1.46	12.65	16.05	+3.40

Fungicide

0
F

12.27
13.02
14.97
17.13

NPK

111	6.40	5.23	7.56	+2.33
111*	11.28	10.53	12.02	+1.49
211	8.86	9.63	8.08	-1.55
211*	7.30	6.98	7.62	+0.64
112	12.44	12.92	11.95	-0.97
112*	***	***	***	***
212	7.36	5.62	9.11	+3.49
212*	14.76	14.47	15.05	+0.58
Mean excluding 112*	9.77	9.34	10.20	+0.86

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

*** Results omitted because of discrepancy between plant counts immediately after singling and at harvest.

63/B/5.10

Globe beet. Total saleable roots: tons per acre

Dung: tons per acre	Organic manure applied 1942-62**	Mean	Fungicide		Diff.	Fertiliser		Diff.
			O	F		None	NPK	
10	D1	5.90	5.86	5.95	+0.09	5.06	6.75	+1.69
20	D2	7.76	7.34	8.20	+0.86	7.57	7.96	+0.39
10	C1	6.31	6.34	6.28	-0.06	4.41	8.20	+3.79
20	C2	7.53	7.29	7.76	+0.47	7.70	7.35	-0.35
Mean		6.88	6.70	7.05	+0.35	6.19	7.56	+1.37
			Fungicide					
			O			F		
NPK						6.22	7.19	
						6.16	7.94	
111		1.93	1.51	2.35	+0.84			
111*		4.55	4.26	4.84	+0.58			
211		3.79	4.42	3.16	-1.26			
211*		2.16	1.91	2.41	+0.50			
112		5.32	5.57	5.08	-0.49			
112*		***	***	***	***			
212		2.64	2.01	3.28	+1.27			
212*		6.10	6.10	6.10	0.00			
Mean excluding 112*		3.79	3.68	3.89	+0.2			

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

*** Results omitted because of discrepancy between plant counts immediately after singling and at harvest.

63/B/5.11

Globe beet. Plant number: thousands per acre

Dmg: tons per acre	Organic manure applied 1942-62**	Mean	Fungicide		Diff.	Fertiliser		Diff.
			O	F		None	N.P.K.	
10	D1	126.9	109.2	144.6	+35.4	133.3	120.6	-12.7
20	D2	126.5	113.2	139.9	+26.7	131.1	122.0	-9.1
10	C1	131.8	126.9	136.8	+9.9	130.7	133.0	+2.3
20	C2	123.8	111.7	135.9	+24.2	128.2	119.4	-8.8
Mean		127.3	115.3	139.3	+24.0	130.8	123.7	-7.1
Fungicide								
O								
NPK						119.9	110.6	
						141.8	136.8	
F								
111		104.0	80.5	127.4	+46.9			
111*		145.0	127.4	162.7	+35.3			
211		106.5	99.0	114.0	+15.0			
211*		120.4	123.9	116.9	-7.0			
112		129.1	134.3	123.9	-10.4			
112*		***	***	***	***			
212		87.2	71.8	102.5	+30.7			
212*		135.2	127.9	142.4	+14.5			
Mean excluding 112*		118.2	109.3	127.1	+17.8			

* NPK half ploughed in, half in seedbed.

** Last applied to early potatoes 1962.

*** Results omitted because of discrepancy between plant counts immediately after singling and at harvest.