

Site reference: 01

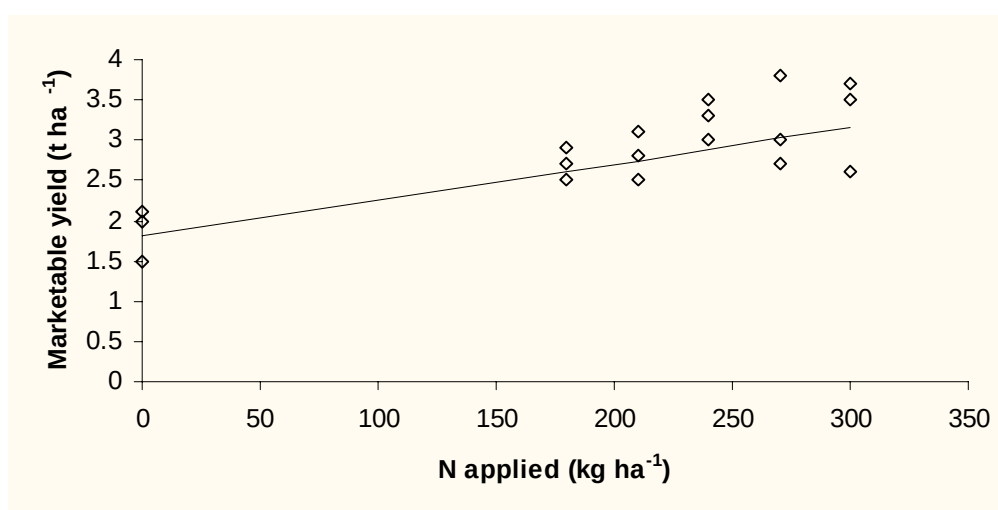
Year: 1998

County:	East Yorkshire	Soil series:	Burlingham
Grid reference:	TA 025562	Topsoil texture:	Sandy clay loam
		pH:	6.1
Previous crop:	Winter barley	Available P:	11 mg/l (Index 1)
Current crop:	Winter oilseed rape	Available K:	119 mg/l (Index 1)
	cv. Apex	Total N:	0.12 %
Sowing date:	11/09/97		
Harvest date:	24/07/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate *	Marketable yield	Total dry weight yield	N uptake	N returned in crop residues	Soil mineral N after harvest		
					0-30 cm	30-60 cm	60-90 cm
kg N ha ⁻¹	t ha ⁻¹	t ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹
0	2.1	4.0	76.3	5.3	67.1	23.3	17.5
180	2.7	5.5	108.4	24.4	91.3		
210	3.1	5.7	113.5	27.5	103.4		
240	3.1	5.3	117.9	21.1	119.7		
270	3.4	5.8	114.3	19.8	108.0		
300	3.1	5.9	130.3	23.8	183.9	33.3	16.4
Farm	3.1				74.9	31.7	12.1

* Basal application of 10 kgN/ha applied to all plots and farm area 7/8/97.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No optimum could be fitted.

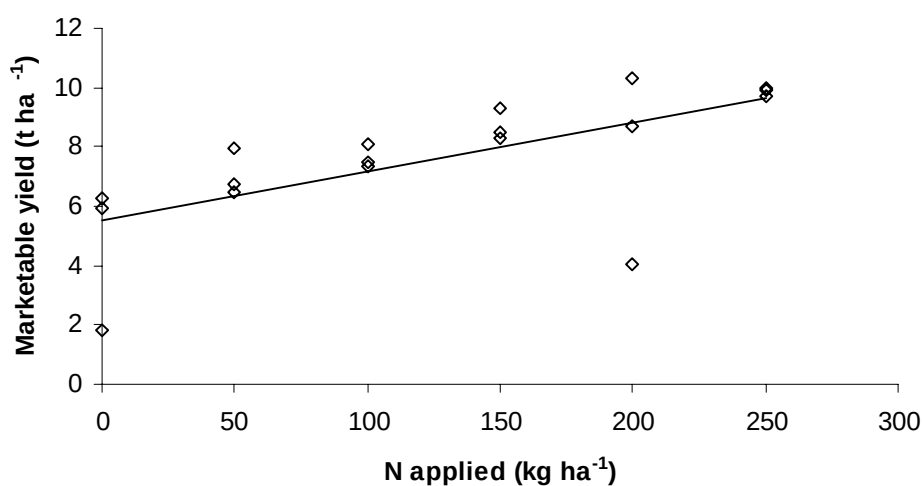
Site reference: 01

Year: 1999

County:	East Yorkshire	Soil series:	Burlingham
Grid reference:	TA 025562	Topsoil texture:	Sandy clay loam
		pH:	6.1
Previous crop:	Winter oilseed rape	Available P:	11 mg/l (Index 1)
Current crop:	Winter wheat	Available K:	119 mg/l (Index 1)
	cv. Madrigal	Total N:	0.12 %
Sowing date:	15/09/98		
Harvest date:	22/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.7	9.2	68.6	20.6	51.6	25.2	13.9
50	7.0	11.6	111.7	29.0	43.9		
100	7.6	12.7	132.1	33.7	43.5		
150	8.7	13.5	153.5	34.9	42.1		
200	7.7	15.1	195.0	67.6	47.7		
250	9.9	16.1	243.9	57.7	60.0	25.0	12.0
Farm	11.8		217.4	41.9	35.6	13.7	11.5

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No optimum could be fitted.

Site reference: 02

Year: 1998

County: North Yorkshire
Grid reference: SE 373739

Soil series: Escrick
Topsoil texture: Sandy clay loam
pH: 6.7

Previous crop: Winter wheat
Current crop: Winter barley
cv. Regina

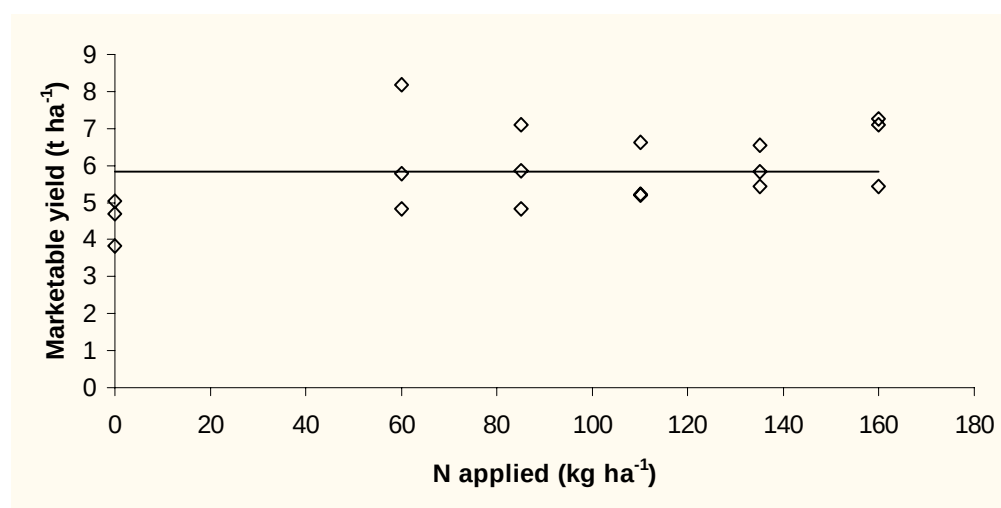
Available P: 87 mg/l (Index 5)
Available K: 249 mg/l (Index 3)
Total N: 0.06 %

Sowing date: 21/09/97
Harvest date: 01/08/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate *	Marketable yield	Total dry weight yield	N uptake	N returned in crop residues	Soil mineral N after harvest		
					0-30 cm	30-60 cm	60-90 cm
kg N ha ⁻¹	t ha ⁻¹	t ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹
0	4.5	8.7	82.4	3.7	53.6	31.2	21.3
60	5.9	9.9	114.9	4.0	86.9		
85	5.9	11.7	162.6	7.4	95.4		
110	5.7	11.4	171.5	8.3	77.1		
135	5.9	10.2	172.4	6.2	114.0		
160	6.6	12.1	207.7	8.8	116.5	33.0	26.9
Farm					96.0	37.5	19.1

* Basal application of 10 kgN/ha applied to all plots and farm area 14/9/97.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N application.

Site reference: 02

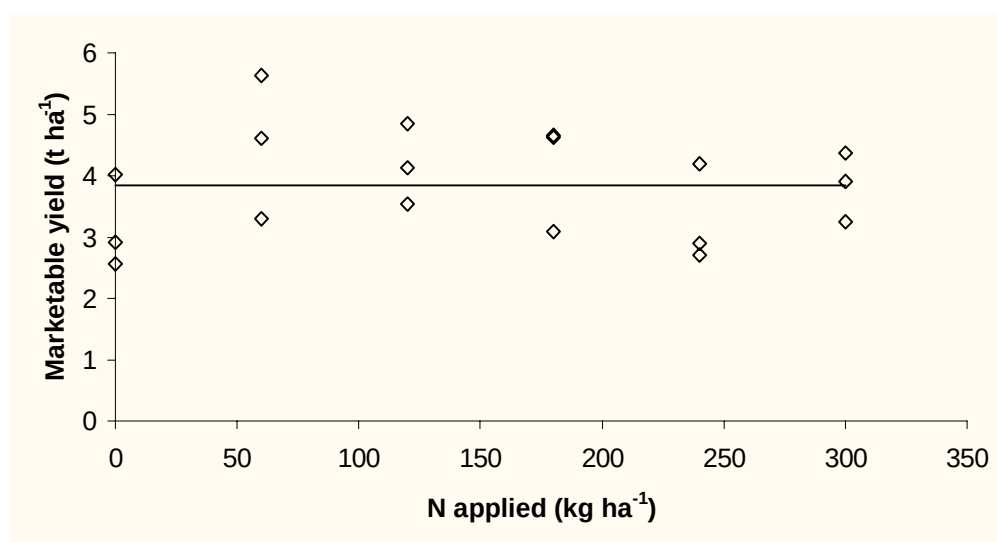
Year: 1999

County:	North Yorkshire	Soil series:	Escrick
Grid reference:	SE 373739	Topsoil texture:	Sandy clay loam
		pH:	6.7
Previous crop:	Winter barley	Available P:	87 mg/l (Index 5)
Current crop:	Winter oilseed rape	Available K:	249 mg/l (Index 3)
	cv. Pronto	Total N:	0.06 %
Sowing date:	27/08/98		
Harvest date:	31/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate *	Marketable yield	Total dry weight yield	N uptake	N returned in crop residues	Soil mineral N after harvest		
					0-30 cm	30-60 cm	60-90 cm
kg N ha ⁻¹	t ha ⁻¹	t ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹
0	3.2	8.6	124.4	37.3	65.6	14.5	14.8
60	4.5	10.6	181.3	50.9	56.5		
120	4.1	10.2	191.6	70.8	63.1		
180	4.1	10.9	199.7	78.2	89.3		
240	3.3	10.4	183.3	90.4	145.6		
300	3.9	11.0	211.5	88.7	147.2	50.6	37.0
Farm	4.8		261.7		5.5	12.4	13.0

* Basal application of 45 kgN/ha applied 13/9/98 to all plots and farm area.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N

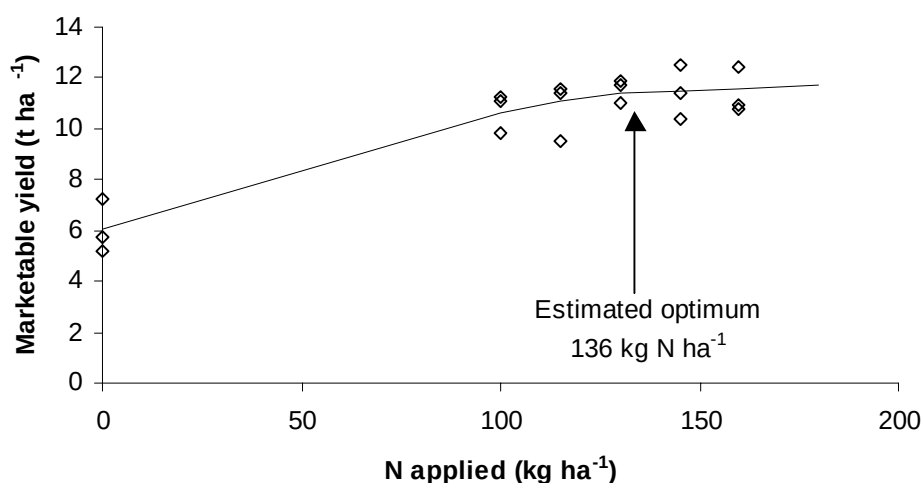
Site reference: 03a

Year: 1998

County:	Kent	Soil series:	Hamble
Grid reference:	TR 317525	Topsoil texture:	Silt loam
		pH:	6.9
Previous crop:	Winter oilseed rape	Available P:	65 mg/l (Index 4)
Current crop:	Winter wheat	Available K:	180 mg/l (Index 2)
	cv. Consort	Total N:	0.07 %
Sowing date:	18/09/97		
Harvest date:	10/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	6.1	8.5	73.3	9.6	27.8	7.9	7.0
100	10.7	14.8	167.5	22.8	18.8		
115	10.8	15.8	189.3	29.6	24.6		
130	11.5	15.4	190.7	22.4	21.3		
145	11.5	16.3	220.7	33.2	19.2		
160	11.4	15.3	206.9	26.6	27.3	8.8	6.4
Farm	10.4				6.4	6.2	7.9

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

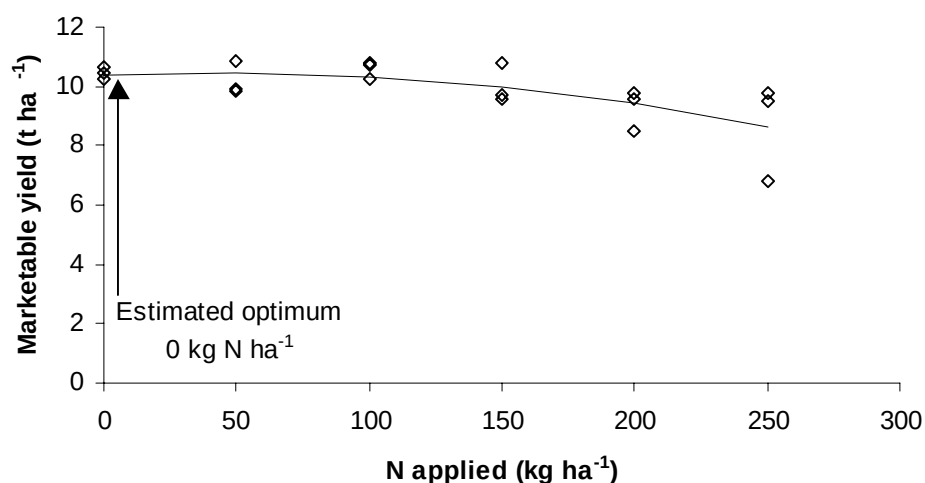
Site reference: 03b

Year: 1999

County:	Kent	Soil series:	Hamble
Grid reference:	TR 317525	Topsoil texture:	Silt loam
		pH:	6.9
Previous crop:	Field peas	Available P:	mg/l (Index 3)
Current crop:	Winter wheat	Available K:	mg/l (Index 2)
	cv. Chaucer	Total N:	0.07 %
Sowing date:	17/09/98		
Harvest date:	09/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	10.4	14.7	162.1	32.9	19.7	14.3	6.6
50	10.2	13.9	187.6	37.7	22.1		
100	10.6	15.5	225.8	53.5	44.9		
150	10.0	13.7	230.1	50.2	27.6		
200	9.3	14.1	232.8	68.2	24.1		
250	8.7	13.3	244.3	74.4	47.8	23.3	8.8
Farm	10.2		195.9		31.4	17.9	10.5

