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ROTHAMSTED RESEARCH

Report for 1935

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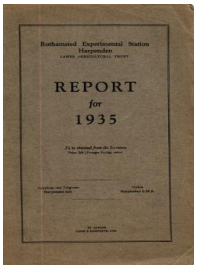

Special Groups of Experiments

Rothamsted Research

Rothamsted Research (1936) *Special Groups of Experiments ;* Report For 1935, pp 209 - 252 **- DOI: https://doi.org/10.23637/ERADOC-1-67**

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EXPERIMENTS ON POULTRY MANURE

Centres	Type of Experiment	No. of plots
Rothamsted (see pp. 191 for details)	2aCR	48
Woburn (see pp. 199-200 for details)	2aCR	48
Lady Manner's School, Bakewell (A)	IC	16
Lady Manner's School, Bakewell (B)	IC	16
T. Hughes, Esq., Chittoe, Wilts.	2CR	24
Fakenham School, Norfolk	IC	16
County School, Godalming, Surrey	IC	16
Gresham School, Holt	IC	16
Sailors' Orphan Homes School, Newlands, Hull	I	16
A. G. Brightman, Esq., Maulden, Beds. (A) J. W. Dallas, Esq., County Organiser	3	24
A. G. Brightman, Esq., Maulden, Beds. (B). J. W. Dallas, Esq., County Organiser	3	24
Cheshire School of Agriculture, Reaseheath, Nantwich, Cheshire (A)	IbR	50
Cheshire School of Agriculture, Reaseheath, Nantwich, Cheshire (B)	Ia	25
Cheshire School of Agriculture, Reaseheath, Nantwich, Cheshire (C)	Ia	25
The High School, Newcastle, Staffs. (A)	IC	16
The High School, Newcastle, Staffs. (B)	I	16
Norton New Council School, Doncaster, York	IC	16
Hertfordshire Farm Institute, Oaklands, St. Albans	2a	36
G. McCrae, Esq., Gillibrand Farm, Skelmersdale, Ormskirk, Lancs. J. J. Green, Esq., County Organiser	Ia	25
L. Pope, Esq., Pelton, Durham	I	12
Worcester County Experimental Station, Perdiswell. R. C. Gaut, Esq., County Organiser	2CR	24
Messrs. Smith Bros., Stratford, Sandy. J. W. Dallas, Esq., County Organiser	IaR	25
Church of England School, Staindrop, Darlington, Co. Durham	IC	16
J. Bonner, Esq., Steppingley, Beds.	2CR	24
The Horticultural College, Swanley	3	24
County School, Welshpool, Montgomeryshire	IC	16
R. S. Maudlin, Esq., Wyboston. J. W. Dallas, Esq., County Organiser	2CR	24

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Experimental arrangements

(I) All combinations of $\left\{\begin{matrix}O\\PM\end{matrix}\right\} \times \left\{\begin{matrix}O\\S/A\end{matrix}\right\}$
4 x 4 Latin squares or randomised blocks.
*Basal manuring : 1.0 cwt. K_2O and 0.8 cwt. P_2O_5 per acre.

(Ia) As (I), with malt culms or rape meal as an additional treatment.
5 x 5 Latin squares or randomised blocks.
*Basal manuring : 1.0 cwt. K_2O and 0.8 cwt. P_2O_5 per acre. Sandy (potatoes) also received 2 cwt. sulphate of potash and 2 cwt. chilean potash nitrate applied in 1935.

(IC) Cumulative : As (I), with treatments in 1935 on the same plots as in 1934.

(IaR) Residual : As (Ia), with treatments applied in 1934 and no treatments in 1935.

(IbR) As (IaR), with plots split for sulphate of ammonia in 1935.

(2) 0, 1 and 2 levels of S/A and PM.
Randomised blocks.
*Basal manuring : 1.0 cwt. K_2O and 1.0 cwt. P_2O_5 per acre.

(2CR) Immediate, cumulative and residual effects. Manures as 2, treatments as follows :

1934	O	O	1S	1M	2S	2M
1935	2S	2M	1S	1M	O	O

(2a) As (2), with soot.

(2aCR) As (2CR), with soot and rape dust.

(3) Immediate, cumulative and residual effects. Treatments as follows :

1935	O	O	M	M	O	O	S	S
1936	O	M	O	M	O	S	O	S
1937	M	M	O	O	S	S	O	O
1938	M	O	M	O	S	O	S	O

Randomised blocks.
*Basal manuring : 1.0 cwt. K_2O and 0.8 cwt. P_2O_5 per acre.

**Note.*—In all cases the mineral manures per plot were made up to 1.0 cwt. K_2O and 0.8 cwt. or 1.0 cwt. P_2O_5, using muriate of potash and superphosphate.

Rates of manuring

(I), (IC), (Ia), and (IAR) N at the rate of 0, 0.6 and 1.2 cwt. per acre.

(IbR) N at the rate of 0, 0.6 and 1.2 cwt. per acre applied in 1934.
N at the rate of 0 and 0.2 cwt. per acre applied in 1935.

(2), (2CR) and (2aCR) N at the rate of 0, 0.4 and 0.8 cwt. per acre.

(2a) N at the rate of 0, 0.45 and 0.9 cwt. per acre.

(3) N at the rate of 0 and 0.6 cwt. per acre.

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Place	Crop	Area Acres	Soil	Variety	Manures applied	Seed sown	Harvested	Previous crop
Bakewell (A)	Kale	1/102	Limestone loam	Marrow-stem	May 12	May 17	Nov. 15-Jan. 10	Potatoes
Bakewell (B)	Mangolds	1/102	Limestone loam	Yellow Globe	April 9 & May 3	May 8	Oct. 17-23	Kale
Chittoe	Carrots	1/25	Lower greensand	Early Market	May 20	May 22	Nov. 20-Dec. 2	Potatoes
Fakenham	Potatoes	1/302	Sandy loam	Majestic	April 1	April 3	Oct. 28	Potatoes
Godalming	French beans	1/239	Sandy	Best of All	April 24	June 12	Aug. 22-26-Sept. 10	Potatoes
Holt**	Potatoes	1/160	Loam	Sharpe's Express	April 3-8	April 5-6	July 20-25	Potatoes
Hull	Potatoes	1/161	Heavy alluvium	Arran Banner	April 12	April 12	Sept. 12-13	Mixed vegetables
Maulden (A)	Potatoes	1/73	Lower greensand	Ninetyfold	April 24	April 25	July 26-31	Kale
Maulden (B) §	Savoys	1/70	Lower greensand	—	April 24	Mid. Aug.	Feb. 22, 1936	Potatoes
Nantwich (A)†	Oats	1/90	Light loam	Marvellous	April 26	March 27	July 29	Kale
Nantwich (B)	Onions	1/134	Light loam	Bedfordshire Champion	April 17	April 24	Sept. 26	Onions
Nantwich (C)	Potatoes	1/104	Light loam	Kerr's Pink	May 13	May 15	Oct. 11	Potatoes
Newcastle (A)	Swedes	1/415	Old garden	Leighton's Garden	May 17	May 26	Oct. 3	Potatoes
Newcastle (B)	Potatoes	1/300	Old garden	Majestic	April 7	April 8	Oct. 15	Neglected land —weeds
Norton	Peas	1/316	Medium loam	Laxton's Progress	April 8	April 8	July 12	Potatoes
Oaklands‡	Sprouts	1/75	Silty loam	Cambridge Strain	July 3-6	May 24	Nov. 5-Dec. 3	Kale
Ormskirk	Potatoes	1/80	Medium loam	Kerr's Pink	May 13	May 13	Oct. 29	Cabbage
Pelton	Potatoes	1/186	Medium loam	Arran Banner	April 30	April 30	Sept. 26	Mixed garden crops
Perdiswell*	Runner beans	1/40	Alluvial loam	Sutton's A.1	April 17	May 15	July 31-Sept. 2	Sugar beet
Sandy	Potatoes	1/70	Sandy	Ninetyfold	March 13 (1934)	March 10	July 3	Sugar beet
Staindrop	Beet (red)	1/160	Loam	Carter's Red Globe	May 21	May 22	Oct. 21	Potatoes
Steppingley	Potatoes	1/50	Sandy loam	Eclipse	May 7	May 8	Aug. 22-30	Spring cabbage
Swanley	Onions	1/160	Sandy	Ailsa Crag	May 20	June 6-7	Sept. 27	Parsnips and carrots
Welshpool	Potatoes	1/160	Medium loam	Great Scot	April 3	May 8	Oct. 4-12	Swedes
Wyboston	Potatoes	1/60	Silty gravel	Majestic	April 2, 12	April 15	Oct. 9	Sprouts

* Soil irregularities were pronounced due to strips of gravel crossing the plots.
† The oats were weighed green, grain and straw together.
§ Yields small, due to drought and damage by pigeons.
** Crop was a failure through drought. Weeds troublesome.
‡ Damage by drought, birds and rabbits.

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Summary

One year experiments

The standard errors given in the tables apply to the individual treatment means

Types 1 *and* 1*a*

Place	Crop	No nitrogen	Poultry manure	Sulph. amm.	Poultry manure and sulph. ammonia	Other organic fertilizers	*Mean*	St. error	*Mean response to N*†	P.M.—S/A Per cent of mean response	P.M.—S/A St. error
Hull ..	Potatoes: tons per acre	6.87	8.56	8.28	8.63		*8.08*	±0.416	+1.55	+18.1	±38.4
Nantwich (C) ..	,, ,, ,,	7.08	7.89	8.44	8.09	7.91[1]	*7.88*	±0.222	*+1.08*	—50.9	±31.8
Newcastle	,, ,, ,,	9.92	10.90	12.30	13.11		*11.56*	±0.760	*+1.68*		
Ormskirk	,, ,, ,,	7.84	7.74	9.44	8.50	8.38[2]	*8.38*	±0.564	*+0.75*	−226.7	±234.2
Pelton ..	,, ,, ,,	12.54	13.92	16.22	14.20		*14.22*	±0.454	*+2.53*	−90.9	±32.2
Mean of potato experiments ..		*8.85*	*9.80*	*10.94*	*10.51*		*10.02*	*±0.230*			
Nantwich (C) ..	Per cent. ware	66.3	71.4	71.1	70.2	71.8[1]	*70.2*	±1.10	*+5.0*	+6.0	±31.2
Pelton ..	,, ,, ,, *	79.2	78.2	75.2	82.8		*78.8*	—	*−2.5*		
Nantwich (B) ..	Onions: tons per acre ..	9.81	10.68	9.84	10.11	10.31[1]	*10.15*	±0.288	*+0.45*		

† The average of the responses to P.M. and S/A alone. [1]Malt culms. [2]Rape meal.
* Potatoes hand sorted ; replicates bulked.

The differences in response to P.M. and S/A are shown as a percentage of the mean response at those stations at which there was a clear response to N.

Conclusions

Poultry manure and sulphate of ammonia alone and in combination.

There were significant responses to nitrogen in the yield of potatoes at four of the five centres, Ormskirk being the exception. In three of these sulphate of ammonia alone gave higher yields than poultry manure alone, but in only one case (Pelton) was the difference in yield significant. At the same centre sulphate of ammonia alone gave a significantly higher yield than the combined dressing. At Ormskirk, sulphate of ammonia gave an almost significant increase in yield, but there was no apparent response to poultry manure and the response to rape meal was not significant. At Nantwich nitrogen produced a significant increase in percentage ware, with no apparent difference in response between poultry manure, sulphate of ammonia or malt culms. At Pelton, where the replicates of the treatments were bulked for percentage ware, no consistent effect of nitrogen was apparent.

There were no significant effects on onions at Nantwich.

Type 3

Place	Crop	No nitrogen	Poultry manure	Sulph. amm.	*Mean*	St. error
Maulden (A)	Potatoes : tons per acre ..	3.64[1]	4.36	4.67	*4.08*	±0.245
Swanley	Onions :					
	Total crop : tons per acre	5.94[2]	6.73	5.69	*6.07*	±0.563
	Percentage 1st to total ..	63.2[3]	69.2	70.1	*66.4*	±2.47
Maulden (B)	Savoys : cwt. per acre ..	6.4[4]	7.7	7.5	*7.0*	±0.743

Standard errors : (1) ±0.173, (2) ±0.398, (3) ±1.75, (4) ±0.525.

Conclusions

New experiments on immediate, cumulative and residual effects.

This year the experiments measure only the direct response to 1935 applications of poultry manure and sulphate of ammonia. There was a significant response to nitrogen, with no difference between the two types, in potatoes at Maulden and onions (percentage of first quality to total) at Swanley. There were no significant effects on the total yield of onions at Swanley or on savoys at Maulden.

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1935

1st year.

Type 2a

Place	Crop	No nitrogen	1 Poultry manure	2 Poultry manure	1 Sulph. amm.	2 Sulph. amm.	1 Soot	2 Soot	*Mean*	St. error
Oaklands	Brussels sprouts : cwt. per acre									
	1st harvesting	19.8	22.0	24.2	23.8	21.3	24.6	28.0	*22.6*	
	2nd harvesting	6.6	7.6	7.0	6.5	7.5	7.4	8.6	*7.2*	
	Total saleable	26.4[1]	29.6	31.2	30.3	28.8	32.0	36.6	*29.8*	±2.56

Standard error : (1) ±1.48.

Conclusions

Single and double dressings of poultry manure, sulphate of ammonia and soot.

The only experiment of this type was on brussels sprouts at Oaklands. There was a response to nitrogen in total saleable sprouts, but no significant differences between the types of dressing. The additional response to the double dressing was small and not significant.

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Cumulative experiments
(all in second year)
Type 1c

Place	Crop	No nitrogen	Poultry manure	Sulph. amm.	Poul. man. and sulph. amm.	*Mean*	St. error	*Mean response to N*†	P.M.–S/A	
									Per cent. of mean response	St. error
Fakenham ..	Potatoes : tons per acre	3.98	4.34	4.47	5.33	*4.53*	±0.285	*+0.42*	−31.0	±99.2
Holt	,, ,, ,, ,,	1.66	1.50	2.18	2.78	*2.03*	±0.198	*+0.18*		
Welshpool ..	,, ,, ,, ,,	5.18	6.02	6.36	6.36	*5.98*	±0.208	*+1.01*	−33.7	±30.3
Mean of potato experiments		*3.61*	*3.95*	*4.34*	*4.82*	*4.18*	*±0.135*			
Newcastle (A) ..	Swedes									
	Roots : tons per acre ..	10.93	10.79	11.49	10.47	*10.92*	±0.675	*+0.21*		
	Tops : tons per acre	4.45	5.28	5.60	5.79	*5.28*	±0.412	*+0.99*	−32.3	±61.1
Bakewell (B)	Mangolds									
	Roots : tons per acre	19.16	21.88	21.13	22.20	*21.09*	±0.595	*+2.34*	+32.0	±37.3
	Tops : tons per acre	4.48	5.46	5.96	6.94	*5.71*	±0.198	*+1.23*	−40.6	±24.1
Staindrop ..	Red beet : tons per acre	14.79	15.67	16.89	11.54	*14.72*	±0.565	*+1.49*		
Bakewell (A) ..	Kale : tons per acre	13.01	16.86	16.26	18.99	*16.28*	±0.695	*+3.55*	+16.9	±28.0
Norton ..	Peas : cwt. per acre	101.1	96.8	91.2	97.8	*96.7*	±4.10	*−7.1*		
Godalming ..	French beans : cwt. per acre	42.2	51.6	42.9	43.7	*45.1*	±2.31	*+5.0*		
	Haulms : cwt. per acre	47.5	77.3	59.7	74.0	*64.6*	±3.28	*+21.0*	+83.8	±27.2

† The average of the responses to P.M. and S/A alone.
The differences in response to P.M. and S/A are shown as a percentage of the mean response at those stations at which there was a clear response to N.

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Conclusions

Poultry manure and sulphate of ammonia alone and in combination. Second year cumulative effects.

There were significant responses to both poultry manure and sulphate of ammonia applied alone, with no significant difference between them, at Fakenham and Welshpool (potatoes), Newcastle (swedes, tops), Bakewell (mangolds, roots and tops), and Bakewell (kale). The combined dressing gave a significant additional response in mangolds tops, though not in roots, at Bakewell. At Newcastle nitrogen had no apparent effect on the root yield of swedes. At Holt the potato crop failed.

At Staindrop sulphate of ammonia alone produced a significant increase in the yield of red beet, while the increase to poultry manure alone was not significant. The two yields did not, however, differ significantly. The combined dressing produced a striking depression in yield.

At Norton all dressings of nitrogen reduced the yield of peas, but the depressions were not significant.

The apparent response to poultry manure in the yield of French beans was large, though not fully significant. There was no sign of response to sulphate of ammonia. The Haulms were significantly increased by nitrogen, poultry manure giving a significantly higher yield than sulphate of ammonia.

