ROTHAMSTED RESEARCH

Report for 1937

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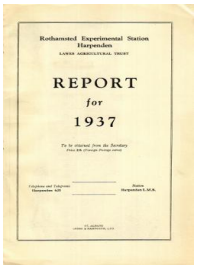

Kale

Rothamsted Research

Rothamsted Research (1938) *Kale ;* Report For 1937, pp 47 - 48 **- DOI: https://doi.org/10.23637/ERADOC-1-69**

TABLE XXXVI

Mean yield, tons per acre	Addition given by sulphate of ammonia, tons per acre		Mean yield, tons per acre	Addition given by sulphate of ammonia, tons per acre	
	Used alone	With potassic fertilizer		Used alone	With phosphatic fertilizer
9.00	0.43	1.72	14.52	1.05	4.00
10.17	0.41	1.86	14.11	0.47	3.33

The figures in the upper line are in presence of farmyard manure : those in the lower line in absence of farmyard manure.

The total number of interactions of this kind obtained up to the present (**1925-1937** inclusive) is shown in Table XXXVII.

TABLE XXXVII

	Nitrogen and potash interaction	Nitrogen and phosphate interaction	Phosphate and potash interaction
Total number of experiments	55	40	39
Positive interactions ..	35	29	27
No interaction or negative	20	11	12

Most of the interactions, however, are not statistically significant but all significant results are positive.

The proportion of ware. Mr. Garner has recently collected all the results relating to the percentage of ware and finds that fertilizers have a very marked effect in raising the proportion of ware in cases where the percentage without manure is low, but not where it is high.

TABLE XXXVIII

Percentage Ware

Mean Effects of Nutrients and Organic Manures Grouped according to Initial Percentage Ware

Initial percentage ware (no manure)	Increase due to						Total expts.
	N	P	K	Organic	Dung	NPK	
Over 90 ..	−0.4	−1.1	+0.6	−0.3	—	—	9
80 ..	+1.2	−1.1	+1.5	+0.7	—	—	34
70 ..	+2.6	+3.6	+8.7	−1.0	+5.5	+4.0	29
60 ..	+0.7	+6.8	+8.4	+2.8	+15.2	+4.4	29
50 ..	+16.8	+5.9	+15.8	—	+25.9	+22.4	9
Under 50 ..	—	—	+20.3	—	+34.2	—	3
Weighted mean	+2.0	+2.1	+7.6	+1.2	+15.3	+6.9	113

KALE

Marrow stem kale is one of the most useful of fodder crops and one of the best converters of cheap fertilizer nitrogen into valuable

https://doi.org/10.23637/ERADOC-1-69

protein food for animals. Numerous experiments on the manuring of kale have been recorded in previous Reports: for convenience they are collected in Table XXXIX: they show that responses continue even up to 6 cwt. fertilizer per acre and whether dung is given or not. One of the experiments (Woburn 1932) shows that a dressing of 15 tons of dung had about the same effect as 2 cwt. sulphate of ammonia per acre.

TABLE XXXIX

Effect of Nitrogenous Fertilizers on Kale

Year	Yield, tons No nitrogen	Increase, tons per acre[1] 1	2	3	4	5	6	Standard error ±	Form of nitrogen
ROTHAMSTED									
1932	12.6		2.8					0.54	Sulphate of ammonia
1933	9.0					2.5(2)		0.39	Sulphate of ammonia
1936	11.3		1.5		2.4			0.65	Sulphate of ammonia
WOBURN									
1932	18.3		1.3					0.92	Sulphate of ammonia
1932	13.3	4.5	6.4		11.1			1.01	Sulphate of ammonia
1932	19.2	2.0	4.5		9.6			1.01	Sulphate of amm. (3).
1936	8.2		2.0		6.4			0.66	Sulphate of ammonia
MIDLAND COLL.									
1931	15.3	2.9	3.8		7.1			0.95	Nitrate of soda (3).
1932	22.8		1.6		3.8			0.81	Nitrochalk (3).
1933	27.5			5.4			8.5	1.10	Nitrochalk (3).
1934	30.7			2.4			4.5	1.32	Nitrochalk (3).
1935	33.4			1.3			4.0	1.15	Nitrochalk (3).
1936	30.1			2.8			6.7	1.54	Nitrochalk (3).
DERBY									
1935	8.2		4.0		7.9			0.67	Sulphate of ammonia
WINCHESTER									
1933	12.1		0.3		−1.6			0.64	Sulphate of ammonia

(1) The headings 1, 2, 3, etc., refer to the number of cwt. per acre of nitrogenous fertilizers supplied.

(2) Other plots received respectively 10 and 15 cwt. per acre sulphate of ammonia and gave increases over no nitrogen of 2.6 and 2.5 tons per acre.

(3) All plots received farmyard manure.

TABLE XL

Kale (tons per acre)

	No sulphate of ammonia	Sulphate of ammonia 1 cwt.	2 cwt.	4 cwt.
No dung	13.3	17.8	19.7	24.4
15 tons dung	19.2	21.2	23.7	28.7
Increase for sulphate of ammonia (no dung)	—	4.5	6.4	11.1
Further increase for 15 tons farmyard manure	—	3.4	4.0	4.3

No farmyard manure is given except where stated.

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