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

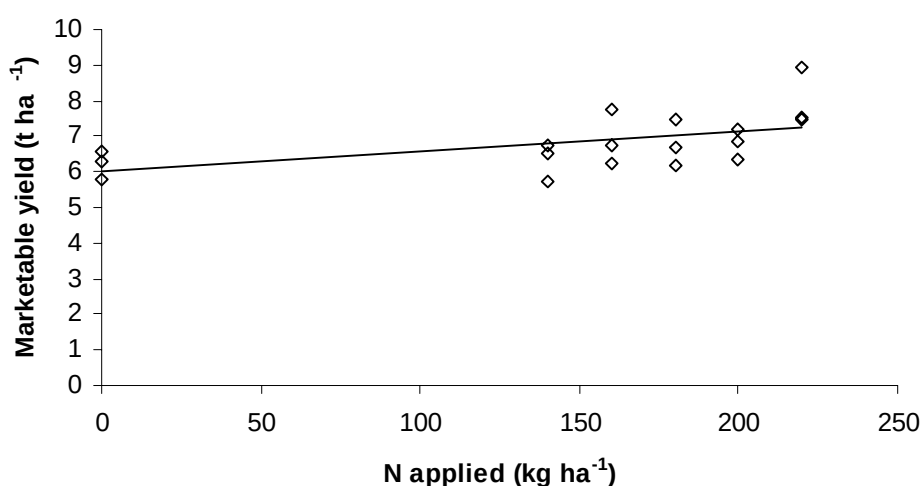
Site reference: 04

Year: 1998

County:	Kent	Soil series:	Hamble
Grid reference:	TQ 883625	Topsoil texture:	Silt loam
		pH:	5.2
Previous crop:	Winter wheat	Available P:	53 mg/l (Index 4)
Current crop:	Winter wheat	Available K:	334 mg/l (Index 3)
	cv. Soissons	Total N:	0.14 %
Sowing date:	10/10/97		
Harvest date:	27/07/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm Kg N ha ⁻¹ ₁	60-90 cm kg N ha ⁻¹
0	6.2	9.6	106.5	18.6	65.5	21.3	13.4
140	6.3	10.7	132.3	25.7	91.8		
160	6.9	10.3	136.8	21.7	85.8		
180	6.8	11.4	163.7	36.9	96.5		
200	6.8	9.8	142.2	20.0	92.6		
220	8.0	11.5	173.5	24.6	147.2	38.3	27.5
Farm 264	8.4				70.3	65.4	76.5

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No optimum could be fitted

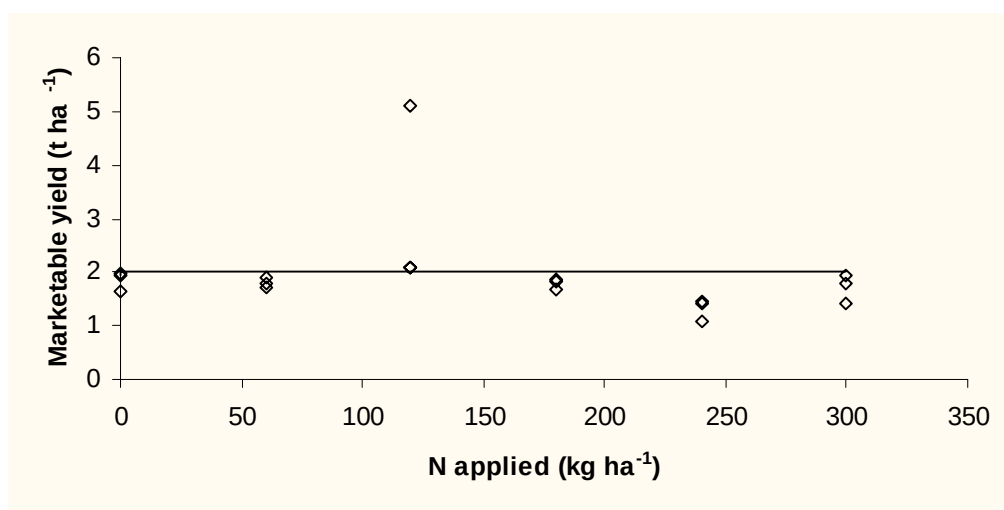
Site reference: 04

Year: 1999

County:	Kent	Soil series:	Hamble
Grid reference:	TQ 883625	Topsoil texture:	Silt loam
		pH:	5.2
Previous crop:	Winter wheat	Available P:	53 mg/l (Index 4)
Current crop:	Winter oilseed rape	Available K:	334 mg/l (Index 3)
	cv. Apex	Total N:	0.14 %
Sowing date:	02/09/98		
Harvest date:	15/07/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	1.9	9.7	102.0	43.2	39.8	16.5	11.3
60	1.8	8.3	107.1	43.9	48.2		
120	3.1	10.6	153.8	42.2	46.3		
180	1.8	9.1	112.3	46.4	106.2		
240	1.3	7.9	121.9	76.7	125.5		
300	1.7	10.0	121.0	56.8	170.8	23.9	13.7
Farm 110	1.6		101.1		129.8	73.6	73.1

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N

Site reference: 05

Year: 1998

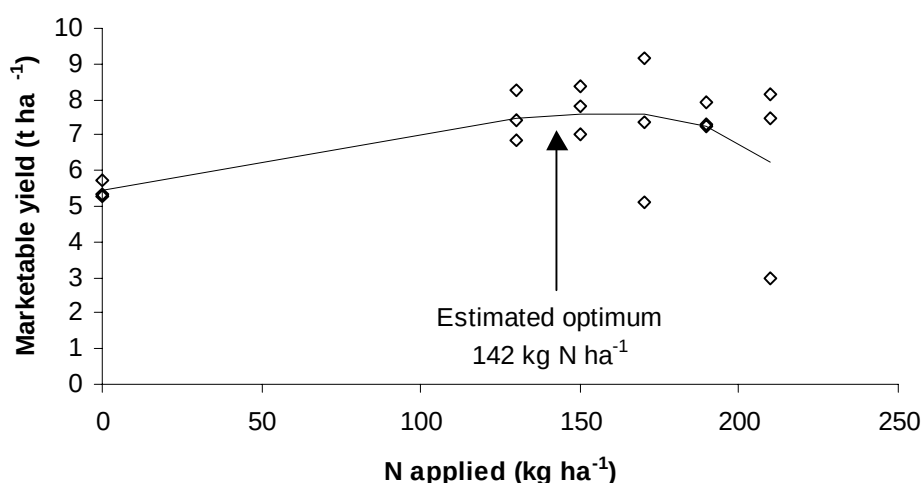
County: Bedfordshire
Grid reference: SP 955248

Soil series: Bearsted
Topsoil texture: Sandy loam
pH: 6.9
Available P: 28 mg/l (Index 3)
Available K: 124 mg/l (Index 2)
Total N: 0.24 %

Previous crop: Field peas
Current crop: Winter wheat
cv. Hereward
Sowing date: 05/10/97
Harvest date: 15/08/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	5.5	10.7	99.9	24.6	96.7	32.5	18.2
130	8.0	15.2	224.8	79.8	105.0		
150	7.7	13.0	193.0	47.2	125.1		
170	7.2	14.7	242.8	86.3	124.1		
190	7.5	13.9	227.2	76.7	135.1		
210	6.2	11.7	213.9	85.7	153.8	81.2	50.2
Farm 222	8.3				131.7	59.2	29.2

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 05

Year: 1999

County: Bedfordshire
Grid reference: SP 955248

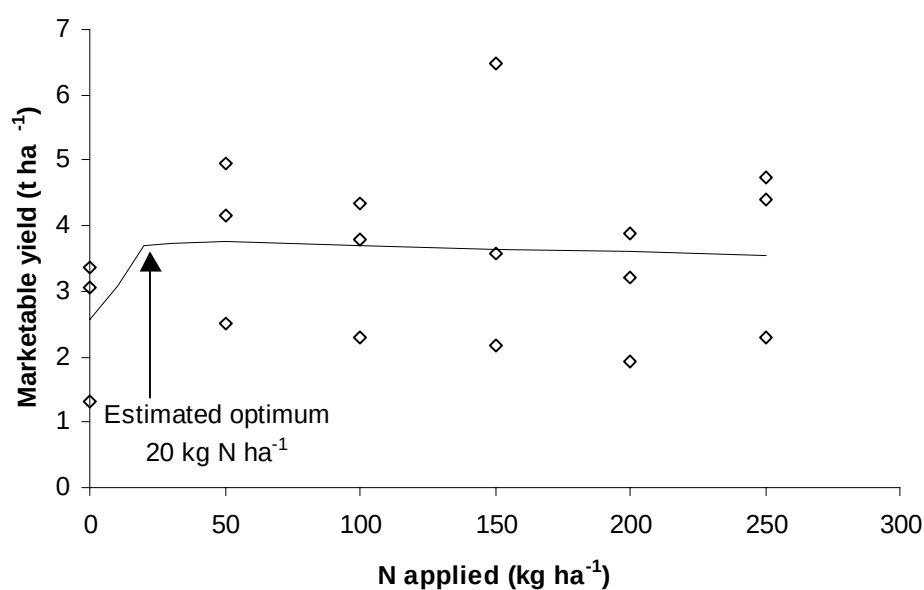
Soil series: Bearsted
Topsoil texture: Sandy loam
pH: 6.9
Available P: 28 mg/l (Index 3)
Available K: 124 mg/l (Index 2)
Total N: 0.24 %

Previous crop: Winter wheat
Current crop: Winter wheat
cv. Rialto
Sowing date: 19/10/98
Harvest date: 22/08/99

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	2.6	6.3	45.4	13.8	45.5	33.8	22.5
50	3.9	7.8	71.2	18.6	40.9		
100	3.5	8.6	75.1	26.3	38.7		
150	4.1	9.0	107.4	38.1	49.4		
200	3.0	8.3	100.5	48.8	53.6		
250	3.8	8.6	116.3	43.7	75.0	77.6	69.6
Farm 125	3.7		106.3		43.6	25.8	24.3

Comments: Yields reduced by blackgrass infestation

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 06a

Year: 1998

County: Cambridgeshire
Grid reference: TF 074009

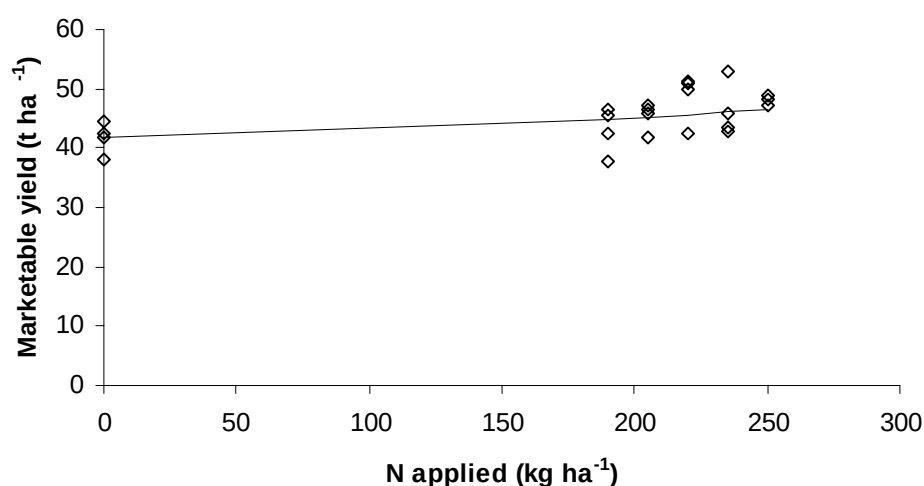
Soil series: Elmton
Topsoil texture: Clay loam
pH: 7.7
Available P: 65 mg/l (Index 4)
Available K: 279 mg/l (Index 3)
Total N: 0.16 %

Previous crop: Winter wheat
Current crop: Potatoes
cv. Maris Piper
Sowing date: 05/05/98
Harvest date: 28/09/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	39.1	10.5	96.2	4.8	41.7	56.5	
190	40.1	10.8	100.1	5.0	31.9		
205	42.7	11.5	106.6	5.3	45.1		
220	46.8	12.0	118.3	6.0	45.4		
235	44.3	11.6	112.3	5.6	47.7		
250	41.9	11.0	112.3	5.7	48.8	56.1	
Farm 240	31.1						

Comments: Soil reaches limestone at 60 cm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No optimum could be fitted

Site reference: 06b

Year: 1999

County: Cambridgeshire
Grid reference: TF 074009

Soil series: Elmton
Topsoil texture: Clay loam
pH: 7.6

Previous crop: Field peas
Current crop: Winter wheat
cv. Riband

Available P: mg/l (Index 3)
Available K: mg/l (Index 3)
Total N: 0.16 %

Sowing date: 03/09/98

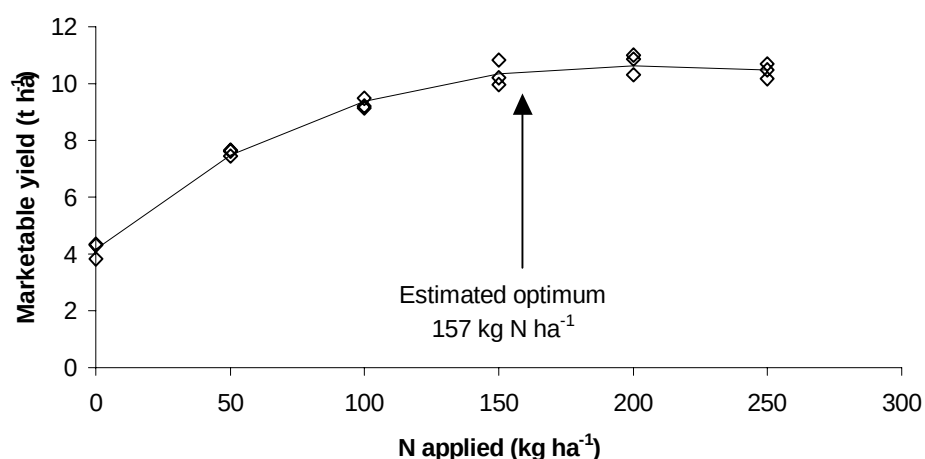
Harvest date: 04/08/99

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.2	8.4	58.5		55.0		
50	7.6	15.1	124.9		56.7		
100	9.3	17.7	169.1		52.5		
150	10.3	19.4	182.2		44.4		
200	10.7	21.5	255.5		55.4		
250	10.5	20.5	281.9		56.6		
Farm 190	10.5		254.1		45.0		

Comments: Soil sampled only to 30 cm.