Experiments on Residual Effects
(Manures applied last year)
Types 1a R and 1b R

Place	Crop	No nitrogen	Poultry manure	Sulph. amm.	Poul. man. and sulph. amm.	Malt culms	*Mean*	St. error
Sandy	Early potatoes : tons per acre ..	2.53	2.44	2.25	2.26	2.51	*2.40*	±0.0836
Nantwich (A)	Green oats : cwt. per acre							
	No S/A in 1935	55.4	54.4	57.3	59.2	56.3	*56.5*	
	1 cwt. in 1935	58.9	59.5	60.5	58.2	62.7	*60.0*	
	Average	57.2	57.0	58.9	58.7	59.5	*58.3*	±0.970
	Response to S/A	+3.5	+5.1	+3.2	−1.0	+6.4	*+3.5*	±3.19

Conclusions

Poultry manure and sulphate of ammonia alone and in combination. Residual effects of 1934 *dressings.*

There was a significant depression in the yield of potatoes on the plots receiving sulphate of ammonia in 1934. The depression due to poultry manure applied in 1934 was not significant, but was not significantly less than that due to sulphate of ammonia. At Nantwich (oats) only the total green weights were recorded. Sulphate of ammonia applied in 1935 gave a significant average response. The residues of the 1934 applications of nitrogen had no apparent effect on yields or on the response to sulphate of ammonia applied in 1935.

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Experiments on immediate, cumulative and residual effects
Type 2 C R

Place	Crop	Treatments 1934	Treatments 1935	Poultry manure	Sulph. amm.	*Mean*	St. error
Steppingley	Potatoes : tons per acre..	2N	0N	4.08	4.30	*4.19*	±0.255
		1N	1N	4.35	4.97	*4.66*	
		0N	2N	5.00	4.83	*4.92*	
		Mean		*4.48*	*4.70*	*4.59*	
Wyboston	Potatoes : tons per acre..	2N	0N	5.40	4.91	*5.16*	±0.228
		1N	1N	5.30	5.70	*5.50*	
		0N	2N	6.05	6.72	*6.38*	
		Mean		*5.58*	*5.78*	*5.68*	
	Per cent. ware	2N	0N	86.1	85.6	*85.8*	±2.84
		1N	1N	85.2	86.0	*85.6*	
		0N	2N	86.2	87.6	*86.9*	
		Mean		*85.8*	*86.4*	*86.1*	
Chittoe ..	Carrots : tons per acre..	2N	0N	10.16	12.07	*11.12*	±0.491
		1N	1N	11.25	10.58	*10.92*	
		0N	2N	9.45	9.61	*9.53*	
		Mean		*10.29*	*10.75*	*10.52*	
Perdiswell	Runner beans: cwt. per acre	2N	0N	38.2	34.8	*36.5*	±5.88
		1N	1N	41.6	41.8	*41.7*	
		0N	2N	41.4	40.6	*41.0*	
		Mean		*40.4*	*39.1*	*39.7*	

Conclusions

Immediate, cumulative and residual effects.

At Steppingley nitrogen applied in 1935 produced a significantly greater yield of potatoes than the residues of nitrogen applied in 1934. There were no significant differences between poultry manure and sulphate of ammonia. At Wyboston nitrogen applied in 1935 also gave increased yields, the yield with sulphate of ammonia being significantly greater than that with poultry manure. On the other hand, the residues of the double dressing of poultry manure in 1934 gave higher yields than those of sulphate of ammonia, though the difference was not significant. There were no treatment effects on percentage ware.

At Chittoe the double dressing of nitrogen given in 1935 gave significantly lower yields of carrots than the residues of the double 1934 dressings. For the 1935 applications, the difference in yield between poultry manure and sulphate of ammonia was small and not significant, but the 1934 dressing of sulphate of ammonia gave a significantly higher yield than the 1934 dressing of poultry manure. The results for Woburn (carrots) are given on p. 199—200.

There were no significant effects on runner beans at Perdiswell, the standard error per plot being very high.

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SUGAR BEET FERTILISER EXPERIMENTS

FACTORY SERIES

SYSTEM OF REPLICATION : 3 randomised blocks of 9 plots each, with two degrees of freedom, representing second order interactions, confounded with block differences. At Poppleton a mistake was made in laying-out the plots and the experiment was analysed as a single randomised block of 27 plots.

AREA OF EACH PLOT : Bury, Colwick 1 (Cast.), Colwick 2 (Dent.), Ipswich and Kidderminster : 1/10 acre. Cantley, Ely, Felstead, Peterboro' 1 (Thor.), Peterboro' 2 (Tall.), Poppleton and Selby : 1/20 acre. Allscott, Bardney 1 (Meth.), Bardney 2 (Horn.), Brigg 1 (Caistor), Brigg 2 (Scotton), Kings Lynn, Newark and Wissington 1 (Crimp.) : 1/40 acre. Wissington 2 (Wimb.) : 1/80. Tunstall : 1/100 acre. Oaklands : 1/150 acre.

TREATMENTS : All combinations of :——

{ No sulph. amm. (N_0) / 2 cwt. sulph. amm. (0.4 cwt. N) (N_1) / 4 cwt. sulph. amm. (0.8 cwt. N) (N_2) } × { No super. (P_0) / 3 cwt. super. (0.5 cwt. P_2O_5) (P_1) / 6 cwt. super. (1.0 cwt. P_2O_5) (P_2) } × { No mur. pot. (K_0) / 1½ cwt. mur. pot. (0.6 cwt. K_2O) (K_1) / 2½ cwt. mur. pot. (1.2 cwt. K_2O (K_2) }

VARIETIES : Bardney 2 (Horn.) : Johnson's. Colwick 1 (Cast.) and Colwick 2 (Dent.) : Kuhn. Cantley, Ely and Kings Lynn : Kuhn P. Peterborough 1 (Thor.) : Kleinwanzleben Z. Wissington 1 (Crimp.) : Marsters. Remainder : Kleinwanzleben E.

Mechanical and chemical analyses of soil samples from each experiment have been carried out.

Plant Density (mean values)

	Station	Yield in tons per acre	Plants in thousands per acre	Distance in inches between rows	Weight of roots in lb. per plant	St. Error per plot Roots tons p.a.
1	Allscott	7.79	30.0	19.8	0.58	1.26
2	Bardney 1 (Meth.)	9.36	27.7	20.0	0.76	0.355
3	Bardney 2 (Horn.)	11.06	25.0	20.0	1.00	0.728
4	Brigg 1 (Caistor)	10.34	25.4	18.0	0.91	0.836
5	Brigg 2 (Scotton)	9.41	33.7	18.0	0.63	0.792
6	Bury	9.27	26.1	19.5	0.80	0.717
7	Cantley	12.77	31.6	17.7	0.91	0.902
8	Colwick 1 (Cast.)	12.44	33.2	20.9	0.84	1.26
9	Colwick 2 (Dent.)	9.66	25.8	20.9	0.84	0.676
10	Ely	11.75	31.2	21.5	0.85	1.02
11	Felstead	9.84	20.6	22.1	1.07	1.22
12	Ipswich	8.18	—	19.7	—	1.03
13	Kidderminster	5.31	28.3	22.0	0.42	0.492
14	King's Lynn	8.01	32.8	18.9	0.55	0.614
15	Newark	7.38	29.9	19.0	0.56	0.886
16	Oaklands	6.06	23.6	22.0	0.58	0.514
17	Peterborough 1 (Thor.)	12.08	23.8	20.2	1.14	1.20
18	Peterborough 2 (Tall.)	12.98	26.6	19.8	1.10	1.75
19	Poppleton	10.74	26.9	22.5	0.89	1.42
20	Selby	11.97	33.6	20.7	0.80	0.761
21	Tunstall	5.43	59.1	16.5	0.21	0.534
22	Wissington 1 (Crimp.)	8.62	28.2	21.4	0.68	0.745
23	Wissington 2 (Wimb.)	8.82	31.1	20.1	0.64	1.51

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	Station	Soil	Previous crop	Date of sowing	Date of lifting	Farming notes
1	Allscott ..	Sandy	Beet	May 20	Dec. 30	Very poor land, no dung for a long time.
2	Bardney 1 (Meth.)	Limestone loam	Barley	Apr. 24	Oct. 24	
3	Bardney 2 (Horn.)	Light loam	Wheat	May 3	Nov. 12	8 loads dung to wheat
4	Brigg 1 (Caistor)	Sandy	Wheat	Apr. 25	Oct. 29	
5	Brigg 2 (Scotton)	Sandy	Oats	Apr. 24	Nov. 13	
6	Bury ..	Sandy loam	Beet	Apr. 27	Nov. 15	
7	Cantley ..	Sandy loam	Barley	Apr. 15	Nov. 22	
8	Colwick 1 (Cast.)	Sandy loam	Barley	May 1	Nov. 16	16 cwt. quick lime per acre. Plants showed up effect of N well.
9	Colwick 2 (Dent.) ..	Sandy loam	Wheat	May 6	Nov. 10	Signs of unusual supply of N in the soil.
10	Ely ..	Heavy fen	Beet	Apr. 27	Nov. 11	4 cwt. super to beet (1934). Some plots damaged by wind.
11	Felstead ..	Heavy loam	Wheat	Apr. 29	Nov. 19	No dung in recent years.
12	Ipswich ..	Light loam	Wheat	May 10	Dec. 11	Dung applied to wheat. 12 tons chalk on wheat stubble gyrotilled in.
13	Kidderminster	Light loam	Oats	May 3	Nov. 20	1 ton per acre of lime. Dressing of waste lime to oats. Crop badly damaged by aphis and summer drought.
14	King's Lynn	Sandy loam	Barley	Apr. 15	Oct. 16	
15	Newark ..	Sandy loam	Barley	May 8	Dec. 9	Very light dressing of dung.
16	Oaklands ..	Poor loam	Wheat	May 10	Oct. 25	
17	Peterborough 1 (Thor.)	Black fen on clay	Wheat	Apr. 20	Nov. 25	
18	Peterborough 2 (Tall.)	Medium loam on clay	Barley	May 8	Dec. 12	3 cwt. artificials to barley. Land gyrotilled in spring. No dung in recent years.
19	Poppleton ..	Sandy loam	Wheat	Apr. 26	Oct. 23	Gyrotilled after wheat.
20	Selby ..	Sandy loam	Beet	May 2	Oct. 16	Artificials and lime to beet (1934).
21	Tunstall ..	Poor sand	Rye	May 10	Nov. 14	Nitrate of soda applied to Rye. Crop suffered from drought.
22	Wissington 1 (Crimp.)	Gravelly loam	Barley	Apr. 13	Oct. 28	
23	Wissington 2 (Wimb.) ..	Sandy	Beans	Apr. 23	Nov. 22	

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Sampling errors in sampling for sugar content

(10 *roots in each sample*)

Station	No. of samples analysed per plot	Standard error per sample
2 Bardney (Meth.)	2	0.159
3 Bardney (Horn.)	2	0.190
4 Brigg (Caistor) . .	2	0.270
5 Brigg (Scotton)	2	0.176
7 Cantley . .	2	0.288
11 Felstead . .	2	0.338
13 Kidderminster	2	0.353
15 Newark . .	2	0.0962
22 Wissington (Crimp.)	4	0.333
23 Wissington (Wimb.)	4	0.289

Significant Responses

	N	P	K	N × P	N × K	P × K
Roots (23)	+*	0	0	0	+	0
Tops . . (20)	+*	0	0	0	0	0
Sugar % (23)	−*	0	+*	−*	0	0
Purity % (20)	−*	0	0	0	0	0
		Curvature			Symbols	
Roots	0	0	0	+ = Positive { Significant		
Tops	0	0	0	0 = No { Average		
Sugar % . .	−	0	0	− = Negative { Response		
Purity % . .	−	0	0	(23) = No. of centres		
				* = Significant differences between centres.		

Mean Responses per 1 *cwt. of* N, P_2O_5 *and* K_2O.

	N		P		K	
	Average 1933-34	1935	Average 1933-34	1935	Average 1933-34	1935
Roots—tons . .	+1.07	+1.41	+0.25	+0.12	+0.12	+0.13
Tops—tons . .	+3.07	+3.20	+0.32	+0.17	+0.14	+0.01
Sugar % . .	−0.68	−0.79	0.00	0.00	+0.24	+0.20
Total Sugar . .	+2.3	+3.4	+0.9	+0.4	+0.9	+0.8
Plant number . .	+0.61	+0.35	+0.65	−0.03	+0.43	+0.07
Purity % . .	−0.9	−0.8	+0.7	+0.1	0.0	+0.2

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Main Effects and First Order Interactions

ALLSCOTT 1

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre ($\pm$0.727. *Means :* $\pm$*0.420*)										
N_0	7.40	9.06	7.72	7.93	7.14	9.11	*8.06*	K_0	6.87	7.07	8.91
N_1	7.16	7.05	9.04	7.87	7.44	7.95	*7.75*	K_1	6.94	8.19	7.36
N_2	7.01	7.55	8.08	7.05	7.91	7.67	*7.55*	K_2	7.76	8.41	8.56
Mean ..	*7.19*	*7.89*	*8.28*	*7.62*	*7.50*	*8.24*	*7.79*				
	TOPS : tons per acre ($\pm$0.733. *Means :* $\pm$*0.423*)										
N_0	7.06	7.42	7.30	6.86	7.50	7.39	*7.26*	K_0	6.63	7.34	7.86
N_1	7.06	7.26	9.09	7.74	7.74	7.93	*7.80*	K_1	7.46	7.97	8.45
N_2	7.30	8.17	8.65	7.22	8.65	8.25	*8.04*	K_2	7.34	7.54	8.73
Mean ..	*7.14*	*7.62*	*8.34*	*7.28*	*7.96*	*7.87*	*7.70*				
	SUGAR PERCENTAGE : ($\pm$0.315. *Means :* $\pm$*0.182*)										
N_0	15.77	16.43	16.53	16.47	16.10	16.17	*16.24*	K_0	16.13	15.70	16.10
N_1	16.10	15.77	15.77	15.33	16.20	16.10	*15.88*	K_1	16.23	15.97	15.90
N_2	15.93	15.73	16.00	16.13	15.80	15.73	*15.89*	K_2	15.43	16.27	16.30
Mean ..	*15.93*	*15.98*	*16.10*	*15.98*	*16.03*	*16.00*	*16.00*				
	TOTAL SUGAR : cwt. per acre										
N_0	23.3	29.8	25.6	26.1	23.1	29.4	*26.2*	K_0	22.4	22.3	28.6
N_1	23.1	22.3	28.4	24.2	24.1	25.6	*24.6*	K_1	22.6	26.2	23.4
N_2	22.4	23.7	25.9	22.8	25.0	24.2	*24.0*	K_2	23.9	27.4	27.9
Mean ..	*22.9*	*25.3*	*26.6*	*24.4*	*24.1*	*26.4*	*25.0*				
	PLANT NUMBER : thousands per acre										
N_0	29.3	31.5	30.8	29.7	28.2	33.8	*30.5*	K_0	31.3	29.4	27.0
N_1	30.4	31.2	34.1	34.3	32.8	28.7	*31.9*	K_1	27.2	27.9	33.5
N_2	27.5	25.8	29.7	23.7	27.6	31.7	*27.7*	K_2	28.7	31.3	34.2
Mean ..	*29.1*	*29.5*	*31.5*	*29.4*	*29.5*	*31.4*	*30.0*				
	PERCENTAGE PURITY : ($\pm$0.984. *Means :* $\pm$*0.568*)										
N_0	87.8	87.6	87.9	88.8	87.5	87.0	*87.8*	K_0	87.8	85.9	87.6
N_1	87.9	87.0	87.4	85.9	87.4	89.0	*87.4*	K_1	86.7	87.3	86.8
N_2	85.2	87.1	86.2	86.7	85.9	85.9	*86.2*	K_2	86.5	88.4	87.1
Mean ..	*87.0*	*87.2*	*87.2*	*87.1*	*86.9*	*87.3*	*87.1*				

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BARDNEY (Meth.) 2

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre ($\pm$0.204. *Means :* $\pm$*0.118*)										
N_0	8.88	8.78	9.38	9.09	9.02	8.93	*9.01*	K_0	9.41	9.22	9.36
N_1	9.58	9.38	9.18	9.60	9.26	9.29	*9.38*	K_1	9.36	9.24	9.33
N_2	9.74	9.86	9.42	9.31	9.66	10.06	*9.67*	K_2	9.43	9.56	9.30
Mean ..	*9.40*	*9.34*	*9.33*	*9.33*	*9.31*	*9.43*	9.36				
	TOPS : tons per acre ($\pm$0.292. *Means :* $\pm$*0.168*)										
N_0	5.74	5.83	6.22	5.87	6.08	5.84	*5.93*	K_0	7.00	8.24	7.74
N_1	7.03	7.35	7.14	7.52	7.25	6.75	*7.17*	K_1	7.12	7.42	7.47
N_2	8.49	9.76	8.91	9.59	8.68	8.89	*9.05*	K_2	7.14	7.28	7.09
Mean ..	*7.09*	*7.81*	*7.43*	*7.66*	*7.34*	*7.17*	7.38				
	SUGAR PERCENTAGE : ($\pm$0.141. *Means :* $\pm$*0.0814*)										
N_0	17.63	17.13	17.40	17.07	17.53	17.57	*17.39*	K_0	16.67	16.13	16.57
N_1	17.00	16.73	17.13	16.63	16.83	17.40	*16.95*	K_1	17.03	16.60	16.97
N_2	16.47	15.73	16.07	15.67	16.23	16.37	*16.09*	K_2	17.40	16.87	17.07
Mean ..	*17.03*	*16.53*	*16.87*	*16.46*	*16.87*	*17.11*	16.81				
	TOTAL SUGAR : cwt. per acre										
N_0	31.3	30.1	32.6	31.0	31.6	31.4	*31.3*	K_0	31.3	29.7	31.1
N_1	32.6	31.4	31.5	31.9	31.2	32.3	*31.8*	K_1	31.9	30.6	31.6
N_2	32.1	31.0	30.3	29.2	31.3	32.9	*31.1*	K_2	32.7	32.2	31.7
Mean ..	*31.9*	*28.3*	*31.5*	*30.7*	*31.4*	*32.2*	31.4				
	PLANT NUMBER : thousands per acre										
N_0	28.6	28.2	27.4	27.5	28.6	28.1	*28.1*	K_0	27.8	28.1	27.8
N_1	27.6	27.6	27.1	28.6	27.2	26.5	*27.4*	K_1	27.5	28.5	27.0
N_2	27.3	28.1	27.7	27.6	27.2	28.2	*27.7*	K_2	28.2	27.3	27.4
Mean ..	*27.8*	*28.0*	*27.4*	*27.9*	*27.7*	*27.6*	27.7				
	PERCENTAGE PURITY : ($\pm$0.674. *Means :* $\pm$*0.389*)										
N_0	87.4	87.0	88.1	87.2	88.0	87.3	*87.5*	K_0	87.4	86.4	87.7
N_1	87.6	87.1	87.2	87.7	87.0	87.2	*87.3*	K_1	88.2	86.5	86.7
N_2	87.0	86.7	85.8	86.6	86.4	86.5	*86.5*	K_2	86.4	88.0	86.6
Mean ..	*87.5*	*87.0*	*87.0*	*87.2*	*87.1*	*87.0*	87.1				

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BARDNEY (Horn.) **3**

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.420. *Means :* $\pm$*0.242*)											
N_0	11.56	10.77	10.08	10.03	11.33	11.05	*10.80*	K_0	11.04	11.46	10.73
N_1	11.24	11.85	10.16	11.40	10.83	11.02	*11.08*	K_1	11.32	11.84	10.52
N_2	10.65	12.01	11.24	11.79	11.53	10.58	*11.30*	K_2	11.09	11.32	10.23
Mean ..	*11.15*	*11.54*	*10.49*	*11.08*	*11.23*	*10.88*	*11.06*				
TOPS : tons per acre ($\pm$0.612. *Means :* $\pm$*0.353*)											
N_0	8.75	6.97	8.43	7.75	8.10	8.30	*8.05*	K_0	10.13	9.60	8.66
N_1	9.93	10.09	8.22	9.55	9.52	9.17	*9.41*	K_1	10.03	9.61	9.44
N_2	10.68	10.97	11.66	11.09	11.46	10.76	*11.10*	K_2	9.20	8.82	10.21
Mean ..	*9.79*	*9.34*	*9.44*	*9.46*	*9.69*	*9.41*	*9.52*				
SUGAR PERCENTAGE : ($\pm$0.189. *Means :* $\pm$*0.109*)											
N_0	16.47	17.23	16.97	16.87	16.63	17.17	*16.89*	K_0	16.53	16.50	16.60
N_1	16.70	16.63	16.73	16.77	16.60	16.70	*16.69*	K_1	16.37	16.73	16.43
N_2	16.40	16.10	16.07	16.00	16.30	16.27	*16.19*	K_2	16.67	16.73	16.73
Mean ..	*16.52*	*16.65*	*16.59*	*16.55*	*16.51*	*16.71*	*16.59*				
TOTAL SUGAR : cwt. per acre											
N_0	38.0	37.1	34.2	33.8	37.6	37.9	*36.4*	K_0	36.5	37.7	35.6
N_1	37.6	39.4	34.0	38.2	35.9	36.8	*37.0*	K_1	37.0	39.6	34.5
N_2	35.0	38.6	36.1	37.7	37.6	34.4	*36.6*	K_2	37.1	37.9	34.2
Mean ..	*36.9*	*38.4*	*34.8*	*36.6*	*37.0*	*36.4*	*36.7*				
PLANT NUMBER : thousands per acre											
N_0	26.0	24.9	23.6	23.8	24.8	25.9	*24.8*	K_0	24.9	25.6	24.3
N_1	27.4	26.5	23.8	25.7	25.9	26.1	*25.9*	K_1	25.3	25.6	24.2
N_2	22.6	25.4	24.6	25.3	24.4	22.9	*24.2*	K_2	25.8	25.7	23.5
Mean ..	*25.3*	*25.6*	*24.0*	*24.9*	*25.0*	*25.0*	*25.0*				
PERCENTAGE PURITY : ($\pm$0.555. *Means :* $\pm$*0.320*)											
N_0	86.4	86.8	86.5	86.7	86.3	86.7	*86.7*	K_0	86.1	86.7	86.6
N_1	86.1	87.4	86.0	86.3	85.9	87.4	*86.5*	K_1	86.2	87.0	85.8
N_2	87.0	86.9	86.5	86.4	86.9	87.2	*86.8*	K_2	87.2	87.5	86.5
Mean ..	*86.5*	*87.1*	*86.3*	*86.5*	*86.3*	*87.1*	*86.6*				

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BRIGG (Caistor) 4

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre (±0.483. *Means :* ±*0.279*)										
N_0	8.29	8.08	8.58	7.97	9.05	7.92	*8.32*	K_0	9.89	10.08	10.63
N_1	10.42	11.39	10.81	11.12	10.82	10.69	*10.87*	K_1	10.36	10.45	10.82
N_2	11.45	11.84	12.21	11.51	11.79	12.21	*11.83*	K_2	9.91	10.76	10.15
Mean ..	*10.05*	*10.43*	*10.53*	*10.20*	*10.55*	*10.27*	*10.34*				
	TOPS : tons per acre (±0.394. *Means :* ±*0.227*)										
N_0	4.87	4.26	4.71	4.60	4.80	4.43	*4.61*	K_0	7.27	6.85	7.38
N_1	6.76	6.63	6.76	7.18	6.80	6.17	*6.72*	K_1	7.02	6.39	7.25
N_2	10.21	9.33	9.05	9.72	9.06	9.82	*9.53*	K_2	7.56	6.98	5.78
Mean ..	*7.28*	*6.74*	*6.80*	*7.17*	*6.90*	*6.77*	*6.95*				
	SUGAR PERCENTAGE : (±0.170. *Means:* ±*0.0982*)										
N_0	17.47	17.60	17.70	17.33	17.60	17.83	*17.59*	K_0	16.87	17.37	17.10
N_1	17.37	17.70	17.60	17.30	17.67	17.70	*17.56*	K_1	17.33	17.73	17.40
N_2	16.57	17.27	17.10	16.70	17.20	17.03	*16.98*	K_2	17.20	17.47	17.90
Mean ..	*17.14*	*17.52*	*17.47*	*17.11*	*17.49*	*17.52*	*17.38*				
	TOTAL SUGAR : cwt. per acre										
N_0	29.0	28.4	30.3	27.6	31.8	28.3	*29.2*	K_0	33.4	34.9	36.3
N_1	36.2	40.3	38.0	38.4	38.2	37.8	*38.2*	K_1	35.8	37.2	37.5
N_2	37.9	40.8	41.8	38.5	40.4	41.6	*40.2*	K_2	33.9	37.5	36.3
Mean ..	*34.4*	*36.5*	*36.7*	*34.9*	*36.8*	*35.9*	*35.9*				
	PLANT NUMBER : thousands per acre										
N_0	24.4	23.0	24.3	22.7	25.4	23.5	*23.9*	K_0	25.2	24.4	25.5
N_1	25.3	26.1	25.3	25.9	26.0	24.8	*25.6*	K_1	25.6	26.1	26.4
N_2	26.7	26.5	26.8	26.5	26.7	26.9	*26.7*	K_2	25.6	25.1	24.5
Mean ..	*25.5*	*25.2*	*25.5*	*25.0*	*26.0*	*25.1*	*25.4*				
	PERCENTAGE PURITY : (±0.259. *Means :* ±*0.150*)										
N_0	89.1	90.1	90.2	89.4	89.7	90.2	*89.8*	K_0	88.9	89.7	89.3
N_1	89.3	90.2	89.6	89.7	89.7	89.8	*89.7*	K_1	89.0	89.7	89.7
N_2	89.0	88.9	89.2	88.8	89.0	89.3	*89.0*	K_2	89.6	89.8	90.0
Mean ..	*89.2*	*89.7*	*89.7*	*89.3*	*89.5*	*89.8*	*89.5*				

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BRIGG (Scotton) 5

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed): tons per acre (±0.457. *Means:* ±*0.264*)											
N_0	7.56	7.77	8.28	7.85	8.54	7.23	*7.87*	K_0	8.71	10.04	9.81
N_1	8.93	10.08	9.66	9.47	9.63	9.57	*9.56*	K_1	9.52	9.35	10.11
N_2	10.42	11.25	10.72	11.24	10.81	10.33	*10.80*	K_2	8.68	9.71	8.75
Mean ..	*8.97*	*9.70*	*9.56*	*9.52*	*9.66*	*9.04*	*9.41*				
TOPS: tons per acre (±0.311. *Means:* ±*0.180*)											
N_0	5.10	5.27	5.22	4.82	5.68	5.09	*5.20*	K_0	7.27	7.85	7.23
N_1	7.15	7.73	7.59	7.11	7.89	7.48	*7.49*	K_1	7.68	7.69	8.23
N_2	9.85	10.27	9.64	10.42	10.03	9.31	*9.92*	K_2	7.15	7.74	6.99
Mean ..	*7.37*	*7.76*	*7.48*	*7.45*	*7.87*	*7.29*	*7.54*				
SUGAR PERCENTAGE: (±0.225. *Means:* ±*0.130*)											
N_0	16.63	16.87	16.93	17.00	16.73	16.70	*16.81*	K_0	16.63	16.80	16.60
N_1	16.70	16.67	16.73	16.67	16.87	16.57	*16.70*	K_1	16.63	16.27	16.60
N_2	16.43	16.40	15.93	16.37	15.90	16.50	*16.25*	K_2	16.50	16.87	16.40
Mean ..	*16.59*	*16.65*	*16.53*	*16.68*	*16.50*	*16.59*	*16.59*				
TOTAL SUGAR: cwt. per acre											
N_0	25.2	26.2	28.0	26.7	28.6	24.1	*26.5*	K_0	28.9	33.6	32.5
N_1	29.9	33.7	32.3	31.6	32.5	31.7	*32.0*	K_1	31.7	30.4	33.4
N_2	34.2	36.9	34.2	36.8	34.4	34.2	*35.1*	K_2	28.7	32.8	28.6
Mean ..	*29.8*	*32.3*	*31.5*	*31.7*	*31.8*	*30.0*	*31.2*				
PLANT NUMBER: thousands per acre											
N_0	33.4	33.1	31.1	33.0	32.9	31.7	*32.5*	K_0	33.5	34.5	32.6
N_1	35.0	33.7	32.6	33.0	34.0	34.3	*33.8*	K_1	34.0	34.7	33.9
N_2	33.6	36.2	35.0	34.6	35.8	34.4	*34.9*	K_2	34.5	33.8	32.1
Mean ..	*34.0*	*34.3*	*32.9*	*33.5*	*34.2*	*33.5*	*33.7*				
PERCENTAGE PURITY: (±0.507. *Means:* ±*0.293*)											
N_0	87.9	86.9	87.3	87.8	86.7	87.6	*87.4*	K_0	86.8	86.9	86.7
N_1	86.8	87.6	87.7	87.1	87.4	87.7	*87.4*	K_1	87.2	86.0	87.0
N_2	86.6	85.8	86.1	85.5	86.2	86.9	*86.2*	K_2	87.3	87.5	87.4
Mean ..	*87.1*	*86.8*	*87.0*	*86.8*	*86.8*	*87.4*	*87.0*				

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BURY ST. EDMUNDS 6

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.414. *Means : $\pm$0.239*)											
N_0	8.77	8.77	8.85	8.89	8.44	9.06	*8.80*	K_0	9.18	9.88	9.02
N_1	8.48	9.06	9.68	9.31	8.81	9.10	*9.07*	K_1	8.61	9.02	9.51
N_2	9.80	10.21	9.80	9.88	9.88	10.05	*9.94*	K_2	9.26	9.14	9.80
Mean ..	*9.02*	*9.35*	*9.44*	*9.36*	*9.05*	*9.40*	*9.27*				
TOPS : tons per acre ($\pm$0.374. *Means : $\pm$0.216*)											
N_0	5.94	5.99	5.91	5.75	6.06	6.03	*5.95*	K_0	6.97	7.02	6.97
N_1	7.42	7.14	7.63	6.97	8.06	7.16	*7.40*	K_1	7.07	7.87	7.28
N_2	8.55	8.91	7.89	8.25	8.10	9.00	*8.45*	K_2	7.87	7.14	7.19
Mean ..	*7.30*	*7.34*	*7.15*	*6.99*	*7.41*	*7.40*	*7.26*				
SUGAR PERCENTAGE : ($\pm$0.201. *Means : $\pm$0.116*)											
N_0	17.30	17.37	17.87	17.60	17.50	17.43	*17.51*	K_0	17.07	16.90	17.70
N_1	17.33	17.20	17.33	17.33	17.27	17.27	*17.29*	K_1	17.10	17.07	17.20
N_2	16.53	16.53	17.33	16.73	16.60	17.07	*16.80*	K_2	17.00	17.13	17.63
Mean ..	*17.06*	*17.03*	*17.51*	*17.22*	*17.12*	*17.26*	*17.20*				
TOTAL SUGAR : cwt. per acre											
N_0	30.3	30.5	31.6	31.3	29.6	31.6	*30.8*	K_0	31.3	33.3	31.9
N_1	29.4	31.1	33.5	32.2	30.4	31.4	*31.3*	K_1	29.4	30.7	32.7
N_2	32.4	33.8	34.0	33.0	32.8	34.3	*33.4*	K_2	31.5	31.3	34.5
Mean ..	*30.7*	*31.8*	*33.0*	*32.2*	*30.9*	*32.4*	*31.8*				
PLANT NUMBER : thousands per acre											
N_0	25.5	25.0	23.9	25.7	23.8	24.8	*24.8*	K_0	26.0	26.8	25.1
N_1	25.4	25.5	27.8	25.5	25.8	27.4	*26.2*	K_1	26.3	25.2	25.1
N_2	29.2	26.6	26.1	26.9	27.0	27.9	*27.3*	K_2	27.7	25.1	27.4
Mean ..	*26.7*	*25.7*	*25.9*	*26.0*	*25.5*	*26.7*	*26.1*				
PERCENTAGE PURITY : ($\pm$0.424. *Means : $\pm$0.245*)											
N_0	90.6	91.7	91.1	91.7	91.0	90.7	*91.1*	K_0	89.9	91.0	90.9
N_1	90.8	90.4	90.3	90.4	90.6	90.5	*90.5*	K_1	90.9	90.0	90.4
N_2	89.6	89.5	90.1	89.8	89.7	89.7	*89.7*	K_2	90.2	90.6	90.1
Mean ..	*90.3*	*90.5*	*90.5*	*90.6*	*90.4*	*90.3*	*90.4*				