% N determined for whole plant sample, therefore it was not possible to calculate N return in residues.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

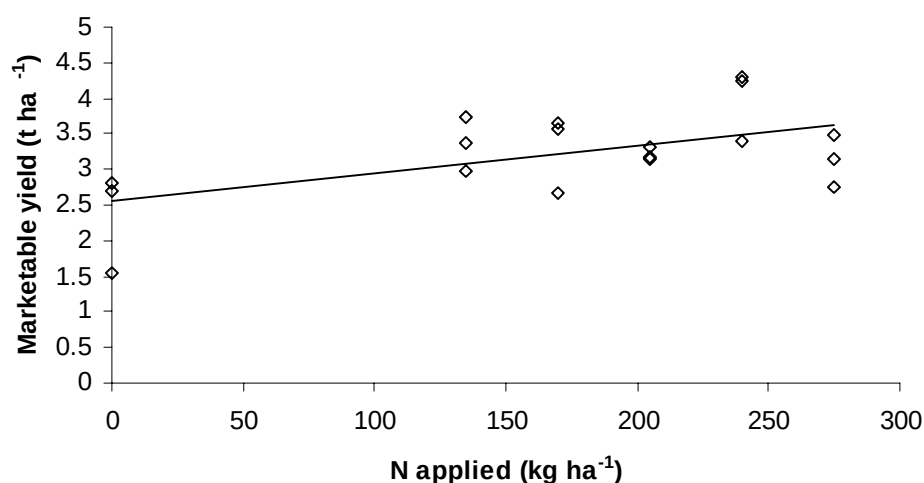
Site reference: 07

Year: 1998

County:	Lancashire	Soil series:	Downholland
Grid reference:	SD 304059	Topsoil texture:	Clay loam
		pH:	7.5
Previous crop:	Winter wheat	Available P:	15 mg/l (Index 1)
Current crop:	Winter oilseed rape	Available K:	190 mg/l (Index 2)
	cv. Apex	Total N:	0.10 %
Sowing date:	27/08/97		
Harvest date:	03/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	2.3	4.1	65.3	9.0	38.1	20.5	9.5
135	3.4	6.6	128.2	26.3	50.4		
170	3.3	7.0	144.5	39.5	82.8		
205	3.2	6.7	144.9	39.4	112.5		
240	4.0	6.5	159.5	29.1	148.4		
275	3.2	6.8	154.3	46.9	97.8	32.0	15.7
Farm 174	2.9				45.7	15.2	36.8

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No optimum could be fitted

Site reference: 07

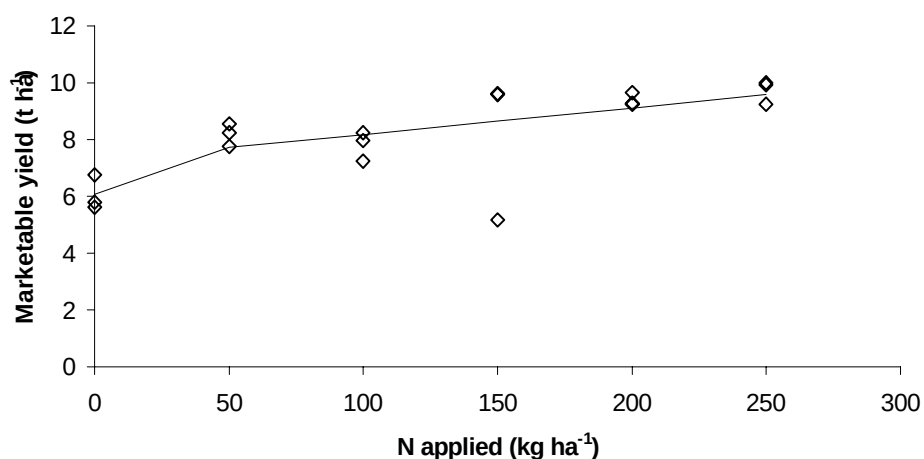
Year: 1999

County:	Lancashire	Soil series:	Downholland
Grid reference:	SD 304059	Topsoil texture:	Clay loam
		pH:	7.5
Previous crop:	Winter oilseed rape	Available P:	15 mg/l (Index 1)
Current crop:	Winter wheat	Available K:	190 mg/l (Index 2)
	cv. Rialto	Total N:	0.10 %
Sowing date:	04/10/98		
Harvest date:	12/08/99 (trial)		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	6.1	10.6	97.7	20.0	40.5	23.6	16.1
50	8.2	13.0	148.8	28.1	34.3		
100	7.8	13.4	148.3	34.2	39.9		
150	8.1	13.7	186.5	40.8	40.3		
200	9.4	16.9	269.4	83.3	54.4		
250	9.7	16.1	286.0	83.7	35.8	36.4	18.7
Farm 215	8.7		181.6		48.8	26.7	12.2

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: Optimum above maximum N rate used

Site reference: 08

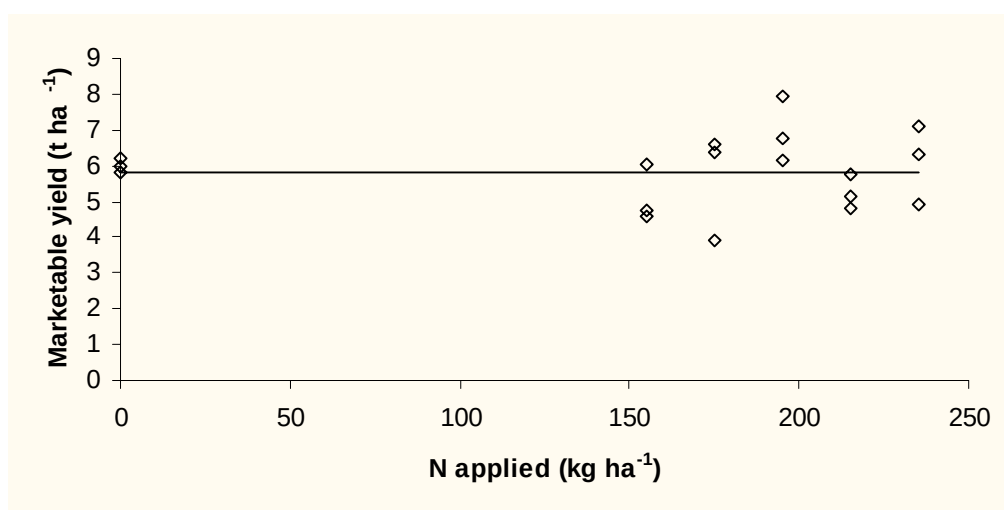
Year: 1998

County:	Lancashire	Soil series:	Downholland
Grid reference:	SD 306053	Topsoil texture:	Clay loam
		pH:	7.6
Previous crop:	Field peas	Available P:	20 mg/l (Index 2)
Current crop:	Winter wheat	Available K:	237 mg/l (Index 2)
	cv. Hussar	Total N:	0.16 %
Sowing date:	09/09/97		
Harvest date:	14/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	6.2	12.5	106.2	52.1	34.5	12.5	10.9
155	5.2	11.8	157.2	95.1	151.9		
175	6.4	13.5	191.9	107.7	148.5		
195	6.2	13.8	176.6	117.7	93.7		
215	6.0	12.5	190.6	123.5	104.8		
235	5.5	11.5	167.3	105.3	138.1	22.9	11.9
Farm 174	9.0						

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: No significant response to N

Site reference: 08

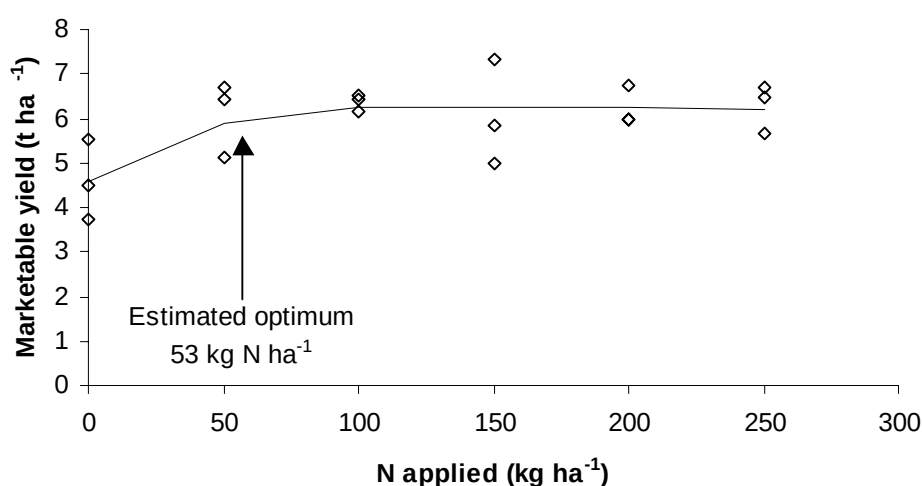
Year: 1999

County:	Lancashire	Soil series:	Downholland
Grid reference:	SD 306053	Topsoil texture:	Clay loam
		pH:	7.6
Previous crop:	Winter wheat	Available P:	20 mg/l (Index 2)
Current crop:	Winter barley	Available K:	237 mg/l (Index 2)
	cv. Regina	Total N:	0.16 %
Sowing date:	10/10/98		
Harvest date:	28/07/99 (trial)		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.6	6.4	65.5	11.3	38.6	14.1	15.4
50	6.3	9.1	114.7	25.9	32.5		
100	6.4	9.1	115.8	27.3	30.1		
150	6.3	9.4	137.2	34.1	40.9		
200	6.1	8.1	131.6	27.8	43.8		
250	6.2	9.3	136.1	36.5	47.4	18.8	22.4
Farm 160	5.8		124.1		30.2	18.0	15.5

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



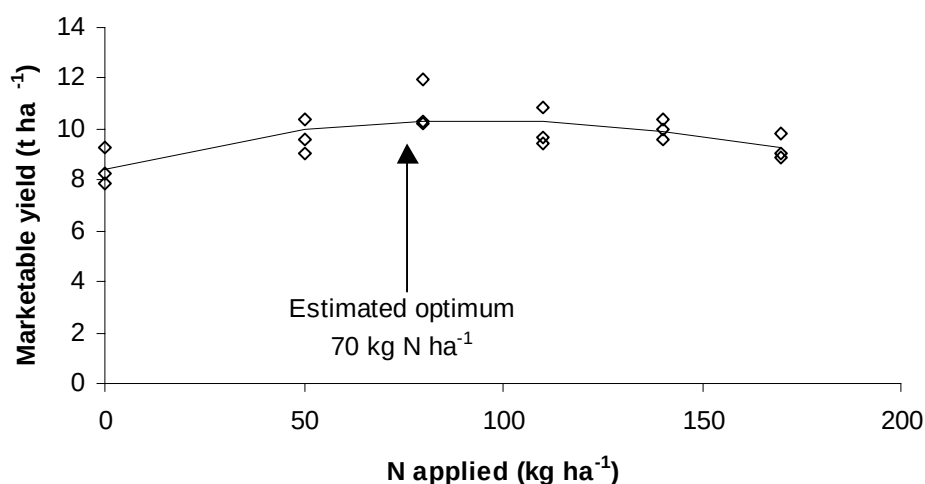
Site reference: 09

Year: 1998

County:	Cheshire	Soil series:	Hodnet
Grid reference:	SJ 492461	Topsoil texture:	Sandy clay loam
		pH:	5.9
Previous crop:	Spring oilseed rape	Available P:	50 mg/l (Index 4)
Current crop:	Winter wheat	Available K:	132 mg/l (Index 2)
	cv. Equinox	Total N:	0.17 %
Sowing date:	26/09/97		
Harvest date:	25/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	8.5	11.9	126.3	2.8	66.1	15.1	16.1
50	9.7	13.8	176.3	4.4	41.8		
80	10.8	15.5	219.1	6.1	39.9		
110	10.0	14.7	218.4	6.8	83.6		
140	10.0	14.1	218.2	6.4	71.1		
170	9.3	13.9	223.1	7.8	91.9	20.8	15.3
Farm 122	8.0				22.4	31.2	30.4

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 09

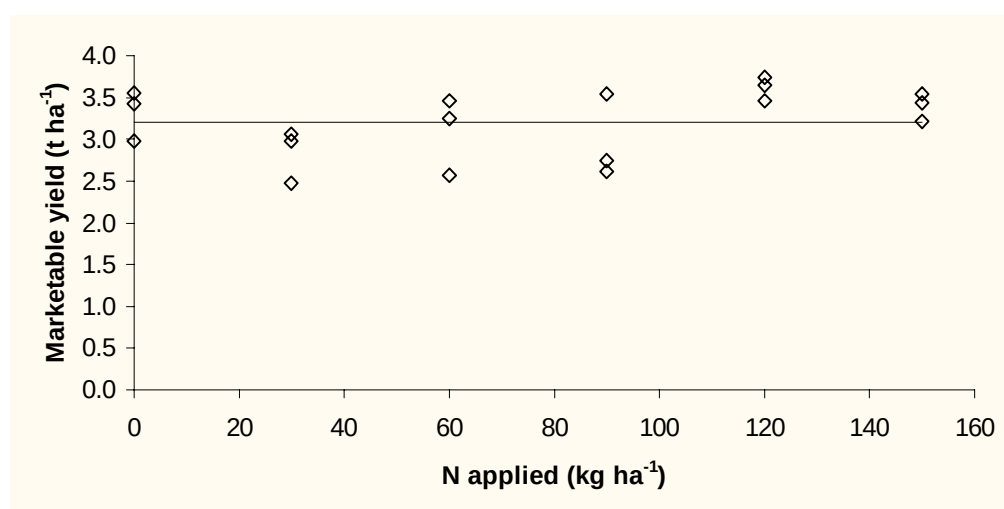
Year: 1999

County:	Cheshire	Soil series:	Hodnet
Grid reference:	SJ 492461	Topsoil texture:	Sandy clay loam
		pH:	5.9
Previous crop:	Winter wheat	Available P:	50 mg/l (Index 4)
Current crop:	Spring oilseed rape	Available K:	132 mg/l (Index 2)
	cv. Sprinter	Total N:	0.17 %
Sowing date:	02/04/99		
Harvest date:	10/09/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	3.2	8.3	145.8	33.0	61.3	29.6	14.9
30	3.3	8.5	156.2	38.7	67.8		
60	3.4	8.9	164.3	47.1	70.1		
90	2.9	8.2	148.1	44.1	102.5		
120	3.3	9.8	179.2	58.5	61.4		
150	3.1	9.8	171.2	59.7	62.4	51.5	21.3
Farm 115	2.3		121.5	40.5	52.7	37.8	15.5

Comments: Field received an application of slurry by a neighbouring farmer in January 1999, the quantity was not known.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N

Site reference: 10

Year: 1998

County: Cambridgeshire
Grid reference: TF 074009

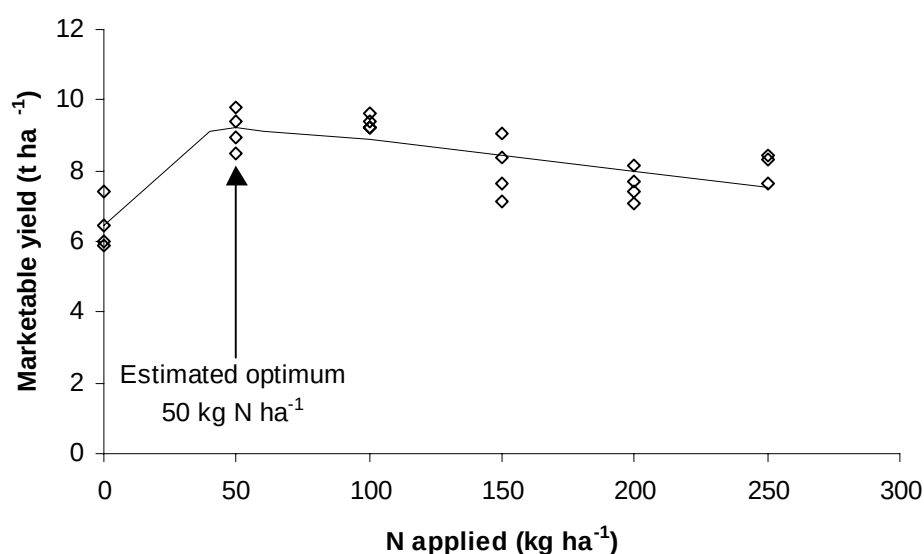
Soil series: Elmton
Topsoil texture: Clay loam
pH: 7.7
Available P: 49 mg/l (Index 4)
Available K: 126 mg/l (Index 2)
Total N: 0.17 %

Previous crop: Field peas
Current crop: Winter wheat
cv. Riband
Sowing date: 03/09/97
Harvest date: 06/08/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	6.5				21.4		
50	9.2				15.7		
100	9.3				14.6		
150	8.3				14.9		
200	7.8				20.7		
250	7.9				14.2		
Farm 190	7.6				17.2		

Comments: Crop samples not kept from combine. No determinations of %N possible.
Soil only 30 cm depth to limestone.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 10

Year: 1999

County: Cambridgeshire
Grid reference: TF 074009

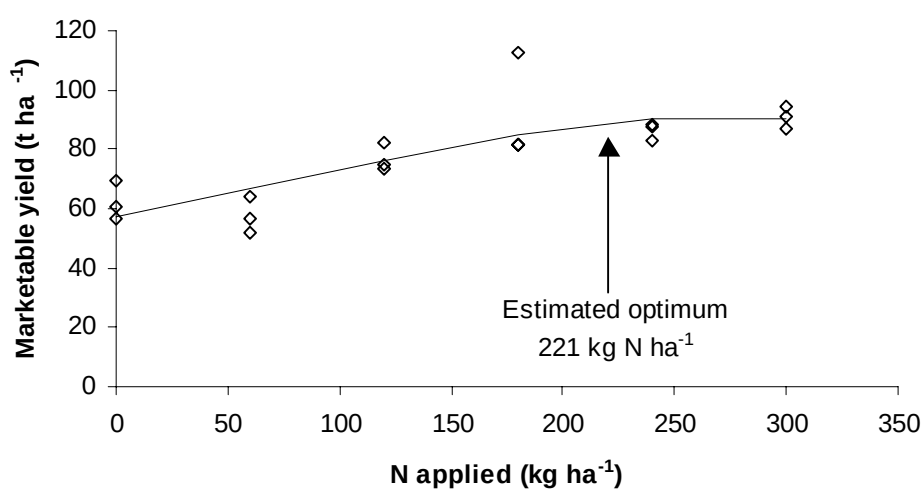
Soil series: Elmton
Topsoil texture: Clay loam
pH: 7.7
Available P: 49 mg/l (Index 4)
Available K: 136 mg/l (Index 2)
Total N: 0.17 %

Previous crop: Winter wheat
Current crop: Potatoes
cv. Cara
Sowing date: 03/04/99
Harvest date: 16/10/99

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	53.6	14.1	157.4	7.9	28.3		
60	51.6	13.1	156.3	7.8	32.2		
120	64.6	17.7	168.2	8.4	29.9		
180	71.9	19.2	231.9	13.6	28.2		
240	82.1	22.3	172.6	11.1	37.1		
300	76.1	20.8	219.5	11.0	49.0		
Farm 213	73.9						

Comments: Soil only 30 cm depth to rock.

Response of total tuber yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 11

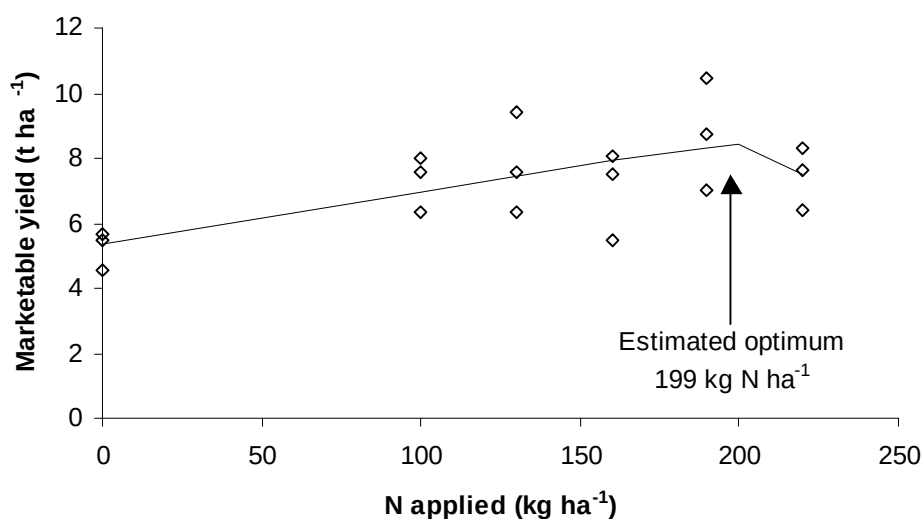
Year: 1998

County:	Hertfordshire	Soil series:	Hanslope
Grid reference:	TL 401350	Topsoil texture:	Clay
		pH:	7.8
Previous crop:	Winter oilseed rape	Available P:	24 mg/l (Index 2)
Current crop:	Winter wheat	Available K:	196 mg/l (Index 2)
	cv. Martina	Total N:	0.17 %
Sowing date:	15/09/97		
Harvest date:	19/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	5.3	10.3	80.2	23.1	35.3	20.3	9.6
100	7.3	14.1	157.0	47.8	55.9		
130	7.8	15.0	169.0	52.6	35.7		
160	7.0	13.5	199.6	68.5	46.0		
190	8.8	15.5	218.9	68.3	39.1		
220	7.5	13.9	218.0	76.6	64.9	22.8	13.0
Farm 200	9.5				39.0	17.7	15.3

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 11

Year: 1999

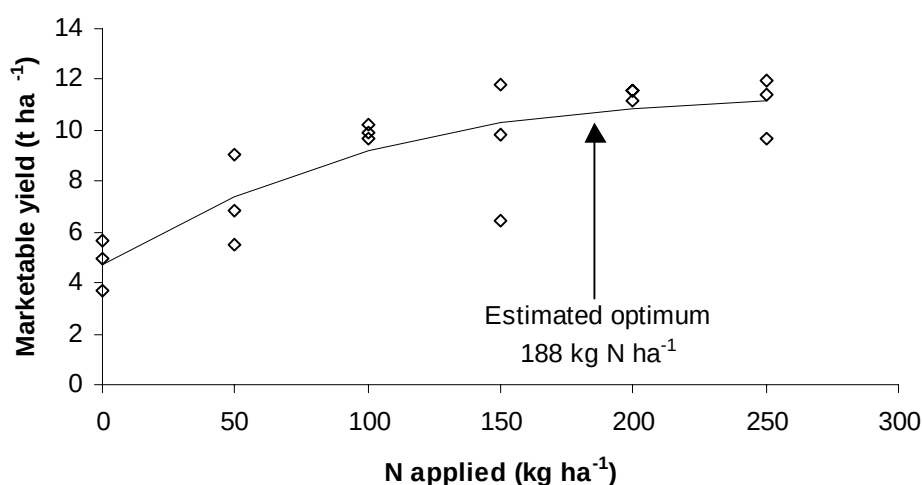
County: Hertfordshire
Grid reference: TL 401350

Soil series: Hanslope
Topsoil texture: Clay
pH: 7.8
Available P: 24 mg/l (Index 2)
Available K: 196 mg/l (Index 2)
Total N: 0.17 %

Previous crop: Winter wheat
Current crop: Winter wheat
cv. Madrigal
Sowing date: 22/09/98
Harvest date: 12/08/99

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.8	6.6	59.0	8.8	45.1	20.8	3.9
50	7.1	9.7	117.4	18.0	47.5		
100	9.9	14.1	151.6	25.3	61.4		
150	9.4	13.8	170.1	30.6	61.7		
200	11.4	15.2	236.7	39.6	61.5		
250	11.0	15.0	231.3	39.2	59.6	28.8	2.1
Farm 236	10.8		191.8		41.1	17.9	15.5

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 12

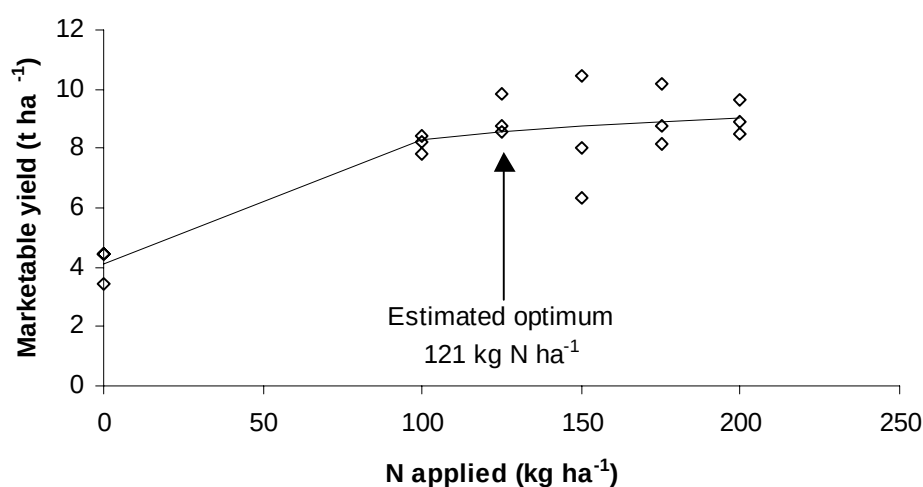
Year: 1998

County:	Essex	Soil series:	Hanslope
Grid reference:	TL 465342	Topsoil texture:	Clay
		pH:	7.4
Previous crop:	Winter wheat	Available P:	37 mg/l (Index 3)
Current crop:	Winter wheat	Available K:	171 mg/l (Index 2)
	cv. Reaper	Total N:	0.16 %
Sowing date:	17/09/97		
Harvest date:	10/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.1	7.2	56.1	12.0	146.7	44.4	
100	8.1	13.5	134.1	26.6	103.8		
125	9.5	13.5	150.3	23.6	120.8		
150	8.2	14.1	155.8	35.8	97.3		
175	9.0	13.5	177.9	32.6	129.7		
200	9.0	14.7	197.9	43.3	117.8	37.7	
Farm 223					72.4	36.8	

Comments: Soil reaches chalk at 60 cm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 12

Year: 1999

County:	Essex	Soil series:	Hanslope
Grid reference:	TL 465342	Topsoil texture:	Clay
		pH:	7.4
Previous crop:	Winter wheat	Available P:	37 mg/l (Index 3)
Current crop:	Winter oilseed rape	Available K:	171 mg/l (Index 2)
	cv. Apex	Total N:	0.16 %
Sowing date:	11/08/98		
Harvest date:	18/07/99		

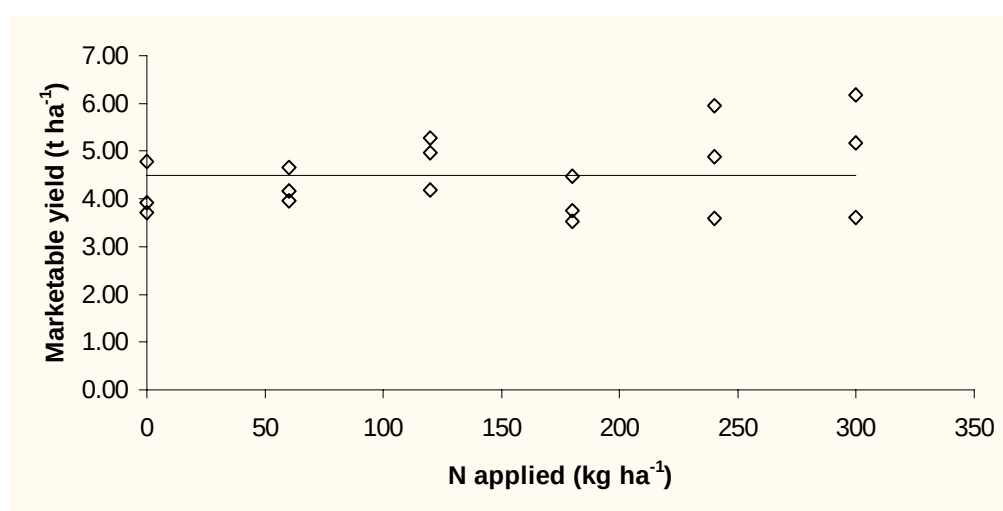
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate *	Marketable yield	Total dry weight yield	N uptake	N returned in crop residues	Soil mineral N after harvest		
					0-30 cm	30-60 cm	60-90 cm
kg N ha ⁻¹	t ha ⁻¹	t ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹
0	4.0	9.7	155.4	53.3	45.8	32.7	
60	4.3	9.7	175.6	47.6	71.5		
120	4.8	11.3	208.0	62.2	85.6		
180	3.9	8.5	182.3	56.4	116.7		
240	4.8	11.4	219.4	67.7	212.4		
300	5.0	11.3	213.8	54.6	304.4	79.7	
Farm 255	4.3		158.0		58.9	37.9	

Comments: Soil reaches chalk at 60 cm.