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CANTLEY 7

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.521. *Means : $\pm$0.301*)											
N_0	11.62	12.95	12.48	12.17	12.64	12.25	*12.35*	K_0	12.48	12.41	12.48
N_1	12.72	12.80	12.80	12.80	13.03	12.49	*12.77*	K_1	13.34	12.64	12.80
N_2	13.42	12.72	13.42	12.41	13.11	14.05	*13.19*	K_2	11.94	13.42	13.42
Mean ..	*12.59*	*12.82*	*12.90*	*12.46*	*12.93*	*12.93*	12.77				
TOPS : tons per acre ($\pm$0.518. *Means : $\pm$0.299*)											
N_0	8.33	8.26	7.43	7.97	8.40	7.64	*8.00*	K_0	9.36	8.85	9.63
N_1	8.56	8.38	9.08	9.16	9.22	7.64	*8.67*	K_1	9.27	9.81	8.96
N_2	10.22	10.93	10.97	10.71	10.43	10.97	*10.71*	K_2	8.47	8.90	8.89
Mean ..	*9.04*	*9.19*	*9.16*	*9.28*	*9.35*	*8.75*	9.13				
SUGAR PERCENTAGE : ($\pm$0.208. *Means : $\pm$0.120*)											
N_0	17.90	17.57	17.47	17.37	18.00	17.57	*17.65*	K_0	17.70	16.93	17.00
N_1	17.73	17.47	17.33	17.33	17.60	17.60	*17.51*	K_1	17.50	17.93	17.23
N_2	17.30	16.93	16.67	16.93	17.07	16.93	*16.97*	K_2	17.77	17.10	17.23
Mean ..	*17.64*	*17.32*	*17.16*	*17.21*	*17.55*	*17.37*	17.38				
TOTAL SUGAR : cwt. per acre											
N_0	41.6	45.5	43.7	42.3	45.5	43.0	*43.6*	K_0	44.2	42.0	42.5
N_1	45.1	44.7	44.4	44.4	45.7	43.9	*44.7*	K_1	46.6	45.4	44.1
N_2	46.5	43.1	44.8	42.0	44.8	47.6	*44.8*	K_2	42.3	45.9	46.2
Mean ..	*44.4*	*44.4*	*44.3*	*42.9*	*45.4*	*44.8*	44.4				
PLANT NUMBER : thousands per acre											
N_0	32.7	32.7	31.3	31.5	32.7	32.4	*32.2*	K_0	32.6	31.7	31.0
N_1	32.3	31.0	25.0	30.5	27.3	30.4	*29.4*	K_1	34.0	31.1	27.8
N_2	34.3	31.8	33.2	33.2	32.9	33.2	*33.1*	K_2	32.7	32.7	30.7
Mean ..	*33.1*	*31.8*	*29.8*	*31.8*	*31.0*	*32.0*	31.6				
PERCENTAGE PURITY : ($\pm$1.49. *Means : $\pm$0.860*)											
N_0	93.8	94.3	92.3	91.7	94.5	94.2	*93.5*	K_0	92.9	90.3	93.0
N_1	92.7	92.7	96.1	93.2	93.0	95.4	*93.8*	K_1	92.4	94.1	93.2
N_2	94.5	90.8	92.6	91.4	92.2	94.4	*92.6*	K_2	95.7	93.4	94.8
Mean ..	*93.7*	*92.6*	*93.7*	*92.1*	*93.2*	*94.6*	93.3				

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COLWICK (Cast.) 8.

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre (±0.727. *Means : ±0.420*)											
N_0	11.16	12.25	10.76	11.28	11.77	11.12	*11.39*	K_0	10.80	13.38	11.45
N_1	12.73	12.86	11.85	11.77	13.30	12.37	*12.48*	K_1	12.77	13.90	11.97
N_2	13.58	13.66	13.10	12.57	13.58	14.19	*13.45*	K_2	13.90	11.47	12.29
Mean ..	*12.49*	*12.92*	*11.90*	*11.87*	*12.88*	*12.56*	*12.44*				
TOPS : tons per acre (±0.482. *Means : ±0.278*)											
N_0	5.88	6.47	5.82	5.95	5.84	6.39	*6.06*	K_0	7.58	8.33	6.55
N_1	8.45	7.97	7.90	7.01	8.59	8.72	*8.11*	K_1	8.20	8.35	7.94
N_2	11.00	10.18	9.09	9.49	10.06	10.71	*10.09*	K_2	9.56	7.94	8.32
Mean ..	*8.45*	*8.21*	*7.60*	*7.48*	*8.16*	*8.61*	*8.08*				
SUGAR PERCENTAGE : (±0.341. *Means : ±0.197*)											
N_0	17.93	17.83	18.23	17.90	18.33	17.77	*18.00*	K_0	17.20	17.67	17.10
N_1	17.57	17.40	17.33	17.47	17.73	17.10	*17.43*	K_1	17.87	17.80	17.70
N_2	16.87	17.03	16.83	16.60	17.30	16.83	*16.91*	K_2	17.30	16.80	17.60
Mean ..	*17.46*	*17.42*	*17.47*	*17.32*	*17.79*	*17.23*	*17.45*				
TOTAL SUGAR : cwt. per acre											
N_0	40.1	43.8	39.2	40.5	43.1	39.5	*41.0*	K_0	37.0	47.3	39.1
N_1	44.8	44.9	41.1	41.1	47.1	42.5	*43.6*	K_1	45.6	49.4	42.3
N_2	45.8	46.6	44.2	41.7	47.0	47.8	*45.5*	K_2	48.1	38.6	43.1
Mean ..	*43.6*	*45.1*	*41.5*	*41.1*	*45.8*	*43.3*	*43.4*				
PLANT NUMBER : thousands per acre											
N_0	33.4	32.8	33.5	33.3	32.8	33.7	*33.3*	K_0	33.7	32.9	32.2
N_1	34.2	33.6	33.1	33.4	33.8	33.6	*33.6*	K_1	33.1	32.9	33.3
N_2	33.0	32.7	32.1	32.1	32.7	33.0	*32.6*	K_2	33.8	33.3	33.3
Mean ..	*33.5*	*33.0*	*32.9*	*32.9*	*33.1*	*33.5*	*33.2*				
PERCENTAGE PURITY : (±0.676. *Means : ±0.390*)											
N_0	87.3	87.8	87.3	87.1	88.0	87.3	*87.5*	K_0	86.5	88.3	87.5
N_1	87.7	87.9	87.9	87.9	87.1	88.4	*87.8*	K_1	87.0	88.2	87.3
N_2	86.7	87.7	88.2	87.3	87.3	88.0	*87.5*	K_2	88.2	86.9	88.6
Mean ..	*87.2*	*87.8*	*87.8*	*87.4*	*87.5*	*87.9*	*87.6*				

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COLWICK (Dent.) 9

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre ($\pm$0.390. *Means : $\pm$ 0.225*)										
N_0	9.41	9.94	9.20	9.90	9.03	9.61	*9.52*	K_0	9.94	9.78	9.61
N_1	9.94	9.53	9.28	9.65	10.02	9.07	*9.58*	K_1	9.49	10.15	9.20
N_2	9.82	9.86	9.94	9.77	9.78	10.07	*9.87*	K_2	9.74	9.40	9.61
Mean ..	*9.72*	*9.78*	*9.47*	*9.78*	*9.61*	*9.58*	9.66				
	TOPS : tons per acre ($\pm$0.466. *Means : $\pm$0.269*)										
N_0	7.42	7.36	7.58	7.61	7.05	7.70	*7.45*	K_0	7.94	7.84	8.30
N_1	8.30	8.22	8.47	7.90	9.30	7.79	*8.33*	K_1	7.81	8.72	9.19
N_2	8.33	9.23	10.05	8.58	9.36	9.67	*9.20*	K_2	8.30	8.26	8.61
Mean ..	*8.02*	*8.27*	*8.70*	*8.03*	*8.57*	*8.39*	8.33				
	SUGAR PERCENTAGE : ($\pm$0.231. *Means : $\pm$0.133*)										
N_0	17.37	17.17	17.10	17.03	17.47	17.13	*17.21*	K_0	16.73	16.90	16.73
N_1	17.13	16.77	17.20	16.77	17.13	17.20	*17.03*	K_1	17.27	17.20	17.10
N_2	17.03	16.90	16.53	16.57	16.97	16.93	*16.82*	K_2	17.53	16.70	17.00
Mean ..	*17.18*	*16.95*	*16.94*	*16.79*	*17.19*	*17.08*	17.02				
	TOTAL SUGAR : cwt. per acre										
N_0	32.7	34.1	31.5	33.7	31.6	32.9	*32.7*	K_0	33.3	33.0	32.1
N_1	34.0	31.9	31.9	32.3	34.3	31.2	*32.6*	K_1	32.7	34.8	31.5
N_2	33.4	33.3	32.8	32.3	33.2	34.1	*33.2*	K_2	34.1	31.5	32.6
Mean ..	*33.4*	*33.1*	*32.1*	*32.8*	*33.0*	*32.7*	32.8				
	PLANT NUMBER : thousands per acre										
N_0	26.0	27.0	24.3	25.3	26.8	25. 2	*25.8*	K_0	25.3	26.5	25.0
N_1	27.0	24.9	26.2	26.2	26.1	25.9	*26.1*	K_1	26.3	26.7	25.7
N_2	25.3	25.8	25.8	25.3	25.9	25.7	*25.6*	K_2	26.6	24.5	25.7
Mean ..	*26.1*	*25.9*	*25.5*	*25.6*	*26.2*	*25.6*	25.8				
	PERCENTAGE PURITY : ($\pm$0.308. *Means : $\pm$0.178*)										
N_0	85.9	86.2	85.7	85.3	86.3	86.3	*86.0*	K_0	85.6	86.2	86.5
N_1	86. 4	86.6	86.6	86.6	86.4	86.6	*86.5*	K_1	86.3	86.1	86.3
N_2	85.5	86.3	86.7	86.5	85.6	86.3	*86.1*	K_2	86.2	86.9	86.1
Mean ..	*86.0*	*86.4*	*86.3*	*86.1*	*86.2*	*86.4*	86.2				

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ELY 10

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.589). *Means : $\pm$0.340)*											
N_0	11.95	11.33	11.13	11.06	11.01	12.34	*11.47*	K_0	11.39	10.59	11.81
N_1	11.79	11.87	12.36	11.77	11.45	12.81	*12.01*	K_1	11.67	11.99	11.03
N_2	12.29	11.43	11.58	10.96	12.23	12.11	*11.77*	K_2	12.98	12.05	12.23
Mean ..	*12.01*	*11.54*	*11.69*	*11.26*	*11.56*	*12.42*	*11.75*				
TOPS : tons per acre ($\pm$2.85. *Means : $\pm$1.64)*											
N_0	21.18	22.00	21.55	22.47	20.18	22.08	*21.58*	K_0	22.15	23.28	17.18
N_1	21.14	22.01	21.85	22.51	20.87	21.61	*21.67*	K_1	14.52	20.00	21.40
N_2	16.27	22.47	15.20	17.63	14.85	21.46	*17.98*	K_2	21.92	23.21	20.02
Mean ..	*19.53*	*22.16*	*19.53*	*20.87*	*18.64*	*21.72*	*20.41*				
SUGAR PERCENTAGE : ($\pm$0.500. *Means : $\pm$0.289)*											
N_0	14.20	14.77	14.93	13.63	15.43	14.83	*14.63*	K_0	14.47	13.97	13.13
N_1	15.30	14.90	14.87	14.43	15.40	15.23	*15.02*	K_1	14.70	14.57	15.27
N_2	14.73	13.77	14.20	13.50	13.70	15.50	*14.23*	K_2	15.07	14.90	15.60
Mean ..	*14.74*	*14.48*	*14.67*	*13.85*	*14.84*	*15.19*	*14.63*				
TOTAL SUGAR : cwt. per acre											
N_0	34.0	33.5	33.3	30.1	34.0	36.6	*33.6*	K_0	32.9	29.6	31.2
N_1	36.0	35.6	36.6	33.8	35.4	39.0	*36.1*	K_1	34.2	34.9	33.7
N_2	36.2	31.3	33.3	29.8	33.4	37.6	*33.6*	K_2	39.1	35.9	38.3
Mean ..	*35.4*	*33.5*	*34.4*	*31.2*	*34.3*	*37.7*	*34.4*				
PLANT NUMBER : thousands per acre											
N_0	31.9	33.3	36.3	31.4	35.7	34.5	*33.8*	K_0	30.4	31.6	29.9
N_1	35.3	31.1	27.3	29.5	32.2	32.4	*31.2*	K_1	29.0	33.5	32.0
N_2	24.6	34.9	26.2	31.0	26.6	28.1	*28.6*	K_2	32.4	34.5	28.0
Mean ..	*30.6*	*33.1*	*30.0*	*30.6*	*31.5*	*31.6*	*31.2*				
PERCENTAGE PURITY : ($\pm$0.760. *Means : $\pm$0.439)*											
N_0	85.7	84.7	86.9	85.7	86.4	85.2	*85.8*	K_0	87.0	85.7	83.9
N_1	86.3	86.1	85.0	85.2	85.9	86.3	*85.8*	K_1	85.7	84.9	86.6
N_2	85.9	86.2	85.0	85.7	84.9	86.4	*85.7*	K_2	85.1	86.3	86.4
Mean ..	*86.0*	*85.7*	*85.6*	*85.5*	*85.7*	*85.9*	*85.7*				

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FELSTEAD 11

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.704. *Means : $\pm$0.406*)											
N_0	10.31	8.66	9.45	9.21	9.37	9.84	*9.47*	K_0	8.66	9.37	11.33
N_1	8.90	10.16	9.29	9.60	8.66	10.08	*9.45*	K_1	9.29	10.47	8.82
N_2	9.60	10.94	11.26	10.55	10.55	10.71	*10.60*	K_2	10.86	9.92	9.84
Mean ..	*9.60*	*9.92*	*10.00*	*9.79*	*9.53*	*10.21*	*9.84*				
TOPS : tons per acre ($\pm$0.993. *Means : $\pm$0.573*)											
N_0	2.74	3.22	4.88	4.00	4.16	2.68	*3.61*	K_0	3.06	4.04	5.18
N_1	3.45	2.24	2.82	3.53	1.86	3.15	*2.84*	K_1	3.10	4.53	2.66
N_2	3.23	5.33	3.87	4.74	4.27	3.42	*4.14*	K_2	3.26	2.26	3.72
Mean ..	*3.14*	*3.60*	*3.86*	*4.07*	*3.43*	*3.08*	*3.53*				
SUGAR PERCENTAGE : ($\pm$0.251. *Means : $\pm$0.145*)											
N_0	17.33	17.30	17.07	17.20	17.13	17.37	*17.23*	K_0	16.27	17.07	17.10
N_1	16.70	17.30	16.73	16.43	17.17	17.13	*16.91*	K_1	17.03	17.07	16.87
N_2	16.37	16.77	17.10	16.80	16.67	16.77	*16.75*	K_2	17.10	17.23	16.93
Mean ..	*16.80*	*17.12*	*16.97*	*16.81*	*16.99*	*17.09*	*17.00*				
TOTAL SUGAR : cwt. per acre											
N_0	35.8	30.0	32.3	31.7	32.2	34.2	*32.7*	K_0	28.3	32.0	38.8
N_1	29.9	35.2	31.1	31.8	29.7	34.6	*32.1*	K_1	31.6	35.7	29.8
N_2	31.4	36.7	38.5	35.5	35.2	35.9	*35.5*	K_2	37.2	34.1	33.3
Mean ..	*32.4*	*34.0*	*34.0*	*33.0*	*32.4*	*34.9*	*33.4*				
PLANT NUMBER : thousands per acre											
N_0	20.4	19.2	20.3	19.9	19.4	20.9	*20.1*	K_0	18.2	20.4	23.3
N_1	19.3	20.1	21.7	20.5	20.4	20.7	*20.4*	K_1	19.9	21.7	19.6
N_2	19.8	21.7	22.5	21.9	21.3	20.8	*21.3*	K_2	21.8	18.9	21.7
Mean ..	*20.0*	*20.3*	*21.5*	*20.6*	*20.4*	*20.8*	*20.6*				
PERCENTAGE PURITY : ($\pm$0.296. *Means : $\pm$0.171*)											
N_0	86.9	86.6	86.3	86.7	86.7	86.4	*86.6*	K_0	86.6	87.0	86.2
N_1	86.4	87.5	86.4	86.6	87.0	86.6	*86.7*	K_1	86.5	87.3	86.7
N_2	86.7	86.9	86.3	86.4	86.7	86.7	*86.7*	K_2	86.9	86.8	86.1
Mean ..	*86.7*	*87.0*	*86.3*	*86.6*	*86.8*	*86.6*	*86.6*				

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Ipswich 12

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.595. *Means : $\pm$0.344*)											
N_0	8.35	6.71	7.68	6.90	7.68	8.17	*7.58*	K_0	8.50	7.57	7.38
N_1	9.25	8.99	8.09	8.99	9.17	8.17	*8.78*	K_1	8.20	8.17	8.47
N_2	8.28	8.09	8.20	7.57	7.98	9.02	*8.19*	K_2	9.17	8.06	8.13
Mean ..	*8.62*	*7.93*	*7.99*	*7.82*	*8.28*	*8.45*	*8.18*				
SUGAR PERCENTAGE : ($\pm$0.428. *Means : $\pm$0.247*)											
N_0	17.07	17.03	16.97	17.00	16.97	17.10	*17.02*	K_0	17.00	16.90	16.93
N_1	17.37	16.87	17.03	16.77	17.17	17.33	*17.09*	K_1	17.20	16.70	16.83
N_2	17.00	16.63	16.97	17.07	16.60	16.93	*16.87*	K_2	17.23	16.93	17.20
Mean ..	*17.15*	*16.84*	*16.99*	*16.94*	*16.91*	*17.12*	*16.99*				
TOTAL SUGAR : cwt. per acre											
N_0	28.5	23.0	26.1	23.5	26.1	27.9	*25.9*	K_0	28.9	25.6	25.1
N_1	32.1	30.4	27.7	30.3	31.5	28.4	*30.1*	K_1	28.2	27.4	28.5
N_2	28.2	26.9	27.8	25.9	26.5	30.5	*27.6*	K_2	31.6	27.3	28.0
Mean ..	*29.6*	*26.8*	*27.2*	*26.5*	*28.0*	*29.0*	*27.8*				
PERCENTAGE PURITY : ($\pm$1.26. *Means: $\pm$0.727*)											
N_0	93.3	88.7	93.3	93.9	90.1	91.2	*91.7*	K_0	93.5	92.2	93.1
N_1	92.5	91.7	91.4	92.0	91.4	92.2	*91.9*	K_1	93.6	90.7	90.4
N_2	94.2	91.9	92.2	93.0	93.1	92.2	*92.8*	K_2	92.9	89.4	93.4
Mean ..	*93.4*	*90.8*	*92.3*	*92.9*	*91.6*	*91.9*	*92.1*				

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Kidderminster 13

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.284. *Means* : $\pm$*0.164*)											
N_0	4.62	5.21	5.01	4.58	4.81	5.45	*4.95*	K_0	4.34	4.62	5.25
N_1	4.97	5.37	5.68	4.74	5.49	5.80	*5.34*	K_1	5.21	5.52	5.29
N_2	5.68	5.68	5.60	4.89	5.72	6.35	*5.65*	K_2	5.72	6.12	5.76
Mean ..	*5.09*	*5.42*	*5.43*	*4.74*	*5.34*	*5.87*	*5.31*				
TOPS : tons per acre : ($\pm$0.354. *Means* : $\pm$*0.204*)											
N_0	5.42	5.50	5.01	5.74	4.92	5.28	*5 31*	K_0	5.45	6.50	6.26
N_1	6.03	6.54	6.52	5.84	6.69	6.56	*6.36*	K_1	6.05	6.60	6.40
N_2	6.59	7.76	7.15	6.62	7.44	7.44	*7.17*	K_2	6.54	6.70	6.03
Mean ..	*6.01*	*6.60*	*6.23*	*6.07*	*6.35*	*6.43*	*6.28*				
SUGAR PERCENTAGE : ($\pm$0.143. *Means* : $\pm$*0.0826*)											
N_0	16.17	16.10	16.07	15.90	16.17	16.27	*16.11*	K_0	16.00	15.67	15.77
N_1	15.77	15.63	15.80	15.73	15.67	15.80	*15.73*	K_1	15.90	15.83	15.77
N_2	15.93	15.47	15.90	15.80	15.67	15.83	*15.77*	K_2	15.97	15.70	16.23
Mean ..	*15.96*	*15.73*	*15.92*	*15.81*	*15.83*	*15.97*	*15.87*				
TOTAL SUGAR : cwt. per acre											
N_0	14.9	16.8	16.1	14.5	15.6	17.7	*15.9*	K_0	13.9	14.5	16.5
N_1	15.7	16.7	18.0	14.9	17.2	18.3	*16.8*	K_1	16.6	17.5	16.7
N_2	18.1	17.7	17.8	15.5	18.0	20.1	*17.9*	K_2	18.2	19.2	18.7
Mean ..	*16.2*	*17.1*	*17.3*	*15.0*	*16.9*	*18.7*	*16.9*				
PLANT NUMBER : thousands per acre											
N_0	28.1	28.7	29.3	27.6	29.0	29.6	*28.7*	K_0	28.3	25.4	28.5
N_1	28.9	28.4	29.6	28.4	28.5	30.0	*29.0*	K_1	28.3	27.4	28.8
N_2	28.3	24.8	28.7	26.2	27.1	28.6	*27.3*	K_2	28.7	29.1	30.3
Mean ..	*28.4*	*27.3*	*29.2*	*27.4*	*28.2*	*29.4*	*28.3*				
PERCENTAGE PURITY : ($\pm$0.499. *Means* : $\pm$*0.288*)											
N_0	86.9	86.1	87.1	86.1	87.4	86.7	*86.7*	K_0	86.0	86.2	86.3
N_1	86.4	86.7	86.6	86.5	86.7	86.4	*86.6*	K_1	86.2	86.6	87.1
N_2	85.4	86.0	85.8	85.9	85.8	85.5	*85.7*	K_2	86.6	86.0	86.0
Mean ..	*86.2*	*86.3*	*86.5*	*86.2*	*86.6*	*86.2*	*86.3*				

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King's Lynn 14

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.354. *Means* : $\pm$*0.204*)											
N_0	7.51	7.78	7.41	7.83	7.49	7.38	*7.56*	K_0	8.41	7.83	8.05
N_1	8.33	7.94	7.93	8.02	8.13	8.05	*8.06*	K_1	8.06	7.48	8.17
N_2	8.43	7.99	8.77	8.44	8.09	8.66	*8.40*	K_2	7.80	8.40	7.89
Mean ..	*8.09*	*7.90*	*8.04*	*8.10*	*7.90*	*8.03*	*8.01*				
TOPS : tons per acre ($\pm$0.548. *Means* : $\pm$*0.316*)											
N_0	3.15	3.71	3.02	2.98	3.57	3.34	*3.29*	K_0	4.14	3.08	3.51
N_1	4.05	3.97	3.20	3.34	4.63	3.26	*3.74*	K_1	4.98	4. 24	4.17
N_2	5.05	4.08	5.33	4.42	5.19	4.86	*4.82*	K_2	3.13	4.45	3.88
Mean ..	*4.08*	*3.92*	*3.85*	*3.58*	*4.46*	*3.82*	*3.95*				
SUGAR PERCENTAGE ($\pm$0.584. *Means: $\pm$0.337*)											
N_0	19.73	20.03	20.43	20.47	19.67	20.07	*20.06*	K_0	19.77	18.33	19.50
N_1	19.87	19.87	19.40	19.17	20.10	19.87	*19.71*	K_1	19.73	19.80	18.73
N_2	19.43	18.43	17.90	17.97	18.50	19.30	*18.59*	K_2	19.53	20.20	19.50
Mean ..	*19.68*	*19.44*	*19.24*	*19.20*	*19.42*	*19.74*	*19.45*				
TOTAL SUGAR : cwt. per acre											
N_0	29.6	31.2	30.2	32.0	29.4	29.6	*30.3*	K_0	33.2	28.6	31.3
N_1	33.0	31.7	30.8	30.8	32.7	32.0	*31.8*	K_1	31.7	29.6	30.5
N_2	32.7	29.3	31.4	30.3	29.7	33.4	*31.1*	K_2	30.5	33.9	30.6
Mean ..	*31.8*	*30.7*	*30.8*	*31.0*	*30.6*	*31.7*	*31.1*				
PLANT NUMBER : thousands per acre											
N_0	33.1	33.5	32.0	32.6	33.1	32.9	*32.9*	K_0	32.5	31.5	33.1
N_1	33.8	32.3	31.9	32.9	32.8	32.7	*32.7*	K_1	33.9	33.6	31.9
N_2	33.2	32.5	32.9	31.7	33.6	33.3	*32.9*	K_2	33.7	33.2	31.8
Mean ..	*33.4*	*32.8*	*32.3*	*32.4*	*33.1*	*32.9*	*32.8*				
PERCENTAGE PURITY ($\pm$1.23. *Means* : $\pm$*0.710*)											
N_0	85.4	85.8	86.5	86.0	85.4	86 3	*85.9*	K_0	86.0	84.9	84.6
N_1	86.0	86.9	84.6	85.6	85.9	86.0	*85.8*	K_1	84.8	86.6	85.5
N_2	81.8	85.4	84.5	84.0	85.7	82.1	*83.9*	K_2	82.4	86.5	85.4
Mean ..	*84.4*	*86.0*	*85.2*	*85.2*	*85.6*	*84.8*	*85.2*				

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Newark 15

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.512. *Means* : $\pm$*0.296*)											
N_0	7.79	6.19	7.45	7.37	7.64	6.42	*7.14*	K_0	7.96	7.55	7.62
N_1	7.57	7.52	7.21	7.40	7.08	7.82	*7.43*	K_1	7.71	7.07	6.74
N_2	8.13	7.42	7.15	8.37	6.79	7.53	*7.56*	K_2	7.83	6.51	7.44
Mean ..	*7.83*	*7.04*	*7.27*	*7.71*	*7.17*	*7.26*	*7.38*				
TOPS : tons per acre ($\pm$0.791. *Means* : $\pm$*0.457*)											
N_0	6.76	4.90	6.20	5.83	6.57	5.45	*5.95*	K_0	8.37	8.68	7.94
N_1	7.56	8.06	7.01	7.94	7.01	7.69	*7.55*	K_1	8.68	6.51	7.63
N_2	11.10	9.05	10.73	11.22	9.24	10.42	*10.29*	K_2	8.37	6.82	8.37
Mean ..	*8.47*	*7.34*	*7.98*	*8.33*	*7.61*	*7.85*	*7.93*				
SUGAR PERCENTAGE ($\pm$0.171. *Means* : $\pm$*0.0987*)											
N_0	16.70	16.77	16.80	16.83	16.90	16.53	*16.75*	K_0	16.50	16.53	16.93
N_1	16.67	16.63	16.90	16.70	16.57	16.93	*16.73*	K_1	16.53	16.60	16.40
N_2	16.53	16.37	16.07	16.43	16.07	16.47	*16.32*	K_2	16.87	16.63	16.43
Mean ..	*16.63*	*16.59*	*16.59*	*16.65*	*16.51*	*16.64*	*16.60*				
TOTAL SUGAR : cwt. per acre											
N_0	26.0	20.8	25.0	24.8	25.8	21.3	*24.0*	K_0	26.3	24.9	25.8
N_1	25.2	25.0	24.3	24.7	23.4	26.4	*24.8*	K_1	25.5	23.5	22.1
N_2	26.9	24.2	23.0	27.5	21.9	24.8	*24.7*	K_2	26.4	21.7	24.5
Mean ..	*26.1*	*23.4*	*24.1*	*25.7*	*23.7*	*24.2*	*24.5*				
PLANT NUMBER : thousands per acre											
N_0	29.9	30.4	29.6	29.9	30.5	29.5	*30.0*	K_0	28.6	29.5	29.6
N_1	30.9	28.4	27.8	28.2	28.7	30.1	*29.0*	K_1	32.0	30.8	28.6
N_2	29.0	32.5	30.4	29.6	32.2	30.1	*30.6*	K_2	29.1	31.0	29.6
Mean ..	*29.9*	*30.5*	*29.3*	*29.2*	*30.5*	*29.9*	*29.9*				

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OAKLANDS 16

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.297. *Means:* $\pm$*0.171*)											
N_0	5.39	5.89	5.48	5.09	6.13	5.53	*5.59*	K_0	5.23	5.35	5.88
N_1	6.07	5.69	6.35	5.63	6.34	6.15	*6.04*	K_1	6.14	6.66	6.42
N_2	5.86	6.75	7.03	5.74	6.75	7.15	*6.55*	K_2	5.95	6.32	6.56
Mean ..	*5.77*	*6.11*	*6.29*	*5.49*	*6.41*	*6.28*	*6.06*				
TOPS : tons per acre ($\pm$0.282. *Means:* $\pm$*0.163*)											
N_0	4.86	4.77	4.75	4.89	5.13	4.36	*4.79*	K_0	6.43	6.32	7.08
N_1	6.78	6.45	6.99	6.85	6.83	6.54	*6.74*	K_1	6.80	6.52	6.65
N_2	7.85	7.89	8.55	8.09	8.01	8.20	*8.16*	K_2	6.26	6.27	6.56
Mean ..	*6.50*	*6.37*	*6.76*	*6.61*	*6.66*	*6.37*	*6.54*				
SUGAR PERCENTAGE : ($\pm$0.180. *Means:* $\pm$*0.104*)											
N_0	16.07	16.40	16.67	16.07	16.37	16.70	*16.38*	K_0	15.63	15.77	15.87
N_1	15.83	15.93	15.90	15.73	15.90	16.03	*15.89*	K_1	15.70	16.10	16.30
N_2	15.57	15.80	15.80	15.47	15.83	15.90	*15.73*	K_2	16.17	16.27	16.20
Mean ..	*15.83*	*16.05*	*16.12*	*15.76*	*16.03*	*16.21*	*16.00*				
TOTAL SUGAR : cwt. per acre											
N_0	17.3	19.3	18.3	16.4	20.1	18.5	*18.3*	K_0	16.3	16.9	18.7
N_1	19.2	18.1	20.2	17.7	20.2	19.7	*19.2*	K_1	19.3	21.5	20.9
N_2	18.3	21.3	22.2	17.8	21.4	22.7	*20.6*	K_2	19.2	20.5	21.2
Mean ..	*18.3*	*19.6*	*20.3*	*17.3*	*20.6*	*20.3*	*19.4*				
PLANT NUMBER : thousands per acre											
N_0	24.3	23.2	23.3	23.8	24.2	22.8	*23.6*	K_0	23.3	23.3	22.5
N_1	23.0	23.4	22.5	22.2	23.6	23.2	*23.0*	K_1	24.5	23.9	23.8
N_2	24.3	24.2	24.2	23.1	24.6	24.9	*24.2*	K_2	23.8	23.6	23.5
Mean ..	*23.9*	*23.6*	*23.3*	*23.0*	*24.1*	*23.6*	*23.6*				

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PETERBOROUGH (THOR) 17

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed): tons per acre (±0.693. *Means:* ±*0.400*)											
N_0	11.44	11.67	12.27	12.21	11.97	11.20	*11.79*	K_0	12.95	12.54	11.71
N_1	11.94	12.42	11.01	11.22	12.39	11.76	*11.79*	K_1	12.13	12.56	11.97
N_2	12.08	13.00	12.86	13.76	12.30	11.88	*12.65*	K_2	10.39	11.99	12.47
Mean ..	*11.82*	*12.36*	*12.05*	*12.40*	*12.22*	*11.61*	*12.08*				
TOPS: tons per acre (±1.58. *Means:* ±*0.912*)											
N_0	10.99	13.98	14.38	14.11	13.57	11.67	*13.12*	K_0	15.12	15.47	15.20
N_1	16.34	12.62	15.74	15.88	16.96	11.86	*14.90*	K_1	15.33	15.80	15.33
N_2	14.44	16.75	16.15	15.80	15.94	15.61	*15.78*	K_2	11.32	12.08	15.74
Mean ..	*13.92*	*14.45*	*15.42*	*15.26*	*15.49*	*13.05*	*14.60*				
SUGAR PERCENTAGE: (±0.150. *Means:* ±*0.0866*)											
N_0	16.57	16.60	16.23	16.37	16.50	16.53	*16.47*	K_0	16.47	16.33	16.43
N_1	16.50	16.33	16.57	16.53	16.33	16.53	*16.47*	K_1	16.53	16.43	16.37
N_2	16.50	16.27	16.30	16.33	16.55	16.23	*16.36*	K_2	16.57	16.43	16.30
Mean ..	*16.52*	*16.40*	*16.37*	*16.41*	*16.44*	*16.43*	*16.43*				
TOTAL SUGAR: cwt. per acre											
N_0	37.9	38.7	39.8	39.9	39.5	37.0	*38.8*	K_0	42.6	40.9	38.4
N_1	39.4	40.6	36.5	37.1	40.5	38.9	*38.8*	K_1	40.1	41.3	39.2
N_2	39.9	42.3	41.9	44.9	40.6	38.6	*41.4*	K_2	34.4	39.4	40.6
Mean ..	*39.1*	*40.5*	*39.4*	*40.6*	*40.2*	*38.1*	*39.6*				
PLANT NUMBER: thousands per acre											
N_0	24.7	20.3	22.6	21.6	23.0	23.0	*22.5*	K_0	23.2	24.2	22.6
N_1	23.8	26.0	24.2	24.3	25.9	23.8	*24.7*	K_1	25.0	25.3	23.4
N_2	24.1	25.0	23.3	24.1	24.7	23.6	*24.1*	K_2	24.4	21.8	24.1
Mean ..	*24.2*	*23.8*	*23.4*	*23.3*	*24.6*	*23.4*	*23.8*				
PERCENTAGE PURITY: (±0.398. *Means:* ±*0.230*)											
N_0	82.4	83.1	82.4	82.7	82.4	82.7	*82.6*	K_0	83.0	82.8	82.7
N_1	83.3	83.1	82.5	82.9	82.7	83.3	*83.0*	K_1	82.3	83.0	82.3
N_2	82.6	82.1	81.8	82.9	82.4	81.2	*82.2*	K_2	83.0	82.6	81.7
Mean ..	*82.8*	*82.8*	*82.2*	*82.8*	*82.5*	*82.4*	*82.6*				