Oilseed rape autocast

* Basal application of 36 kgN/ha August 1998 to all plots and farm area.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to applied N

Site reference: 13

Year: 1998

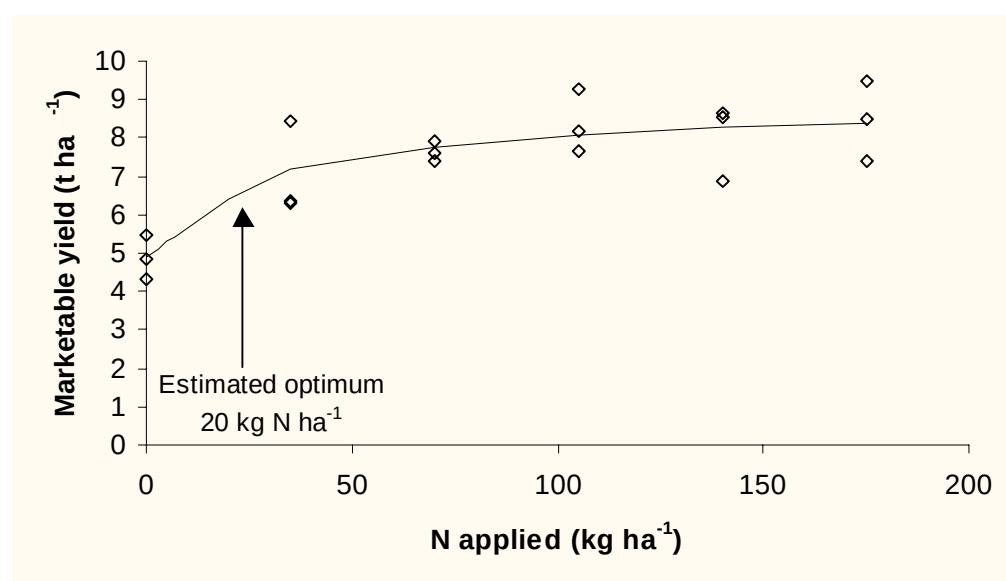
County: Cambridgeshire
Grid reference: TL 399607

Soil series: Hanslope
Topsoil texture: Clay
pH: 7.8
Available P: 24 mg/l (Index 2)
Available K: 244 mg/l (Index 3)
Total N: 0.16 %

Previous crop: Winter wheat
Current crop: Winter barley
cv. Regina
Sowing date: 02/10/97
Harvest date: 08/08/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.9	7.1	64.1	8.0	30.4	24.6	14.1
35	7.0	9.4	98.3	11.0	51.6		
70	7.6	10.5	121.9	16.1	66.0		
105	8.4	10.9	140.4	16.3	49.2		
140	8.0	11.6	173.8	33.6	33.3		
175	8.5	11.9	200.8	42.8	39.4	36.2	24.4
Farm 188	7.4				54.0	25.5	16.9

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

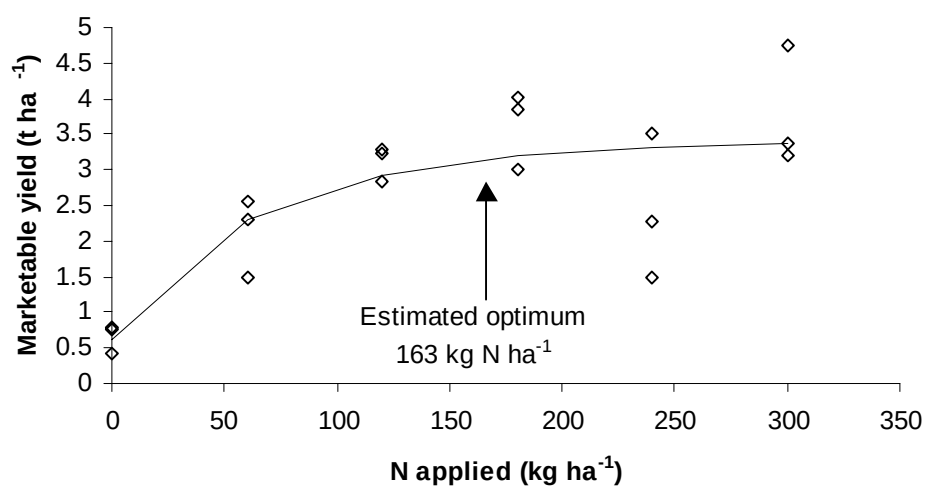
Site reference: 13

Year: 1999

County:	Cambridgeshire	Soil series:	Hanslope
Grid reference:	TL 399607	Topsoil texture:	Clay
		pH:	7.8
Previous crop:	Winter barley	Available P:	24 mg/l (Index 2)
Current crop:	Winter oilseed rape	Available K:	244 mg/l (Index 3)
	cv. Lipton	Total N:	0.16 %
Sowing date:	04/09/98		
Harvest date:	20/07/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	0.7	4.5	42.4	30.6	51.5	30.6	14.6
60	2.1	7.9	108.9	53.3	57.6		
120	3.1	9.0	142.8	47.7	67.5		
180	3.6	9.7	180.8	67.9	62.6		
240	2.4	8.1	158.5	78.5	62.8		
300	3.8	11.0	222.0	100.6	77.1	42.3	30.8
Farm 232	4.5		205.7		62.1	29.6	13.4

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 14

Year: 1998

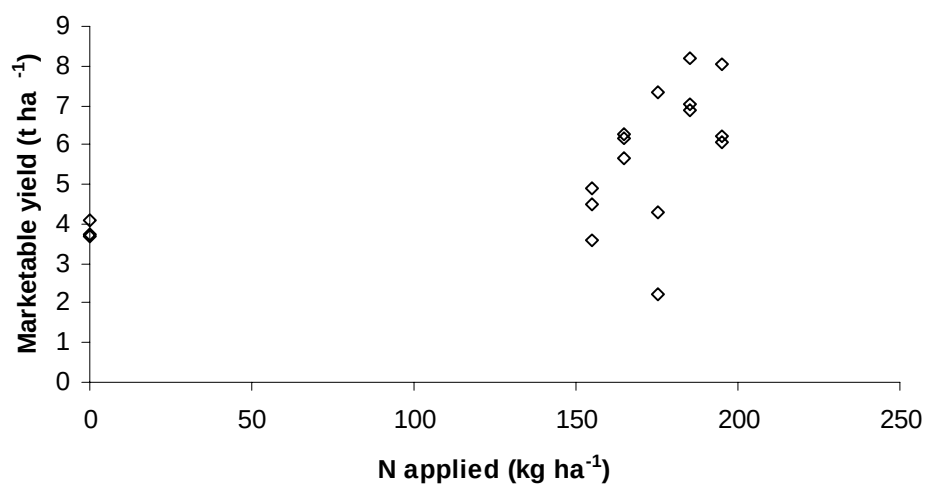
County:	Suffolk	Soil series:	Burlingham
Grid reference:	TM 247672	Topsoil texture:	Sandy clay loam
		pH:	7.9
Previous crop:	Winter wheat	Available P:	76 mg/l (Index 5)
Current crop:	Winter oilseed rape	Available K:	264 mg/l (Index 3)
	cv. Navajo	Total N:	0.14 %
Sowing date:	11/09/97		
Harvest date:	25/07/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate *	Marketable yield	Total dry weight yield	N uptake	N returned in crop residues	Soil mineral N after harvest		
					0-30 cm	30-60 cm	60-90 cm
kg N ha ⁻¹	t ha ⁻¹	t ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹	kg N ha ⁻¹
0	3.8	6.1	102.4	6.9	44.1	19.8	16.5
155	4.3	9.5	175.1	46.8	65.4		
165	6.0	10.5	222.9	43.8	75.3		
175	4.6	7.7	169.4	38.9	88.2		
185	7.4	12.8	262.4	55.0	86.0		
195	6.8	10.5	234.3	31.1	81.7	25.8	15.9
Farm 238	4.3				62.2	16.4	16.5

* Basal application of 40 kgN/ha applied 27/10/97 to all plots and to farm area.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comment: Response curve could not be fitted

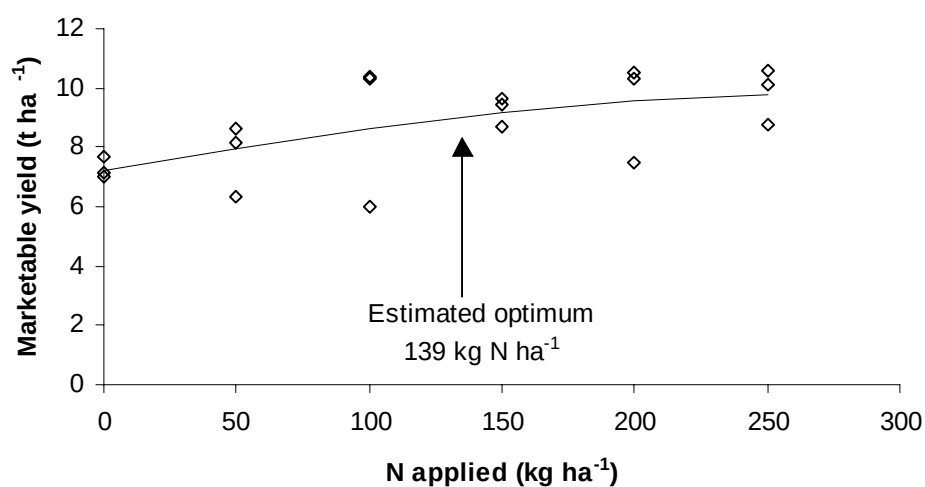
Site reference: 14

Year: 1999

County:	Suffolk	Soil series:	Burlingham
Grid reference:	TM 247672	Topsoil texture:	Sandy clay loam
		pH:	7.9
Previous crop:	Winter oilseed rape	Available P:	76 mg/l (Index 5)
Current crop:	Winter wheat	Available K:	264 mg/l (Index 3)
	cv. Equinox	Total N:	0.14 %
Sowing date:	03/10/98		
Harvest date:	18/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	7.3	8.6	132.1	1.3	27.9	20.9	18.9
50	7.7	10.1	146.1	2.0	40.1		
100	8.9	11.3	198.6	2.8	22.1		
150	9.2	11.1	196.2	3.0	32.9		
200	9.4	11.0	163.5	3.2	42.8		
250	9.8	11.3	201.2	3.4	35.2	41.5	25.9
Farm 124	10.0		185.0		15.6	39.2	17.0

Comments: Field received 40 t ha⁻¹ of pig FYM in autumnResponse of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

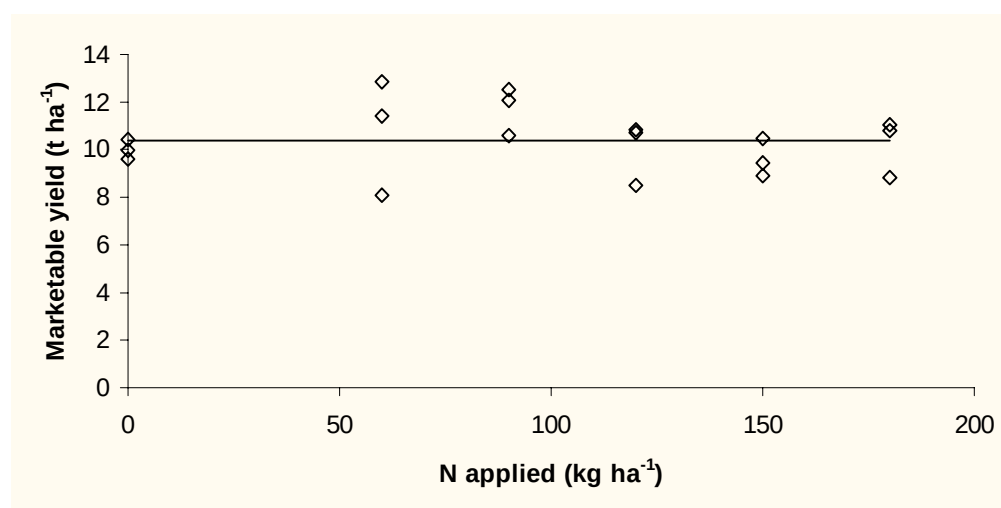
Site reference: 15

Year: 1998

County:	Suffolk	Soil series:	Burlingham
Grid reference:	TM 251167	Topsoil texture:	Sandy clay loam
		pH:	6.6
Previous crop:	Vining peas	Available P:	119 mg/l (Index 6)
Current crop:	Winter wheat	Available K:	483 mg/l (Index 4)
	cv. Equinox	Total N:	0.22 %
Sowing date:	13/10/97		
Harvest date:	20/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	10.0	18.3	266.6	10.1	87.1	52.9	36.2
60	10.8	18.2	280.0	9.0	80.5		
90	11.7	20.5	351.6	15.9	93.3		
120	10.0	18.6	306.5	14.3	85.6		
150	9.6	17.4	288.3	13.0	91.2		
180	10.2	18.0	304.6	13.4	122.2	59.9	50.4
Farm 84	11.7				85.6	64.2	53.9

Comments: Field received 45 t ha⁻¹ of pig FYM in autumnResponse of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N applied

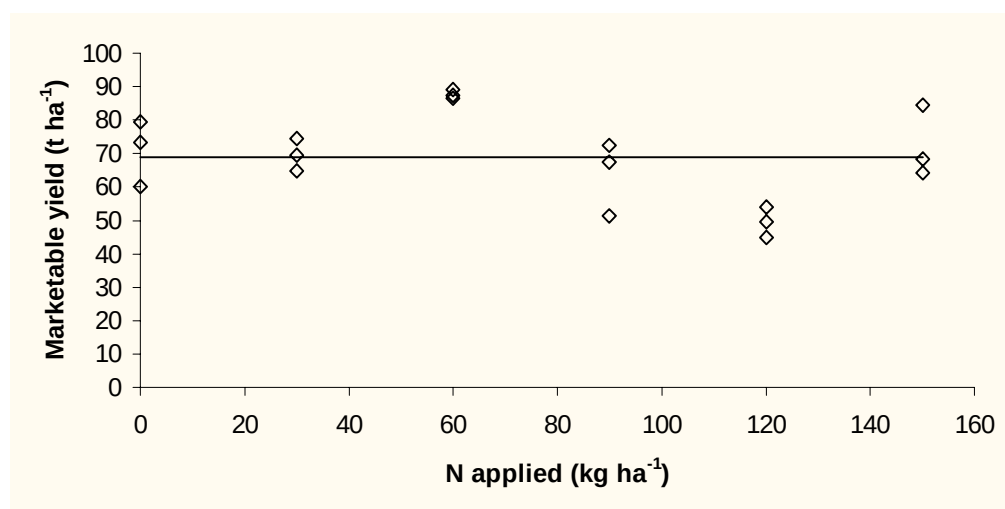
Site reference: 15

Year: 1999

County:	Suffolk	Soil series:	Burlingham
Grid reference:	TM 251167	Topsoil texture:	Sandy clay loam
		pH:	6.6
Previous crop:	Winter wheat	Available P:	119 mg/l (Index 6)
Current crop:	Sugar beet	Available K:	483 mg/l (Index 4)
	cv. Madison	Total N:	0.22 %
Sowing date:	03/04/99		
Harvest date:	13/12/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	70.9	20.8	208.7	78.4	29.3	14.6	12.3
30	69.5	20.5	216.5	83.3	48.4		
60	87.7	25.0	255.8	78.5	54.9		
90	63.7	18.2	204.5	66.4	42.4		
120	49.5	14.1	178.8	72.1	51.9		
150	72.3	19.0	234.3	78.2	31.8	19.0	14.4
Farm 192	92.6						

Comments: Field received 35 t ha⁻¹ of duck FYM in autumnResponse of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to N applied

Site reference: 16

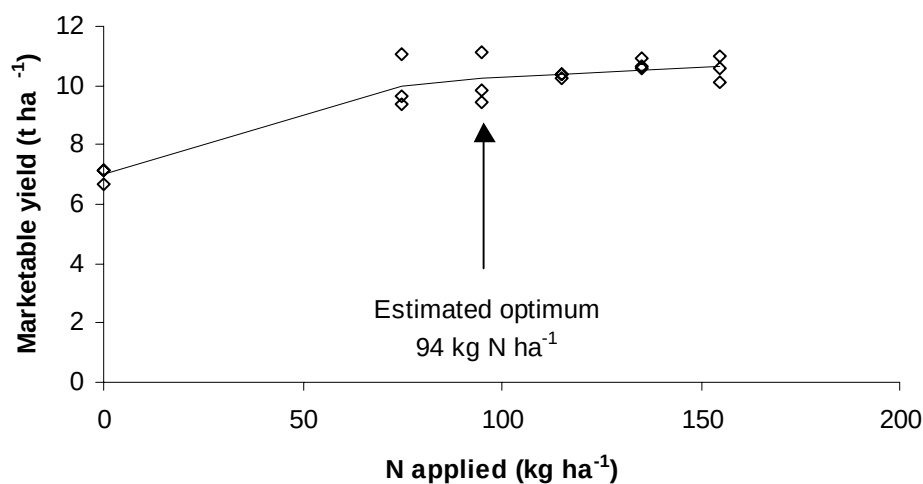
Year: 1998

County:	Norfolk	Soil series:	Romney
Grid reference:	TF 577245	Topsoil texture:	Silt loam
		pH:	7.9
Previous crop:	Set-aside	Available P:	28 mg/l (Index 3)
Current crop:	Winter wheat	Available K:	292 mg/l (Index 3)
	cv. Consort	Total N:	0.07 %
Sowing date:	17/09/97		
Harvest date:	15/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	7.0	10.1	97.2	9.3	16.9	11.3	8.2
75	10.0	14.1	158.7	19.1	22.6		
95	10.1	14.6	172.0	23.1	26.6		
115	10.3	15.5	189.4	28.1	23.9		
135	10.7	15.0	176.5	20.1	27.6		
155	10.6	16.2	190.6	35.3	20.9	9.7	7.8
Farm 130	11.0				27.2	9.3	9.0

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 16

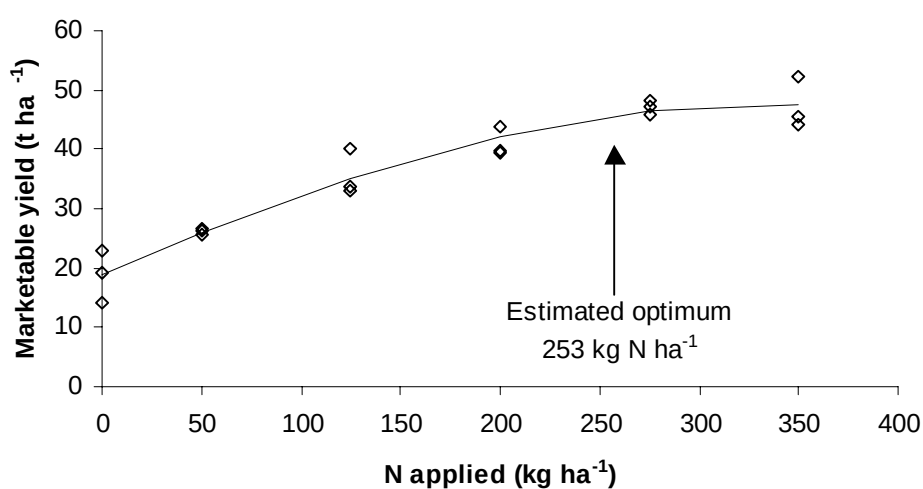
Year: 1999

County:	Norfolk	Soil series:	Romney
Grid reference:	TF 570246	Topsoil texture:	Silt loam
		pH:	7.9
Previous crop:	Winter wheat	Available P:	28 mg/l (Index 3)
Current crop:	Dutch white cabbage	Available K:	292 mg/l (Index 3)
	cv. Quisto	Total N:	0.07%
Sowing date:	17/05/99		
Harvest date:	07/09/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	18.7	4.86	50.8	28.3	18.5	9.5	5.9
50	26.1	6.17	62.9	31.5	22.1		
125	35.6	7.42	88.5	43.1	21.4		
200	41.1	8.26	124.9	57.5	23.1	8.8	6.8
275	47.1	8.42	150.9	67.6	22.6		
350	47.4	9.01	184.0	87.2	34.4	11.2	8.2
Farm 200	N/A						

Comments: Single cut, marketable heads > 450 g.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 17

Year: 1998

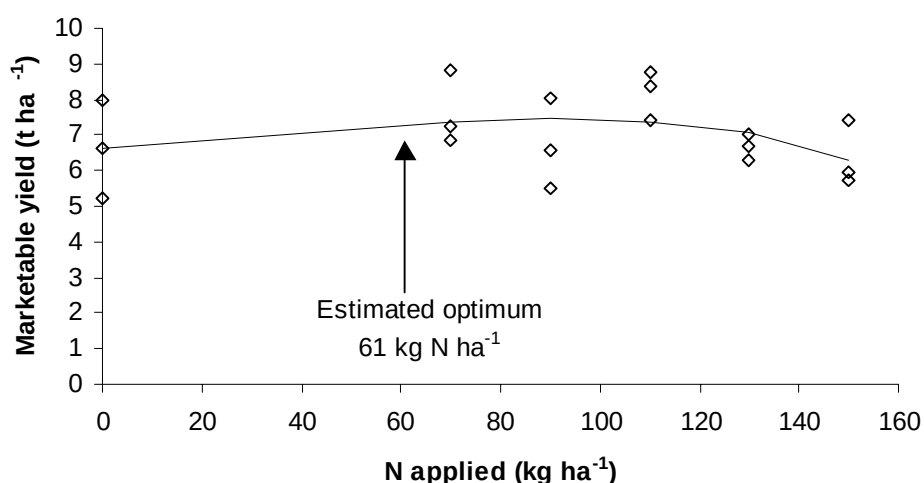
County: Oxfordshire
 Grid reference: SP 429957
 Previous crop: Winter beans
 Current crop: Winter wheat
 cv. Hereward
 Sowing date: 27/09/97
 Harvest date: 15/08/98

Soil series: Denchworth
 Topsoil texture: Clay
 pH: 7.0
 Available P: 49 mg/l (Index 4)
 Available K: 328 mg/l (Index 3)
 Total N: 0.33 %

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	6.6	11.8	151.8	24.3	56.6	27.5	10.0
70	7.6	13.4	192.1	36.9	32.4		
90	6.7	11.8	194.3	46.5	44.7		
110	8.2	14.0	235.5	51.7	30.1		
130	6.7	12.0	194.8	46.0	30.7		
150	6.4	12.3	209.4	62.0	32.2	17.0	9.5
Farm 160	8.5				20.6	12.6	13.7

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 17

Year: 1999

County: Oxfordshire

Soil series: Denchworth

Grid reference: SP 429957

Topsoil texture: Clay

pH: 7.0

Previous crop: Winter wheat

Available P: 49 mg/l (Index 4)

Current crop: Winter wheat

Available K: 328 mg/l (Index 3)

cv. Equinox

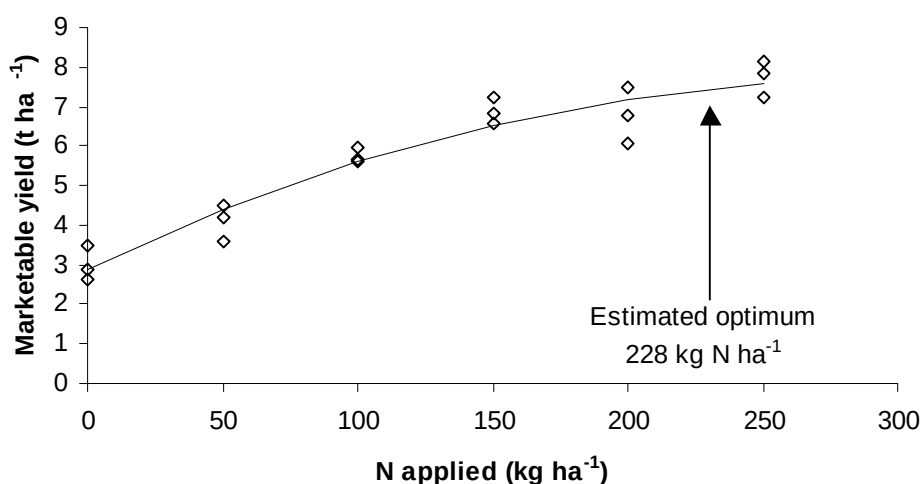
Total N: 0.33 %

Sowing date: 19/10/98

Harvest date: 13/08/99 (trial)

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	3.0	4.5	42.1	7.4	122.2	35.4	46.2
50	4.1	6.1	70.4	11.9	139.8		
100	5.8	8.2	87.6	14.7	128.2		
150	6.9	10.2	132.9	25.3	111.5		
200	6.8	9.6	137.1	15.3	213.8		
250	7.7	10.7	136.4	19.4	212.1	55.1	46.2
Farm 220	8.3		154.0		75.6	36.9	27.2

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

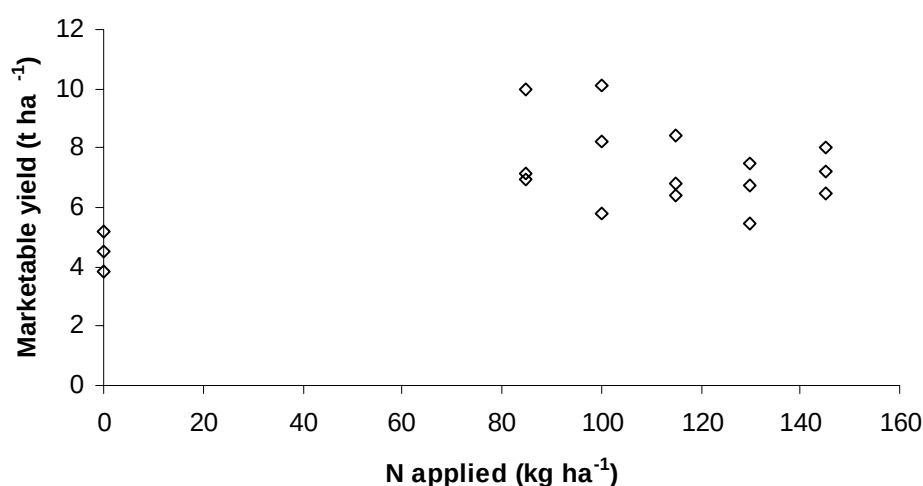
Site reference: 18

Year: 1998

County:	West Sussex	Soil series:	Hook
Grid reference:	TQ 872025	Topsoil texture:	Silty clay loam
		pH:	6.9
Previous crop:	Celery	Available P:	48 mg/l (Index 4)
Current crop:	Winter wheat	Available K:	187 mg/l (Index 2)
	cv. Brigadier	Total N:	0.12 %
Sowing date:	03/10/97		
Harvest date:	01/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.5	7.5	53.2	7.0	22.4	13.9	11.5
85	7.5	12.7	125.8	23.2	20.7		
100	8.6	13.4	137.9	22.4	22.9		
115	7.2	14.2	133.7	32.3	18.1		
130	6.6	11.8	118.5	25.4	18.5		
145	7.2	14.5	151.2	46.2	29.8	16.5	12.5
Farm N/A	N/A				21.1	13.1	9.9

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: Response curve could not be fitted

Site reference: 19

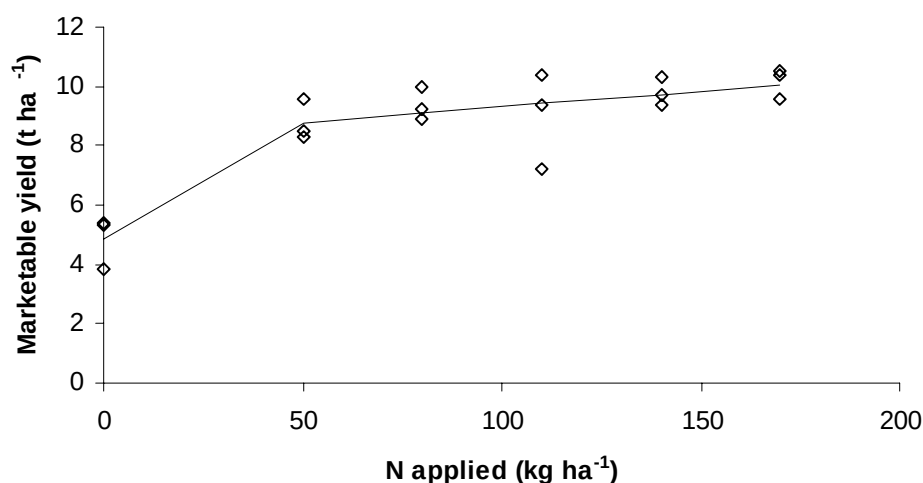
Year: 1998

County:	Warwickshire	Soil series:	Bromsgrove
Grid reference:	SE 311709	Topsoil texture:	Sandy loam
		pH:	6.3
Previous crop:	Winter oilseed rape	Available P:	35 mg/l (Index 3)
Current crop:	Winter wheat	Available K:	87 mg/l (Index 1)
	cv. Caxton	Total N:	0.06 %
Sowing date:	06/10/97		
Harvest date:	15/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.9	7.9	73.4	1.8	25.1	11.0	11.3
50	8.8	13.8	144.6	3.4	19.5		
80	9.4	15.0	185.7	4.8	21.8		
110	9.0	13.8	170.1	4.4	21.1		
140	9.8	14.8	208.6	5.4	20.8		
170	10.2	15.0	239.8	7.1	40.0	15.1	11.1
Farm 210	10.4				28.7	13.8	12.1

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: Optimum above maximum N rate used.