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PETERBOROUGH (TALL.) 18

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre ($\pm$1.01. *Means: $\pm$0.583*)										
N_0	12.06	11.21	13.15	11.40	12.25	12.77	*12.14*	K_0	12.13	12.60	13.00
N_1	13.05	13.56	11.83	13.50	13.80	11.14	*12.81*	K_1	13.66	13.39	13.56
N_2	13.54	14.60	13.85	12.83	14.56	14.59	*13.99*	K_2	12.86	13.38	12.27
Mean ..	*12.88*	*13.12*	*12.94*	*12.58*	*13.54*	*12.83*	*12.98*				
	TOPS : tons per acre ($\pm$0.430. *Means: $\pm$0.248*)										
N_0	5.22	4.91	4.87	5.21	4.63	5.16	*5.00*	K_0	6.23	5.61	5.98
N_1	6.26	4.88	5.46	5.36	5.92	5.33	*5.53*	K_1	6.19	5.79	5.28
N_2	6.83	7.26	6.77	7.26	6.71	6.89	*6.95*	K_2	5.89	5.66	5.83
Mean ..	*6.10*	*5.69*	*5.70*	*5.94*	*5.75*	*5.79*	*5.83*				
	SUGAR PERCENTAGE : ($\pm$0.187. *Means: $\pm$0.108*)										
N_0	17.17	17.10	17.57	16.83	17.50	17.53	*17.28*	K_0	16.87	17.00	17.03
N_1	17.10	17.13	17.13	17.10	17.27	17.00	*17.12*	K_1	17.27	17.17	17.13
N_2	16.87	16.87	17.00	16.97	16.80	16.97	*16.91*	K_2	17.03	16.93	17.53
Mean ..	*17.05*	*17.03*	*17.23*	*16.97*	*17.19*	*17.16*	*17.10*				
	TOTAL SUGAR : cwt. per acre										
N_0	41.5	38.3	46.3	38.3	42.9	44.8	*42.0*	K_0	40.9	42.9	44.3
N_1	44.6	46.5	40.4	46.2	47.7	37.7	*43.8*	K_1	47.1	45.9	46.5
N_2	45.7	49.3	47.1	43.6	48.9	49.6	*47.4*	K_2	43.7	45.3	43.0
Mean ..	*43.9*	*44.7*	*44.6*	*42.7*	*46.5*	*44.0*	*44.4*				
	PLANT NUMBER : thousands per acre										
N_0	26.0	26.7	26.1	26.7	25.8	26.3	*26.3*	K_0	27.2	26.7	26.5
N_1	26.6	27.2	27.2	27.4	26.4	27.2	*27.0*	K_1	26.0	26.4	26.8
N_2	27.1	25.8	27.0	26.3	26.9	26.7	*26.6*	K_2	26.5	26.6	27.1
Mean ..	*26.6*	*26.6*	*26.8*	*26.8*	*26.4*	*26.7*	*26.6*				
	PERCENTAGE PURITY : ($\pm$1.16. *Means: $\pm$0.670*)										
N_0	87.6	87.1	90.4	86.3	89.4	89.3	*88.4*	K_0	86.5	87.8	87.7
N_1	87.2	88.8	87.4	88.5	88.2	86.7	*87.8*	K_1	88.0	88.0	87.7
N_2	86.4	86.3	87.2	87.1	86.1	86.7	*86.6*	K_2	86.7	86.4	89.5
Mean ..	*87.1*	*87.4*	*88.3*	*87.3*	*87.9*	*87.5*	*87.6*				

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POPPLETON 19

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.820. *Means : $\pm$0.473*)											
N_0	9.23	8.88	11.44	9.96	10.91	8.67	*9.85*	K_0	10.57	10.15	11.42
N_1	10.95	11.00	11.21	10.88	12.62	9.66	*11.05*	K_1	11.12	10.65	11.82
N_2	11.58	10.75	11.64	11.30	10.06	12.60	*11.32*	K_2	10.07	9.82	11.04
Mean ..	*10.59*	*10.21*	*11.43*	*10.72*	*11.20*	*10.31*	*10.74*				
TOPS : tons per acre ($\pm$1.43. *Means : $\pm$0.826*)											
N_0	4.99	4.46	6.90	5.14	6.88	4.33	*5.45*	K_0	6.24	6.37	7.32
N_1	7.87	7.86	8.02	6.09	10.10	7.56	*7.92*	K_1	8.04	7.82	7.29
N_2	9.31	9.02	7.98	8.70	6.17	11.44	*8.77*	K_2	7.89	7.14	8.30
Mean ..	*7.39*	*7.11*	*7.64*	*6.64*	*7.72*	*7.78*	*7.38*				
SUGAR PERCENTAGE : ($\pm$0.244. *Means : $\pm$0.141*)											
N_0	18.30	18.30	17.50	18.03	18.07	18.00	*18.03*	K_0	17.77	17.50	17.60
N_1	17.23	17.33	17.67	17.67	17.30	17.27	*17.41*	K_1	17.67	17.63	17.90
N_2	17.37	17.20	17.90	17.17	17.83	17.47	*17.49*	K_2	17.47	17.70	17.57
Mean ..	*17.64*	*17.61*	*17.69*	*17.62*	*17.73*	*17.58*	*17.64*				
TOTAL SUGAR : cwt. per acre											
N_0	33.7	32.4	40.0	35.8	39.2	31.1	*35.4*	K_0	37.5	35.4	40.2
N_1	37.7	38.1	39.6	38.5	43.6	33.4	*38.5*	K_1	39.0	37.5	42.2
N_2	40.2	36.7	41.6	38.8	35.9	44.0	*39.6*	K_2	35.1	34.6	38.8
Mean ..	*37.2*	*35.8*	*35.4*	*37.7*	*39.6*	*36.2*	*37.8*				
PLANT NUMBER : thousands per acre											
N_0	24.7	24.8	25.7	27.0	26.0	22.2	*25.1*	K_0	29.6	26.8	29.5
N_1	27.6	26.8	28.5	29.4	29.9	23.6	*27.6*	K_1	27.1	27.1	27.6
N_2	28.1	28.0	28.1	29.5	25.8	28.9	*28.1*	K_2	23.8	25.8	25.2
Mean ..	*26.8*	*26.6*	*27.4*	*28.6*	*27.3*	*24.9*	*26.9*				
PERCENTAGE PURITY : ($\pm$0.421. *Means : $\pm$0.243*)											
N_0	88.0	88.7	88.2	88.3	88.5	88.1	*88.3*	K_0	88.3	87.7	88.4
N_1	88.0	87.9	88.1	88.1	87.6	88.2	*88.0*	K_1	88.1	88.4	87.7
N_2	88.7	87.8	88.0	88.0	88.2	88.3	*88.2*	K_2	88.2	88.2	88.2
Mean ..	*88.2*	*88.1*	*88.1*	*88.1*	*88.1*	*88.2*	*88.2*				

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SELBY 20.

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre (±0.439. *Means : ±0.253*)											
N_0	11.37	10.42	11.52	11.60	11.05	10.66	*11.10*	K_0	12.33	12.18	11.85
N_1	12.26	12.77	12.34	12.69	12.56	12.11	*12.45*	K_1	11.57	12.04	11.87
N_2	11.83	12.72	12.49	12.06	11.86	13.12	*12.35*	K_2	11.56	11.69	12.64
Mean ..	*11.82*	*11.97*	*12.12*	*12.12*	*11.82*	*11.96*	*11.97*				
TOPS : tons per acre (±0.699. *Means : ±0.404*)											
N_0	7.29	6.45	8.27	7.40	7.13	7.48	*7.34*	K_0	9.74	8.76	9.79
N_1	10.19	9.47	8.80	9.68	9.50	9.32	*9.50*	K_1	8.63	9.08	9.84
N_2	9.71	11.25	13.14	11.24	10.92	11.93	*11.36*	K_2	8.82	9.32	10.58
Mean ..	*9.06*	*9.05*	*10.07*	*9.44*	*9.18*	*9.58*	*9.40*				
SUGAR PERCENTAGE : (±0.221. *Means : ±0.128*)											
N_0	18.43	18.97	18.80	18.77	18.70	18.73	*18.73*	K_0	18.37	18.70	18.63
N_1	18.50	18.60	18.73	18.80	18.73	18.30	*18.61*	K_1	18.50	18.30	18.83
N_2	18.23	18.17	18.47	18.13	18.20	18.53	*18.29*	K_2	18.30	18.73	18.53
Mean ..	*18.39*	*18.58*	*18.66*	*18.57*	*18.54*	*18.52*	*18.54*				
TOTAL SUGAR : cwt. per acre											
N_0	41.9	39.5	43.3	43.5	41.3	39.9	*41.6*	K_0	45.3	45.6	44.1
N_1	45.3	47.5	46.3	47.8	47.0	44.3	*46.4*	K_1	42.8	44.0	44.7
N_2	43.2	46.2	46.2	43.7	43.2	48.6	*45.2*	K_2	42.3	43.7	46.9
Mean ..	*43.5*	*44.4*	*45.2*	*45.0*	*43.8*	*44.3*	*44.4*				
PLANT NUMBER : thousands per acre											
N_0	32.1	34.3	32.1	32.5	33.4	32.6	*32.8*	K_0	33.1	35.1	31.9
N_1	34.8	33.8	35.7	34.7	35.1	34.5	*34.8*	K_1	32.1	34.5	35.9
N_2	31.3	34.4	33.8	33.0	34.0	32.6	*33.2*	K_2	33.0	32.9	33.8
Mean ..	*32.7*	*34.2*	*33.9*	*33.4*	*34.2*	*33.2*	*33.6*				
PERCENTAGE PURITY : (±0.420. *Means : ±0.242*)											
N_0	88.5	88.5	88.8	89.0	88.0	88.9	*88.6*	K_0	88.4	89.3	88.5
N_1	88.3	89.3	89.4	89.0	88.6	89.3	*89.0*	K_1	88.3	87.7	89.4
N_2	88.6	88.5	89.0	88.2	88.7	89.1	*88.7*	K_2	88.6	89.3	89.3
Mean ..	*88.4*	*88.8*	*89.1*	*88.7*	*88.5*	*89.1*	*88.8*				

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TUNSTALL 21.

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.308. *Means:* $\pm$*0.178*)											
N_0	4.24	4.47	4.61	4.59	4.35	4.37	*4.44*	K_0	5.34	5.68	5.36
N_1	5.03	5.17	5.15	5.19	4.90	5.27	*5.12*	K_1	5.22	5.61	5.42
N_2	6.55	7.24	6.39	6.60	7.01	6.58	*6.73*	K_2	5.25	5.59	5.37
Mean ..	*5.27*	*5.65*	*5.38*	*5.46*	*5.42*	*5.41*	*5.43*				
TOPS : tons per acre ($\pm$0.558. *Means:* $\pm$*0.322*)											
N_0	3.23	3.30	3.06	3.27	3.15	3.18	*3.20*	K_0	4.91	4.18	5.34
N_1	4.62	4.37	4.93	4.52	4.68	4.73	*4.64*	K_1	5.34	4.73	4.90
N_2	7.06	6.79	6.89	6.65	7.15	6.94	*6.91*	K_2	4.66	5.54	4.64
Mean ..	*4.97*	*4.82*	*4.96*	*4.81*	*4.99*	*4.95*	*4.92*				
SUGAR PERCENTAGE : ($\pm$0.200. *Means:* $\pm$*0.115*)											
N_0	16.93	16.73	16.70	16.83	16.73	16.80	*16.79*	K_0	16.17	16.43	16.07
N_1	16.17	16.80	16.50	16.33	16.23	16.90	*16.49*	K_1	16.17	16.23	16.33
N_2	15.60	15.97	15.63	15.50	15.77	15.93	*15.73*	K_2	16.37	16.83	16.43
Mean ..	*16.23*	*16.50*	*16.28*	*16.22*	*16.24*	*16.54*	*16.34*				
TOTAL SUGAR : cwt. per acre.											
N_0	14.4	15.0	15.4	15.5	14.6	14.7	*14.9*	K_0	17.1	18.6	17.2
N_1	16.3	17.3	17.0	16.9	15.9	17.8	*16.9*	K_1	16.9	18.1	17.6
N_2	20.5	23.2	20.0	20.5	22.1	21.1	*21.2*	K_2	17.1	18.8	17.7
Mean ..	*17.0*	*18.5*	*17.5*	*17.6*	*17.5*	*17.9*	*17.7*				
PLANT NUMBER : thousands per acre											
N_0	57.1	61.3	59.2	59.5	59.8	58.4	*59.2*	K_0	60.3	59.8	59.0
N_1	60.5	59.3	58.9	60.2	60.0	58.4	*59.6*	K_1	57.1	59.6	62.0
N_2	57.2	58.0	60.6	59.5	58.9	57.3	*58.6*	K_2	57.4	59.1	57.6
Mean ..	*58.3*	*59.5*	*59.6*	*59.7*	*59.6*	*58.0*	*59.1*				

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WISSINGTON (Crimp) 22

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
ROOTS (washed) : tons per acre ($\pm$0.430. *Means: $\pm$0.248*)											
N_0	8.36	7.80	8.40	8.13	8.46	7.97	*8.19*	K_0	8.47	8.10	8.95
N_1	8.64	8.54	8.65	8.60	8.60	8.63	*8.61*	K_1	9.19	8.48	8.05
N_2	9.76	8.72	8.67	8.78	8.67	9.69	*9.05*	K_2	9.11	8.48	8.72
Mean ..	*8.92*	*8.35*	*8.57*	*8.51*	*8.57*	*8.77*	*8.62*				
SUGAR PERCENTAGE : ($\pm$0.210. *Means: $\pm$0.121*)											
N_0	18.73	18.47	18.97	18.83	18.57	18.77	*18.72*	K_0	18.37	17.90	18.27
N_1	18.30	18.30	18.53	18.13	18.43	18.57	*18.38*	K_1	18.33	18.13	17.93
N_2	17.97	17.57	17.33	17.57	17.40	17.90	*17.62*	K_2	18.30	18.33	18.63
Mean ..	*18.33*	*18.11*	*18.28*	*18.18*	*18.13*	*18.42*	*18.24*				
TOTAL SUGAR : cwt. per acre											
N_0	31.3	28.8	31.9	30.6	31.4	29.9	*30.6*	K_0	31.1	29.1	32.7
N_1	31.7	31.3	32.0	31.2	31.7	32.1	*31.7*	K_1	33.7	30.7	29.1
N_2	35.1	30.7	30.3	31.0	30.4	34.7	*32.0*	K_2	33.3	31.0	32.4
Mean ..	*32.7*	*30.3*	*31.4*	*30.9*	*31.2*	*32.2*	*31.4*				
PLANT NUMBER : thousands per acre.											
N_0	28.3	28.5	29.0	27.7	28.8	29.3	*28.6*	K_0	27.6	28.5	28.0
N_1	27.4	28.5	28.4	28.1	27.4	28.8	*28.1*	K_1	27.9	27.6	28.4
N_2	28.0	27.7	28.4	28.3	27.7	28.0	*28.0*	K_2	28.1	28.6	29.3
Mean ..	*27.9*	*28.2*	*28.6*	*28.0*	*28.0*	*28.7*	*28.2*				
PERCENTAGE PURITY ($\pm$0.719. *Means: $\pm$0.415*)											
N_0	90.9	90.2	89.8	90.2	90.3	90.4	*90.3*	K_0	89.8	89.6	88.6
N_1	90.8	88.5	90.1	89.1	90.5	89.7	*89.8*	K_1	90.9	89.1	88.8
N_2	88.7	89.3	88.0	88.8	87.9	89.2	*88.7*	K_2	89.7	89.3	90.4
Mean ..	*90.1*	*89.3*	*89.3*	*89.4*	*89.6*	*89.8*	*89.6*				

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WISSINGTON (Wimb.) 23

	P_0	P_1	P_2	K_0	K_1	K_2	*Mean*		P_0	P_1	P_2
	ROOTS (washed) : tons per acre ($\pm$0.872. *Means : $\pm$0.503*)										
N_0	8.73	8.42	7.81	8.96	7.89	8.12	*8.32*	K_0	**7.77**	9.16	9.78
N_1	8.13	8.14	10.63	8.59	9.62	8.70	*8.97*	K_1	9.97	7.77	9.00
N_2	9.27	8.73	9.51	9.17	9.25	9.09	*9.17*	K_2	8.38	8.36	9.17
Mean ..	*8.71*	*8.43*	*9.32*	*8.90*	*8.92*	*8.64*	*8.82*				
	SUGAR PERCENTAGE : ($\pm$0.163. *Means : $\pm$0.0941*)										
N_0	16.57	16.67	16.70	16.57	16.53	16.83	*16.64*	K_0	16.17	16.17	16.27
N_1	16.33	16.17	16.23	15.93	16.27	16.53	*16.24*	K_1	16.37	16.33	16.17
N_2	16.17	16.10	15.97	16.10	16.07	16.07	*16.08*	K_2	16.53	16.43	16.47
Mean ..	*16.36*	*16.31*	*16.30*	*16.20*	*16.29*	*16.48*	*16.32*				
	TOTAL SUGAR : cwt. per acre										
N_0	28.9	28.0	26.0	29.7	26.0	27.3	*27.7*	K_0	25.2	29.8	31.8
N_1	26.5	26.4	34.5	27.5	31.3	28.7	*29.2*	K_1	32.7	25.4	29.2
N_2	30.2	28.1	30.4	29.6	29.9	29.2	*29.6*	K_2	27.7	27.4	30.0
Mean ..	*28.5*	*27.5*	*30.3*	*28.9*	*29.1*	*28.4*	*28.8*				
	PLANT NUMBER : thousands per acre										
N_0	30.1	29.2	29.6	31.4	27.7	29.8	*29.6*	K_0	28.4	32.0	35.7
N_1	28.7	33.4	33.1	32.8	31.6	30.7	*31.7*	K_1	29.4	31.6	30.9
N_2	30.0	32.2	33.5	31.9	32.5	31.3	*31.9*	K_2	31.1	31.2	29.5
Mean ..	*29.6*	*31.6*	*32.0*	*32.0*	*30.6*	*30.6*	*31.1*				
	PERCENTAGE PURITY : ($\pm$0.426. *Means: $\pm$0.246*)										
N_0	91.4	90.7	91.3	91.0	91.3	91.1	*91.1*	K_0	90.9	89.6	91.1
N_1	90.6	89.5	90.7	89.9	90.1	90.8	*90.3*	K_1	90.2	90.1	90.5
N_2	89.4	89.9	90.6	90.7	89.4	89.8	***90.0***	K_2	90.2	**90.4**	91.0
Mean ..	*90.4*	*90.0*	*90.9*	*90.5*	*90.3*	*90.5*	*90.4*				

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RESPONSES TO FERTILISERS

* 5 per cent. significance. ** 1 per cent. significance.