Site reference: 19

Year: 1999

County: Warwickshire
Grid reference: SE 311709

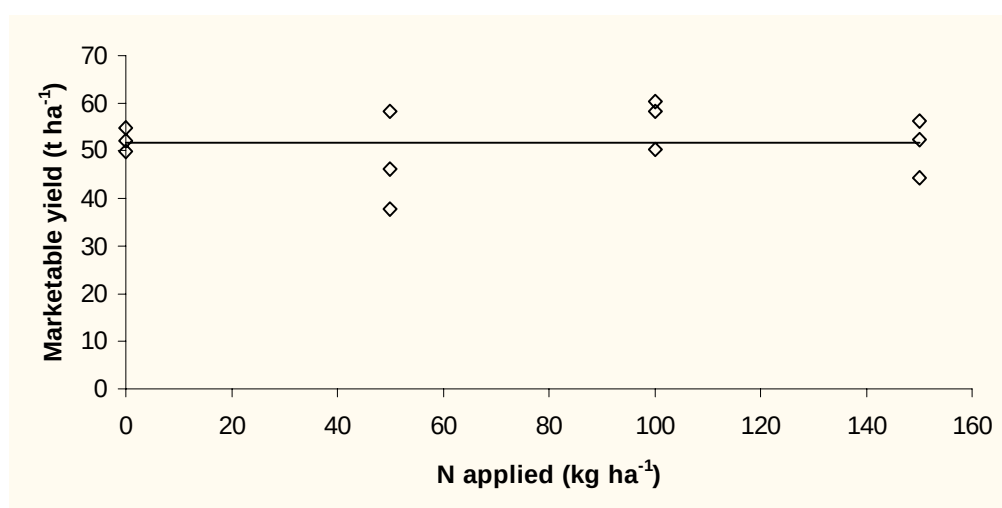
Soil series: Bromsgrove
Topsoil texture: Sandy loam
pH: 6.3
Available P: 35 mg/l (Index 3)
Available K: 87 mg/l (Index 1)
Total N: 0.06 %

Previous crop: Winter wheat
Current crop: Potatoes
cv. Romano
Sowing date: 04/05/99
Harvest date: 19/10/99

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0 (212)	48.5	10.6	196.5	9.8	51.2	35.5	47.9
50 (262)	43.5	9.7	186.3	9.3	55.4		
100 (312)	52.9	11.6	232.1	11.6	77.7		
150 (362)	47.5	10.8	213.4	10.7	111.0	129.2	72.2
Farm 212	50.0						

Comments: Basal N (212 kg N ha⁻¹) had been uniformly applied to the site before N rates were imposed. Originally this had been planned to be only 100 kg N ha⁻¹

Response of total tuber yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No response to additional N application

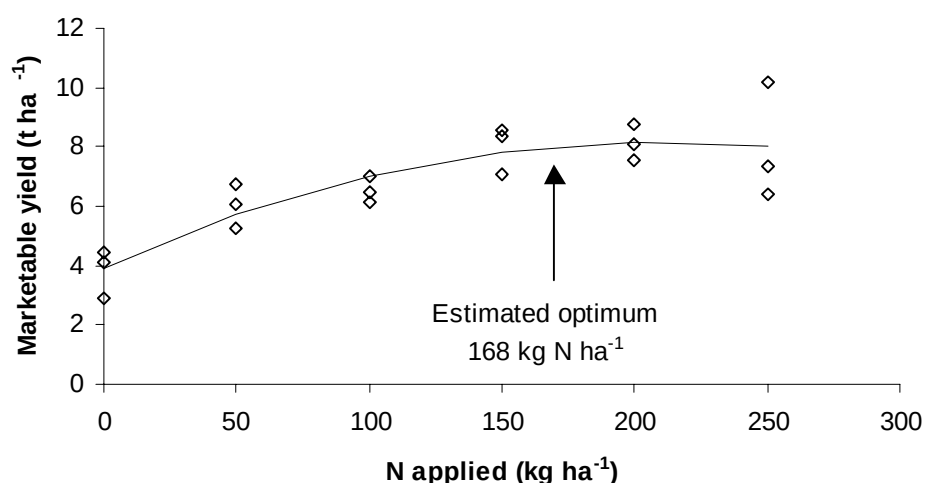
Site reference: 20

Year: 1999

County:	Suffolk	Soil series:	Barrow
Grid reference:	TL 944735	Topsoil texture:	Sandy clay loam
		pH:	7.9
Previous crop:	Sugar beet	Available P:	25 mg/l (Index 2)
Current crop:	Winter wheat	Available K:	137 mg/l (Index 2)
	cv. Consort	Total N:	0.07 %
Sowing date:	03/10/98		
Harvest date:	23/08/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	3.6	4.6	55.5	5.6	28.5	21.8	15.0
50	6.0	8.5	85.0	12.4	35.6		
100	6.6	9.7	105.4	18.7	27.4		
150	8.0	11.1	123.8	23.3	30.9		
200	8.1	10.5	130.8	23.1	34.5		
250	8.0	10.7	132.1	24.2	61.4	35.6	12.0
Farm 166	6.8		113.3		32.3	22.7	15.1

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 21

Year: 1999 (1)

County: Oxfordshire
 Grid reference: SP 613010
 Previous crop: Winter barley
 Current crop: Spinach
 cv. Calata
 Sowing date: 15/04/99
 Harvest date: 28/05/99

Soil series: Dullingham
 Topsoil texture: Sandy clay loam
 pH: 7.6
 Available P: 109 mg/l (Index 6)
 Available K: 363 mg/l (Index 3)
 Total N: 0.18%

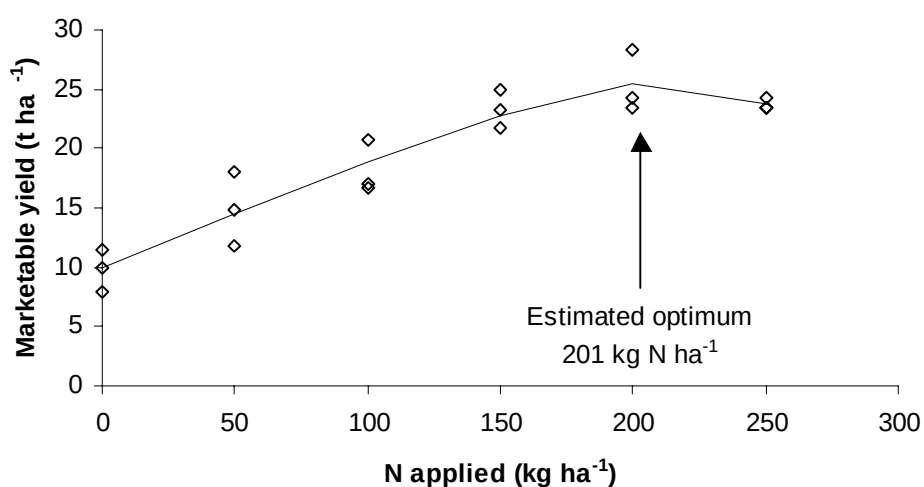
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	9.8	1.23	37.5	8.6	27.9	29.8	22.8
50	14.8	1.68	62.0	15.7	31.9		
100	18.2	1.89	78.0	21.9	44.5		
150	23.3	2.19	112.7	30.1	82.5	43.3	22.7
200	25.3	2.31	127.9	35.1	82.1		
250	23.8	2.23	128.7	36.9	151.9	59.3	26.9

Comments:

Commercial crop ploughed in. Single cut c. 75 mm above ground level.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 21

Year: 1999 (2)

County: Oxfordshire
 Grid reference: SP 613010
 Previous crop: Spinach
 Current crop: Spinach
 cv. RX940284
 Sowing date: 18/08/99
 Harvest date: 23/09/99

Soil series: Dullingham
 Topsoil texture: Sandy clay loam
 pH: 7.6
 Available P: 109 mg/l (Index 6)
 Available K: 363 mg/l (Index 3)
 Total N: 0.18%

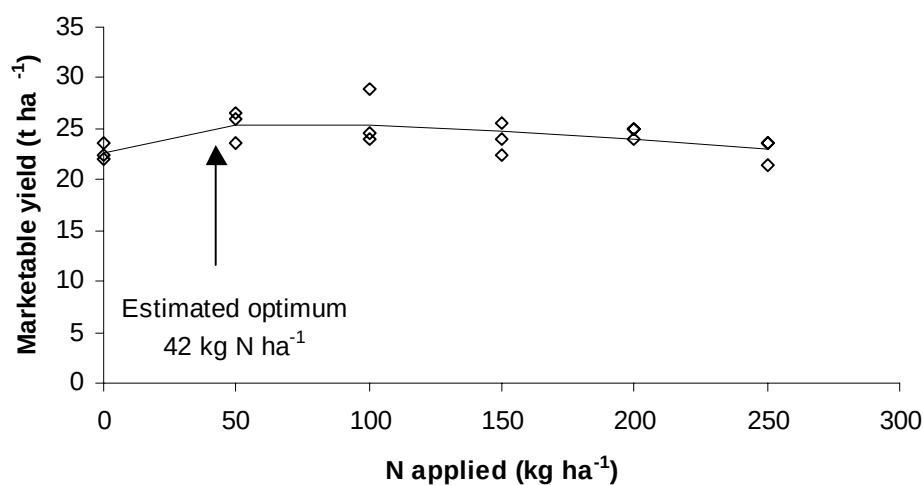
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	22.7	1.91	96.5	25.8	53.9	70.3	54.5
50	25.3	2.06	112.7	29.7	51.1	83.9	
100	25.8	2.10	116.0	30.3	86.6	120.8	
150	24.0	2.07	115.8	32.3	102.0	126.9	61.4
200	24.7	2.07	114.6	30.0	134.3	179.3	
250	22.8	1.99	111.9	31.6	181.6	204.2	80.5

Comments:

Single cut c. 75 mm above ground level.

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 22

Year: 1998

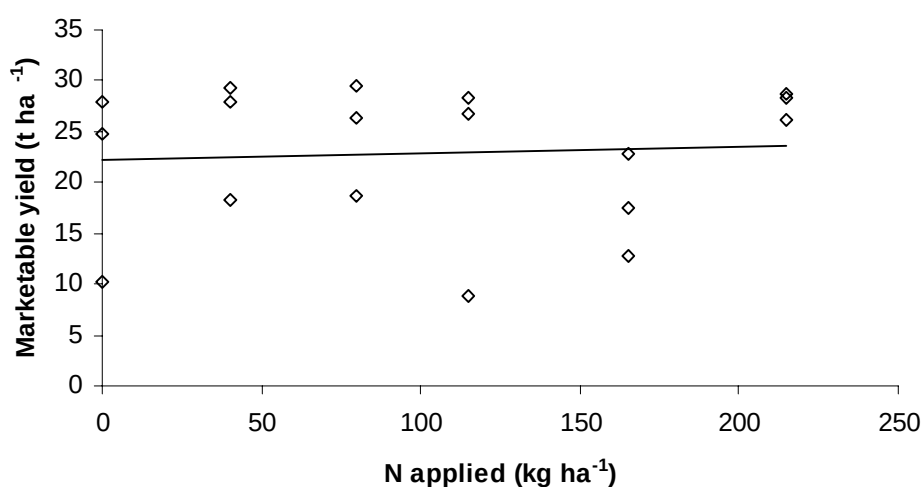
County:	Suffolk	Soil series:	Swaffham Prior
Grid reference:	TL 714720	Topsoil texture:	Sandy loam
		pH:	7.7
Previous crop:	Winter wheat	Available P:	27 mg/l (Index 3)
Current crop:	Red bulb onion	Available K:	131 mg/l (Index 2)
	cv. Red Baron	Total N:	0.09%
Sowing date:	27/02/98		
Harvest date:	27/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	20.9	5.48	102.7	42.8	139.7	59.5	52.3
40	25.1	6.10	108.7	39.7	62.9		
80	24.9	5.97	113.2	39.8	68.8		
115	21.3	5.79	112.7	41.1	91.6	66.8	86.1
165	17.7	5.43	107.1	40.8	127.2		
215	27.7	6.12	120.9	37.7	132.4	91.1	61.3

Comments:

Crop severely damaged by hail 09/04/98. Marketable bulbs 50-80 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to applied N.

Site reference: 22

Year: 1999

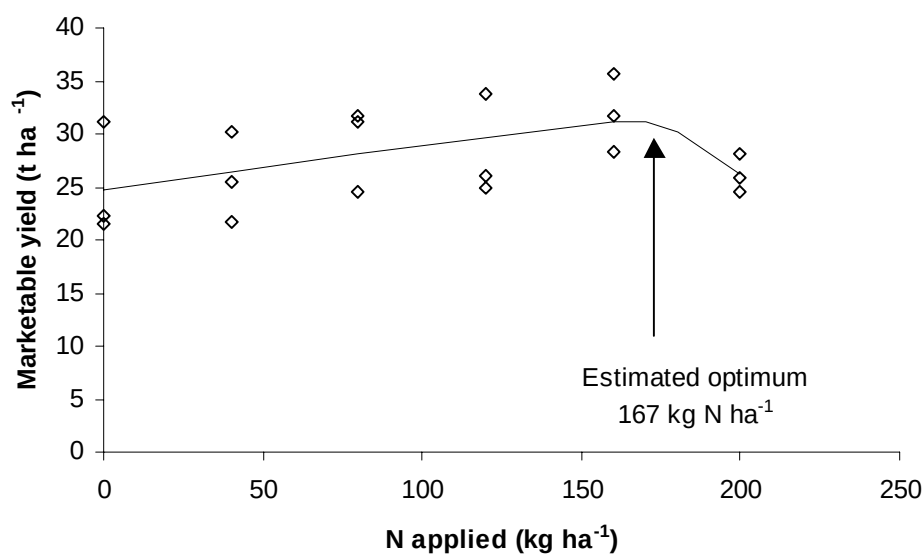
County:	Suffolk	Soil series:	Swaffham Prior
Grid reference:	TL 714720	Topsoil texture:	Sandy loam
		pH:	7.7
Previous crop:	Red bulb onion	Available P:	27 mg/l (Index 3)
Current crop:	Parsnip	Available K:	131 mg/l (Index 2)
	cv. Arrow	Total N:	0.09%
Sowing date:	22/05/99		
Harvest date:	12/01/00		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	25.0	8.34	74.6		12.0	5.9	5.3
40	25.8	7.71	81.8		12.4		
80	29.2	8.60	99.6		12.4		
120	28.2	8.61	98.7		14.3		
160	31.9	8.54	110.4		13.2	13.0	29.4
200	26.2	8.46	111.3		11.7	14.4	40.5

Comments:

Marketable roots 30-65 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 23

Year: 1998

County: Lincolnshire
 Grid reference: TF 305306
 Previous crop: Winter wheat
 Current crop: Bulb onion (sets)
 cv. Sturon
 Planting date: 24/02/98
 Harvest date: 11/08/98