	Station	*Mean Yield*	Linear Response (response to the double dressing) N	P	K	St. error	Curvature (Excess of extra response to second dressing over response to first dressing) N	P	K	St. error
	ROOTS (washed) : tons per acre									
1	Allscott ..	*7.79*	−0.51	+1.09	+0.62	±0.594	+0.11	−0.31	+0.86	±1.03
2	Bardney 1 (Meth.) ..	*9.36*	+0.66**	−0.07	+0.10	±0.167	−0.08	+0.05	+0.14	±0.289
3	Bardney 2 (Horn.) ..	*11.06*	+0.50	−0.66	−0.20	±0.343	−0.06	−1.44*	−0.50	±0.594
4	Brigg 1 (Caistor)	*10.34*	+3.51**	+0.48	+0.07	±0.394	−1.59*	−0.28	−0.63	±0.682
5	Brigg 2 (Scotton)	*9.41*	+2.93**	+0.59	−0.48	±0.373	−0.45	−0.87	−0.76	±0.646
6	Bury	*9.27*	+1.14**	+0.42	+0.04	±0.338	+0.60	−0.24	+0.66	±0.585
7	Cantley ..	*12.77*	+0.84	+0.31	+0.47	±0.425	0.00	−0.15	−0.47	±0.736
8	Colwick 1 (Cast.) ..	*12.44*	+2.06**	−0.59	+0.69	±0.594	−0.12	−1.45	−1.33	±1.03
9	Colwick 2 (Dent.) ..	*9.66*	+0.35	−0.25	−0.20	±0.319	+0.23	−0.37	+0.14	±0.552
10	Ely	*11.75*	+0.30	−0.32	+1.16*	±0.481	−0.78	+0.62	+0.56	±0.833
11	Felstead ..	*9.84*	+1.13	+0.40	+0.42	±0.575	+1.17	−0.24	+0.94	±0.996
12	Ipswich ..	*8.18*	+0.61	−0.63	+0.63	±0.485	−1.79	+0.75	−0.29	±0.841
13	Kidderminster	*5.31*	+0.70**	+0.34	+1.13**	±0.232	−0.08	−0.32	−0.07	±0.402
14	Kings Lynn ..	*8.01*	+0.84*	−0.05	−0.07	±0.289	−0.16	+0.33	+0.33	±0.501
15	Newark ..	*7.38*	+0.42	−0.56	−0.45	±0.418	−0.16	+1.02	+0.63	±0.723
16	Oaklands ..	*6.06*	+0.96**	+0.52	+0.79**	±0.242	+0.06	−0.16	−1.05*	±0.420
17	Peterborough 1 (Thor.) ..	*12.08*	+0.86	+0.23	−0.79	±0.566	+0.86	−0.85	−0.43	±0.980
18	Peterborough 2 (Tall.) ..	*12.98*	+1.85*	+0.06	+0.25	±0.824	+0.51	−0.42	−1.67	±1.43
19	Poppleton ..	*10.74*	+1.47*	+0.84	−0.41	±0.669	−0.93	+1.60	−1.37	±1.16
20	Selby	*11.97*	+1.25**	+0.30	−0.16	±0.359	−1.45*	0.00	+0.44	±0.621
21	Tunstall ..	*5.43*	+2.29**	+0.11	−0.05	±0.252	+0.93	−0.61	+0.03	±0.436
22	Wissington 1 (Crimp.) ..	*8.62*	+0.86*	−0.35	+0.26	±0.351	+0.02	+0.79	+0.14	±0.608
23	Wissington 2 (Wimb.) ..	*8.82*	+0.85	+0.61	−0.26	±0.712	−0.45	+1.17	−0.30	±1.23
	Mean	*9.53*	*+1.12*	*+0.12*	*+0.16*		*−0.16*	*−0.06*	*−0.17*	

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	Station	*Mean*	Linear (response to the double dressing) N	P	K	St. error	Curvature (Excess of extra response to second dressing over response to first dressing) N	P	K	St. error
			SUGAR PERCENTAGE							
1	Allscott ..	*16.00*	−0.35	+0.17	+0.02	±0.257	+0.37	+0.07	−0.08	±0.446
2	Bardney 1 (Meth.) ..	*16.81*	−1.30**	−0.16	+0.65**	±0.115	−0.42*	+0.84**	−0.17	±0.200
3	Bardney 2 (Horn.) ..	*16.59*	−0.70**	+0.07	+0.16	±0.154	−0.30	−0.19	+0.24	±0.268
4	Brigg 1 (Caistor) ..	*17.38*	−0.61**	+0.33*	+0.41*	±0.139	−0.55*	−0.43	−0.35	±0.241
5	Brigg 2 (Scotton) ..	*16.59*	−0.56**	−0.06	−0.09	±0.184	−0.34	−0.18	+0.27	±0.318
6	Bury	*17.20*	−0.71**	+0.45*	+0.04	±0.164	−0.27	+0.51	+0.24	±0.284
7	Cantley ..	*17.38*	−0.68**	−0.48*	+0.16	±0.170	−0.40	+0.16	−0.52	±0.294
8	Colwick 1 (Cast.) ..	*17.45*	−1.09**	+0.01	−0.09	±0.278	+0.05	+0.09	−1.03	±0.482
9	Colwick 2 (Dent) ..	*17.02*	−0.39	−0.24	+0.29	±0.188	−0.03	+0.22	−0.51	±0.326
10	Ely	*14.63*	−0.40	−0.07	+1.34**	±0.409	−1.18	+0.45	−0.64	±0.708
11	Felstead ..	*17.00*	−0.48*	+0.17	+0.28	±0.205	+0.16	−0.47	−0.08	±0.355
12	Ipswich ..	*16.99*	−0.15	−0.16	+0.18	±0.350	−0.29	+0.46	+0.24	±0.606
13	Kidderminster	*15.87*	−0.34*	−0.04	+0.16	±0.117	+0.42	+0.42	+0.12	±0.202
14	Kings Lynn ..	*19.45*	−1.47**	−0.44	+0.54	±0.477	−0.77	+0.04	+0.10	±0.826
15	Newark ..	*16.60*	−0.43**	−0.04	−0.01	±0.139	−0.39	+0.04	+0.27	±0.242
16	Oaklands ..	*16.00*	−0.65**	+0.29	+0.45**	±0.147	+0.33	−0.15	−0.09	±0.255
17	Peterborough 1 (Thor.) ..	*16.43*	−0.11	−0.15	+0.02	±0.123	−0.11	+0.09	−0.04	±0.212
18	Peterborough 2 (Tall.) ..	*17.10*	−0.37*	+0.18	+0.19	±0.152	−0.05	+0.22	−0.25	±0.264
19	Poppleton ..	*17.64*	−0.54*	+0.05	−0.04	±0.199	+0.70	+0.11	−0.26	±0.345
20	Selby	*18.54*	−0.44*	+0.27	−0.05	±0.180	−0.20	−0.11	+0.01	±0.313
21	Tunstall ..	*16.34*	−1.06**	+0.05	+0.32	±0.163	−0.46	−0.49	+0.28	±0.282
22	Wissington 1 (Crimp.) ..	*18.24*	−1.10**	−0.05	+0.24	±0.171	−0.42	+0.39	+0.34	±0.297
23	Wissington 2 (Wimb.) ..	*16.32*	−0.56**	−0.06	+0.28	±0.133	+0.24	+0.04	+0.10	±0.230
	Mean	*16.94*	*−0.63*	*0.00*	*+0.24*		*−0.17*	*+0.09*	*−0.08*	

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	Station	*Mean Yield*	Linear Response (response to the double dressing)			Curvature (Excess of extra response to second dressing over response to first dressing)		
			N	P	K	N	P	K
	TOTAL SUGAR : cwt. per acre							
1	Allscott	*25.0*	−2.2	+3.7	+2.0	+1.0	−1.1	+2.6
2	Bardney 1 (Meth.) ..	*31.4*	−0.2	−0.4	+1.5	−1.2	+6.8	+0.1
3	Bardney 2 (Horn.) ..	*36.7*	+0.2	−2.1	−0.2	−1.0	−5.1	−1.0
4	Brigg (Caistor) ..	*35.9*	+11.0	+2.3	+1.0	−7.0	−1.9	−2.8
5	Brigg (Scotton) ..	*31.2*	+8.6	+1.7	−1.7	−2.4	−3.3	−1.9
6	Bury	*31.8*	+2.6	+2.3	+0.2	+1.6	+0.1	+2.8
7	Cantley	*44.4*	+1.2	−0.1	+1.9	−1.0	−0.1	−3.1
8	Colwick 1 (Cast.) ..	*43.4*	+4.5	−2.1	+2.2	−0.7	−5.1	−7.2
9	Colwick 2 (Dent.) ..	*32.8*	+0.5	−1.3	−0.1	+0.7	−0.7	−0.5
10	Ely	*34.4*	0.0	−1.0	+6.5	−5.0	+2.8	+0.3
11	Felstead	*33.4*	+2.8	+1.6	+1.9	+4.0	−1.6	+3.1
12	Ipswich	*27.8*	+1.7	−2.4	+2.5	−6.7	+3.2	−0.5
13	Kidderminster ..	*16.9*	+2.0	+1.1	+3.7	+0.2	−0.7	−0.1
14	Kings Lynn	*31.1*	+0.8	−1.0	+0.7	−2.2	+1.2	+1.5
15	Newark	*24.5*	+0.7	−2.0	−1.5	−0.9	+3.4	+2.5
16	Oaklands	*19.4*	+2.3	+2.0	+3.0	+0.5	−0.6	−3.6
17	Peterborough 1 (Thor.)	*39.6*	+2.6	+0.3	−2.5	+2.6	−2.5	−1.7
18	Peterborough 2 (Tall.)	*44.4*	+5.4	+0.7	+1.3	+1.8	−0.9	−6.3
19	Poppleton	*37.8*	+4.2	+3.2	−1.5	−2.0	+6.0	−5.3
20	Selby	*44.4*	+3.6	+1.7	−0.7	−6.0	−0.1	+1.7
21	Tunstall	*17.7*	+6.3	+0.5	+0.3	+2.3	−2.5	+0.5
22	Wissington 1 (Crimp.)	*31.4*	+1.4	−1.3	+1.3	−0.8	+3.5	+0.7
23	Wissington 2 (Wimb.)	*28.8*	+1.9	+1.8	−0.5	−1.1	+3.8	−0.9
	Mean	*32.4*	*+2.7*	*+0.4*	*+0.9*	*−1.0*	*+0.2*	*−0.8*

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	Station	*Mean*	Linear Response (response to the double dressing)			Curvature (Excess of extra response to second dressing over response to first dressing)		
			N	P	K	N	P	K
	PLANT NUMBER : thousands per acre							
1	Allscott	*30.0*	−2.8	+2.4	+2.0	−5.6	+1.6	+1.8
2	Bardney 1 (Meth.) ..	*27.7*	−0.4	−0.4	−0.3	+1.0	−0.8	+0.1
3	Bardney 2 (Horn.) ..	*25.0*	−0.6	−1.3	+0.1	−2.8	−1.9	−0.1
4	Brigg 1 (Caistor) ..	*25.4*	+2.8	0.0	+0.1	−0.6	+0.6	−1.9
5	Brigg 2 (Scotton) ..	*33.7*	+2.4	−1.1	0.0	−0.2	−1.7	−1.4
6	Bury	*26.1*	+2.5	−0.8	+0.7	−0.3	+1.2	+1.7
7	Cantley	*31.6*	+0.9	−3.3	+0.2	+6.5	−0.7	+1.8
8	Colwick 1 (Cast.) ..	*33.2*	−0.7	−0.6	+0.6	−1.3	+0.4	+0.2
9	Colwick 2 (Dent.) ..	*25.8*	−0.2	−0.6	0.0	−0.6	−0.2	−1.2
10	Ely	*31.2*	−5.2	−0.6	+1.0	0.0	−5.6	−0.8
11	Felstead	*20.6*	+1.3	+1.5	+0.2	+0.5	+0.9	+0.6
13	Kidderminster ..	*28.3*	−1.4	+0.8	+2.0	−2.0	+3.0	+0.4
14	Kings Lynn	*32.8*	0.0	−1.1	+0.5	+0.4	+0.1	−0.9
15	Newark	*29.9*	+0.6	−0.6	+0.7	+2.6	−1.8	−1.9
16	Oaklands	*23.6*	+0.6	−0.6	+0.6	+1.8	0.0	−1.6
17	Peterborough 1 (Thor.)	*23.8*	+1.6	−0.8	+0.1	−2.8	0.0	−2.5
18	Peterborough 2 (Tall.)	*26.6*	+0.3	+0.2	−0.1	−1.1	+0.2	+0.7
19	Poppleton	*26.9*	+3.0	+0.6	−3.7	−2.0	+1.0	−1.1
20	Selby	*33.6*	+0.4	+1.2	−0.2	−3.6	−1.8	−1.8
21	Tunstall	*59.1*	−0.6	+1.3	−1.7	−1.4	−1.1	−1.5
22	Wissington 1 (Crimp.)	*28.2*	−0.6	+0.7	+0.7	+0.4	+0.1	+0.7
23	Wissington 2 (Wimb.)	*31.1*	+2.3	+2.4	−1.4	−1.9	−1.6	+1.4
	Mean	*29.7*	*+0.3*	*0.0*	*+0.1*	*−0.6*	*−0.4*	*−0.3*

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	Station	*Mean Yield*	Linear response (response to the double dressing) N	P	K	St. error	Curvature (Excess of extra response to second dressing over response to first dressing) N	P	K	St. error
		TOPS : tons per acre								
1	Allscott ..	*7.70*	+0.78	+1.20	+0.59	±0.598	—0.30	+0.24	−0.77	±1.04
2	Bardney 1 (Meth.) ..	*7.38*	+3.12**	+0.34	−0.49	±0.238	+0.64	−1.10	+0.15	±0.413
3	Bardney 2 (Horn.) ..	*9.52*	+3.05**	−0.35	−0.05	±0.500	+0.33	+0.55	−0.51	±0.865
4	Brigg 1 (Caistor) ..	*6.95*	+4.92**	−0.48	−0.40	±0.322	+0.70	+0.60	+0.14	±0.558
5	Brigg 2 (Scotton)	*7.54*	+4.72**	+0.11	−0.16	±0.254	+0.14	−0.67	−1.00*	±0.440
6	Bury ..	*7.26*	+2.50**	−0.15	+0.41	±0.305	−0.40	−0.23	−0.43	±0.529
7	Cantley ..	*9.13*	+2.71**	+0.12	−0.53	±0.424	+1.37	−0.18	−0.67	±0.733
8	Colwick 1 (Cast.) ..	*8.08*	+4.03**	−0.85	+1.13*	±0.394	−0.07	−0.37	−0.23	±0.682
9	Colwick 2 (Dent.) ..	*8.33*	+1.75**	+0.68	+0.36	±0.381	−0.01	+0.18	−0.72	±0.659
10	Ely ..	*20.41*	−3.60	0.00	+0.85	±2.32	−3.78	−5.26	+5.31	±4.02
11	Felstead ..	*3.53*	+0.53	+0.72	−0.99	±0.811	+2.07	−0.20	+0.29	±1.40
13	Kidderminster	*6.28*	+1.86**	+0.22	+0.36	±0.289	−0.24	−0.96	−0.20	±0.501
14	Kings' Lynn..	*3.95*	+1.53**	−0.23	+0.24	±0.448	+0.63	+0.09	−1.52	±0.776
15	Newark ..	*7.93*	+4.34**	−0.49	−0.48	±0.646	+1.14	+1.77	+0.96	±1.12
16	Oaklands ..	*6.54*	+3.31**	+0.26	−0.24	±0.230	−0.59	+0.52	−0.34	±0.398
17	Peterborough 1 (Thor.) ..	*14.60*	+2.66	+1.50	−2.21	±1.29	−0.90	+0.44	−2.67	±2.23
18	Peterborough 2 (Tall.) ..	*5.83*	+1.95**	−0.40	−0.15	±0.351	+0.89	+0.42	+0.23	±0.608
19	Poppleton ..	*7.38*	+3.32*	+0.25	+1.14	±1.16	−1.62	+0.81	−1.02	±2.02
20	Selby ..	*9.40*	+4.02**	+1.01	+0.14	±0.570	−0.30	+1.03	+0.66	±0.988
21	Tunstall ..	*4.92*	+3.71**	−0.01	+0.14	±0.456	+0.83	+0.29	−0.22	±0.789
	Mean ..	*8.13*	*+2.56*	*+0.17*	*−0.02*		*+0.03*	*−0.10*	*−0.13*	

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	Station	*Mean*	Linear response (response to the double dressing) N	P	K	St. error	Curvature (Excess of extra response to second dressing over response to first dressing) N	P	K	St. error
	PERCENTAGE PURITY									
1	Allscott ..	*87.1*	−1.6	+0.2	+0.2	±0.803	−0.8	−0.2	+0.6	±1.39
2	Bardney 1 (Meth.) ..	*87.1*	−1.0	−0.5	−0.2	±0.550	−0.6	+0.5	0.0	±0.953
3	Bardney 2 (Horn.) ..	*86.6*	+0.2	−0.2	+0.6	±0.453	+0.4	−1.4	+1.0	±0.785
4	Brigg 1 (Caistor) ..	*89.5*	−0.8**	+0.5*	+0.5*	±0.212	−0.6	−0.5	+0.1	±0.367
5	Brigg 2 (Scotton)	*87.0*	−1.2*	−0.1	+0.6	±0.414	−1.2	+0.5	+0.6	±0.717
6	Bury ..	*90.4*	−1.4**	+0.2	−0.3	±0.346	−0.2	−0.2	+0.1	±0.599
7	Cantley ..	*93.3*	−0.9	0.0	+2.5	±1.22	−1.5	+2.2	+0.3	±2.11
8	Colwick 1 (Cast.) ..	*87.6*	0.0	+0.6	+0.5	±0.552	−0.6	−0.6	+0.3	±0.956
9	Colwick 2 (Dent.) ..	*86.2*	+0.1	+0.3	+0.3	±0.252	−0.9*	−0.5	+0.1	±0.436
10	Ely ..	*85.7*	−0.1	−0.4	+0.4	±0.621	−0.1	+0.2	0.0	±1.08
11	Felstead ..	*86.6*	+0.1	−0.4	0.0	±0.241	−0.1	−1.0*	−0.4	±0.418
12	Ipswich ..	*92.1*	+1.1	−1.1	−1.0	±1.03	+0.7	+4.1*	+1.6	±1.78
13	Kidderminster	*86.3*	−1.0*	+0.3	0.0	±0.407	−0.8	+0.1	−0.8	±0.706
14	King's Lynn..	*85.2*	−2.0	+0.8	−0.4	±1.00	−1.8	−2.4	−1.2	±1.73
17	Peterborough 1 (Thor.) ..	*82.6*	−0.4	−0.6	−0.4	±0.325	−1.2	−0.6	+0.2	±0.562
18	Peterborough 2 (Tall.) ..	*87.6*	−1.8	+1.2	+0.2	±0.946	−0.6	+0.6	−1.0	±1.64
19	Poppleton ..	*88.2*	−0.1	−0.1	+0.1	±0.344	+0.5	+0.1	+0.1	±0.596
20	Selby ..	*88.8*	+0.1	+0.7	+0.4	±0.343	−0.7	−0.1	+0.8	±0.593
22	Wissington 1 (Crimp.) ..	*89.6*	−1.6*	−0.8	+0.4	±0.587	−0.6	+0.8	0.0	±1.02
23	Wissington 2 (Wimb.) ..	*90.4*	−1.1**	+0.5	0.0	±0.348	+0.5	+1.3	+0.4	±0.602
	Mean ..	*87.9*	*−0.7*	*+0.1*	*+0.2*		*−0.5*	*+0.1*	*+0.1*	

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Interactions.

	Station	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K	St. error	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K	St. error
		ROOTS (washed) : tons per acre				SUGAR PERCENTAGE			
1	Allscott	+0.38	−0.28	−0.62	±0.727	−0.34	−0.05	+0.45	±0.315
2	Bardney 1 (Meth.) ..	−0.41	+0.46*	−0.04	±0.204	−0.08	+0.10	−0.12	±0.141
3	Bardney 2 (Horn.) ..	+1.04*	−1.12*	−0.28	±0.420	−0.42*	−0.02	0.00	±0.189
4	Brigg 1 (Caistor) ..	+0.24	+0.38	−0.25	±0.483	+0.15	−0.08	+0.24	±0.170
5	Brigg 2 (Scotton) ..	−0.21	−0.14	−0.52	±0.457	−0.40	+0.22	−0.04	±0.225
6	Bury	−0.04	0.00	+0.35	±0.414	+0.12	+0.26	0.00	±0.201
7	Cantley	−0.43	+0.78	+0.74	±0.521	−0.10	−0.10	+0.08	±0.208
8	Colwick 1 (Cast.) ..	−0.04	+0.89	−1.13	±0.727	−0.17	+0.18	+0.20	±0.341
9	Colwick 2 (Dent.) ..	+0.16	+0.30	+0.10	±0.390	−0.12	+0.13	−0.26	±0.231
10	Ely	+0.06	−0.06	−0.58	±0.589	−0.63	+0.40	+0.94	±0.500
11	Felstead	+1.26	−0.24	−1.84*	±0.704	+0.50	−0.10	−0.50	±0.251
12	Ipswich	+0.30	+0.09	+0.04	±0.595	+0.04	−0.12	+0.02	±0.428
13	Kidderminster ..	−0.24	+0.30	−0.44	±0.284	+0.04	−0.17	+0.24	±0.143
14	Kings Lynn	+0.22	+0.34	+0.22	±0.354	−1.12	+0.86	+0.12	±0.584
15	Newark	−0.32	+0.06	−0.02	±0.512	−0.28	+0.17	−0.44*	±0.171
16	Oaklands	+0.54	+0.48	−0.02	±0.297	−0.18	−0.10	−0.10	±0.180
17	Peterborough 1 (Thor.)	−0.02	−0.44	+1.66*	±0.693	+0.07	−0.13	−0.12	±0.150
18	Peterborough 2 (Tall.)	−0.39	+0.20	−0.73	±1.01	−0.14	−0.35	+0.17	±0.187
19	Poppleton	−1.08	+1.30	+0.06	±0.820	+0.66*	+0.16	+0.14	±0.244
20	Selby	+0.26	+1.00*	+0.78	±0.439	−0.06	+0.22	−0.02	±0.221
21	Tunstall	−0.26	+0.10	+0.50	±0.308	+0.13	+0.23	+0.08	±0.200
22	Wissington 1 (Crimp.)	−0.56	+0.54	−0.44	±0.430	−0.44*	+0.20	+0.22	±0.210
23	Wissington 2 (Wimb.)	+0.58	+0.38	−0.61	±0.872	−0.16	−0.14	−0.08	±0.163
	Mean	*+0.04*	*+0.23*	*−0.13*		*−0.13*	*+0.08*	*+0.05*	

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	Station	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K
		TOTAL SUGAR : cwt. per acre			PLANT NUMBER: thousands per acre		
1	Allscott	+0.6	−1.0	−1.1	+0.4	+2.0	+4.9
2	Bardney 1 (Meth.) ..	−1.6	+1.6	−0.4	+0.8	0.0	−0.4
3	Bardney 2 (Horn.) ..	+2.4	−3.7	−1.0	+2.2	−2.2	−0.8
4	Brigg 1 (Caistor)	+1.3	+1.2	−0.2	+0.1	−0.2	−0.7
5	Brigg 2 (Scotton)	−1.4	0.0	−1.8	+1.8	+0.6	−0.8
6	Bury	+0.2	+0.5	+1.2	−0.8	+1.0	+0.3
7	Cantley	−1.9	+2.4	+2.8	+0.2	−0.5	−0.2
8	Colwick 1 (Cast.)	−0.4	+3.6	−3.6	−0.5	+0.2	+0.5
9	Colwick 2 (Dent.) ..	+0.3	+1.3	−0.2	+1.1	+0.2	−0.3
10	Ely	−1.1	+0.6	+0.4	−1.4	−3.0	−2.0
11	Felstead	+5.3	−1.0	−7.2	+1.4	−1.0	−2.6
12	Ipswich	+1.0	+0.1	+0.1	—	—	—
13	Kidderminster	−0.8	+0.7	−1.0	−0.4	+0.2	+0.7
14	Kings Lynn	−1.0	+2.8	+1.0	+0.4	+0.6	−1.2
15	Newark	−1.4	+0.4	−0.7	+0.8	+0.4	−0.2
16	Oaklands	+1.4	+1.4	−0.2	+0.4	+1.4	+0.2
17	Peterborough 1 (Thor.) ..	0.0	−1.7	+5.2	+0.6	−1.0	+0.2
18	Peterborough 2 (Tall.) ..	−1.7	−0.2	−2.0	−0.1	+0.4	+0.6
19	Poppleton	−2.4	+5.0	+0.5	−0.5	+2.1	+0.8
20	Selby	+0.8	+4.2	+2.9	+1.2	−0.2	+1.0
21	Tunstall	−0.8	+0.7	+0.2	+0.6	−0.6	+0.8
22	Wissington 1 (Crimp.) ..	−2.7	+2.2	−1.2	−0.2	−1.0	+0.4
23	Wissington 2 (Wimb.) ..	+1.6	+1.0	−2.2	+2.0	+0.5	−4.4
	Mean	*−0.1*	*+1.0*	*−0.4*	*+0.5*	*0.0*	*−0.2*

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	Station	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K	St. error	Interaction of linear responses (one half of the extra response to one fertiliser through the addition of a second) N×P	N×K	P×K	St. error
		TOPS : tons per acre				PERCENTAGE PURITY			
1	Allscott	+0.56	+0.25	+0.08	±0.733	+0.4	+0.5	+0.4	±0.984
2	Bardney 1 (Meth.) ..	−0.03	−0.34	−0.40	±0.292	−1.0	−0.1	0.0	±0.674
3	Bardney 2 (Horn.) ..	+0.65	−0.44	+1.24	±0.612	−0.3	+0.4	−0.6	±0.555
4	Brigg 1 (Caistor) ..	−0.50	+0.14	−0.95*	±0.394	−0.4	−0.2	0.0	±0.259
5	Brigg 2 (Scotton) ..	−0.16	−0.69*	−0.06	±0.311	0.0	+0.8	+0.1	±0.507
6	Bury	−0.32	+0.24	−0.34	±0.374	0.0	+0.4	−0.6	±0.424
7	Cantley	+0.82	+0.30	+0.08	±0.518	−0.2	+0.2	−0.5	±1.49
8	Colwick 1 (Cast.) ..	−0.92	+0.39	−0.10	±0.482	+0.8	+0.2	−0.3	±0.676
9	Colwick 2 (Dent.)	+0.78	+0.50	−0.02	±0.466	+0.7*	−0.6	−0.5	±0.308
10	Ely	−0.72	+2.11	+1.54	±2.85	−1.0	+0.6	+2.2*	±0.760
11	Felstead	−0.75	0.00	−0.83	±0.993	+0.1	+0.3	−0.2	±0.296
12	Ipswich	—	—	—	—	−1.0	+1.0	+0.4	±1.26
13	Kidderminster ..	+0.48	+0.64	−0.66	±0.354	+0.1	−0.5	−0.4	±0.499
14	King's Lynn	+0.20	+0.04	+0.69	±0.548	+0.8	−1.1	+2.2	±1.23
15	Newark	+0.10	−0.21	+0.22	±0.791	—	—	—	—
16	Oaklands	+0.40	+0.32	−0.18	±0.282	—	—	—	—
17	Peterborough 1 (Thor.)	−0.84	+1.12	+2.17	±1.58	−0.4	−0.8	−0.5	±0.398
18	Peterborough 2 (Tall.)	+0.14	−0.16	+0.10	±0.430	−1.0	−1.7	+0.8	±1.16
19	Poppleton	−1.62	+1.78	−0.34	±1.43	−0.4	+0.2	0.0	±0.421
20	Selby	+1.22	+0.30	+0.86	±0.699	0.0	+0.5	+0.3	±0.420
21	Tunstall	0.00	+0.19	−0.22	±0.558	—	—	—	—
22	Wissington 1 (Crimp.)	—	—	—	—	+0.2	+0.1	+1.0	±0.719
23	Wissington 2 (Wimb.)	—	—	—	—	+0.6	−0.5	+0.3	±0.426
	Mean	*−0.03*	*+0.32*	*+0.14*		*−0.1*	*0.0*	*+0.2*	

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Conclusions

Effects of sulphate of ammonia

Sulphate of ammonia produced significant increases in the yield of roots at thirteen of the twenty-three centres. Of the remaining ten centres, all except Allscott showed positive responses and the average increase at these centres was significant.

Sixteen of the twenty centres where tops were weighed showed significant increases. The remaining four were centres where the response in roots was not significant. At Ely, where the average yield of tops was 20 tons per acre, sulphate of ammonia depressed the yield of tops, though not significantly.

Sugar percentage was decreased at all centres, the decreases being significant at eighteen centres. The remaining five centres showed no significant response in roots. There was, however, no correlation between the actual sizes of the decrease in sugar percentage and of the increase in roots.

Percentage purity was significantly decreased at six of the twenty centres where it was measured. Of the remaining centres eight showed a negligible effect, five showed decreases of 1 per cent. or over and one (Ipswich) an increase of 1·1 per cent, which was within its standard error.

All the above effects were significantly different for the different centres, and except for percentage purity, remained significantly different when only those centres with a clear response were included.

In roots the additional response to the second dressing was significantly less than the response to the first dressing at two of the centres which showed a clear response in roots. There was no indication of any falling-off in response at the higher level of application at the other centres with a clear response in roots, or in the tops. The decrease in sugar percentage was significantly greater at the higher level of application than at the lower, and there are indications of the same effect in percentage purity.

Effects of superphosphate

There were no significant responses in roots or tops. Two centres showed significant increases in sugar percentage and one a significant decrease, but there was no apparent effect at any other centre. One centre gave a significant increase in percentage purity.

There was no general indication of any curvature of response, though a few individual curvatures were significant.

Effects of muriate of potash

The only significant average response was that in sugar percentage, which was significantly different at the different centres. Four centres showed a significant response. Two of these also showed a significant response in roots, but there was in general no correlation between the effect on roots and that on sugar percentage.

At the four centres with a significant response the additional response to the double dressing was less than that to the single dressing, but the differences were small and the average was not significant.

Interactions

The only significant average interaction between sulphate of ammonia and superhposphate was a negative one in sugar percentage (i.e., sulphate of ammonia decreased sugar percentage more with the double dressing of superphosphate than with the zero dressing). This was significantly different at the different centres, being significantly negative at two centres and significantly positive at one centre.

The average interaction in roots between sulphate of ammonia and muriate of potash was positive and just significant at the 5 per cent. level. One centre gave a significant negative interaction, but there the responses to sulphate of ammonia and muriate of potash were not significant.

There were no significant average interactions between potash and phosphate.

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