Soil series: Wisbech
 Topsoil texture: Silt loam
 pH: 7.7
 Available P: 49 mg/l (Index 4)
 Available K: 213 mg/l (Index 2)
 Total N: 0.12%

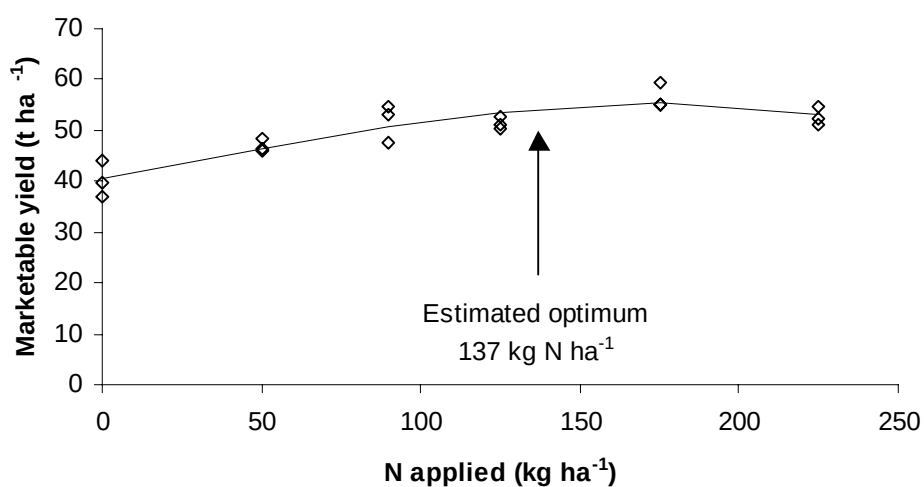
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	40.2	8.24	81.1	15.0	35.9	22.5	27.0
50	47.1	9.46	100.0	18.3	38.0		
90	51.8	9.94	122.6	23.9	36.2		
125	51.4	9.80	142.7	22.2	43.4	25.7	29.3
175	56.4	10.57	157.7	27.0	63.7		
225	52.7	10.12	163.1	28.4	69.1	36.8	33.2

Comments:

Marketable bulbs 50-80 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 24

Year: 1998

County: Lincolnshire
 Grid reference: TF 279356
 Previous crop: Summer cabbage
 Current crop: Calabrese
 cv. Marathon
 Planting date: 23/04/98
 Harvest date: 27/07/98

Soil series: Tanvats
 Topsoil texture: Silt loam
 pH: 7.7
 Available P: 55 mg/l (Index 4)
 Available K: 319 mg/l (Index 3)
 Total N: 0.06%

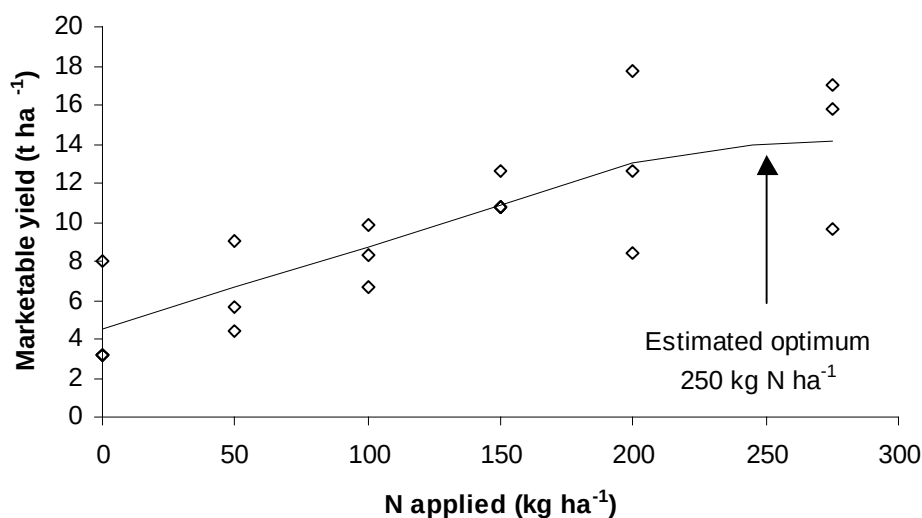
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.8	2.26	60.9	42.0	64.1	32.7	40.8
50	6.4	2.83	65.0	42.2	28.8		
100	8.3	3.16	84.1	50.9	31.2		
150	11.4	3.75	106.2	59.1	32.8	32.0	65.7
200	12.9	4.41	129.7	70.7	34.0		
275	14.2	4.55	146.9	84.1	39.4	39.3	54.9

Comments:

Marketable heads class I >75 mm diameter, trimmed to 150 mm head plus stem length

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 25

Year: 1998

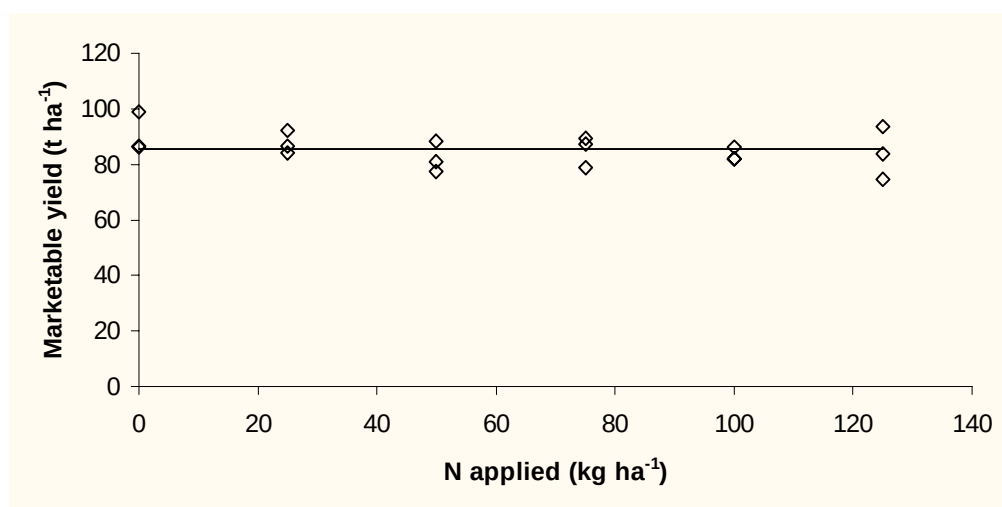
County:	Norfolk	Soil series:	Newport
Grid reference:	TF 782362	Topsoil texture:	Loamy sand
		pH:	8.0
Previous crop:	Maincrop potato	Available P:	45 mg/l (Index 3)
Current crop:	Carrot	Available K:	318 mg/l (Index 3)
	cv. Bergen	Total N:	0.03%
Sowing date	08/05/98		
Harvest date:	15/10/98 (pre-strawing) 20/01/00 (commercial)		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	90.6	9.64	108.2		30.1	15.7	11.8
25	87.6	9.81	100.9		22.5		
50	82.3	9.63	110.0		19.6		
75	85.0	9.55	107.1		19.6	15.6	11.0
100	83.5	9.68	108.0		20.5		
125	83.9	9.81	114.9		21.0	20.9	15.7

Comments:

Marketable roots at commercial harvest 25-40 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to applied N.

Site reference: 26

Year: 1998

County:	Lancashire	Soil series:	Sollom
Grid reference:	SD 372122	Topsoil texture:	Loamy sand
		pH:	7.1
Previous crop:	Crisp lettuce	Available P:	80 mg/l (Index 5)
Current crop:	Leek	Available K:	71 mg/l (Index 1)
	cv. Farinto	Total N:	0.17%
Sowing date	17/04/98		
Harvest date:	19/01/99		

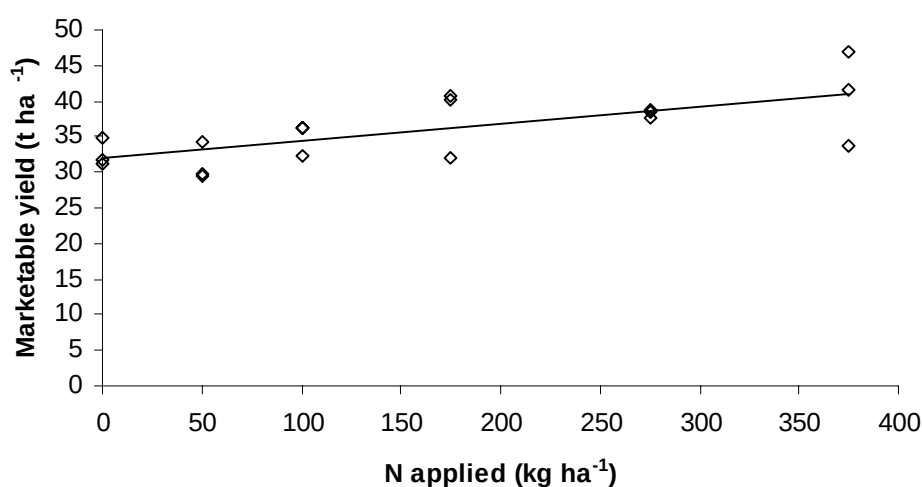
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	32.6	5.49	138.5	39.0	61.2	51.4	19.8
50	31.1	6.08	137.6	48.5	47.5		
100	34.9	6.17	160.9	57.6	35.1	25.6	14.9
175	37.6	6.65	186.1	68.6	24.2		
275	38.5	6.31	247.3	96.3	26.8		
375	40.8	7.20	272.1	120.4	42.9	38.5	10.6

Comments:

Marketable - 15-50 mm shank diameter, trimmed to 350 mm length

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: No optimum could be fitted

Site reference: 26

Year: 1999

County: Lancashire
 Grid reference: SD 372122
 Previous crop: Leek
 Current crop: Crisp lettuce
 cv. Calgary
 Planting date: 27/06/99
 Harvest date: 05/08/99

Soil series: Sollom
 Topsoil texture: Loamy sand
 pH: 7.1
 Available P: 80 mg/l (Index 5)
 Available K: 71 mg/l (Index 1)
 Total N: 0.17%

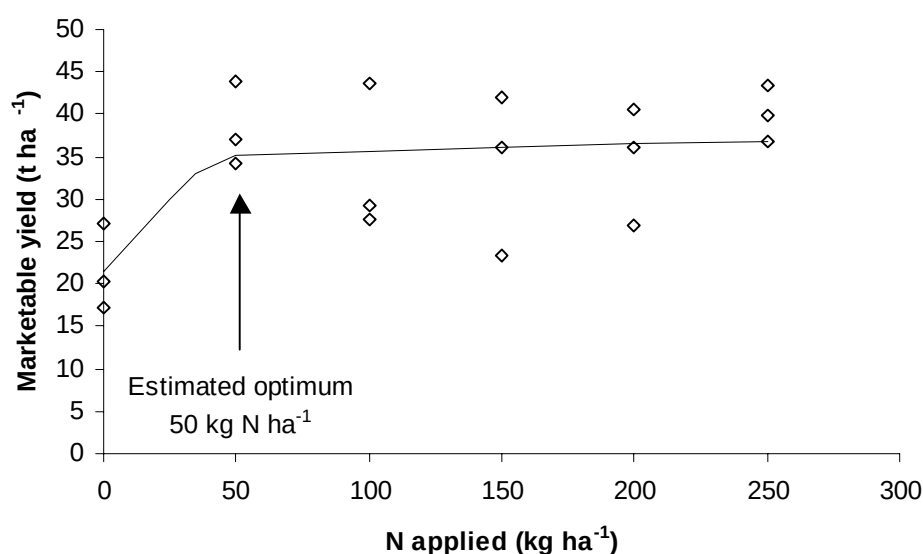
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	21.5	2.45	83.5	57.9	24.6	22.4	24.3
50	38.4	2.59	104.2	56.6	83.1		
100	33.5	2.57	101.2	55.4	187.9		
150	33.8	2.39	98.5	53.1	137.8	24.7	21.8
200	34.4	2.48	99.1	50.7	227.1		
250	40.0	2.36	106.3	50.3	156.5	45.0	27.0

Comments:

Marketable - trimmed heads > 450 g

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 27

Year: 1998

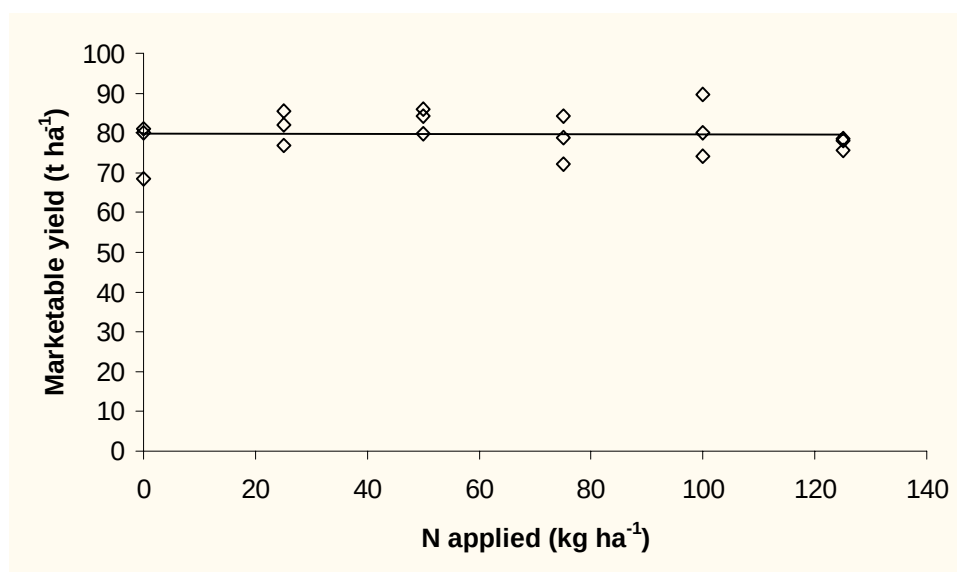
County:	Lancashire	Soil series:	Sollom
Grid reference:	SD 448137	Topsoil texture:	Humose loamy sand
		pH:	5.3
Previous crop:	Winter wheat	Available P:	42 mg/l (Index 3)
Current crop:	Carrot	Available K:	163 mg/l (Index 2)
	cv. Nerac	Total N:	0.39%
Sowing date	27/04/98		
Harvest date:	10/03/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	76.5	8.29	95.8		39.4	35.9	16.9
25	81.5	8.83	109.8		40.1		
50	83.4	8.73	111.8		38.6		
75	78.4	8.83	121.9		48.1	37.7	20.6
100	81.2	8.80	133.6		43.4		
125	77.4	8.62	131.9		49.0	45.1	16.0

Comments:

Marketable roots at commercial harvest 25-40 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Comments: No significant response to applied N

Site reference: 28

Year: 1998

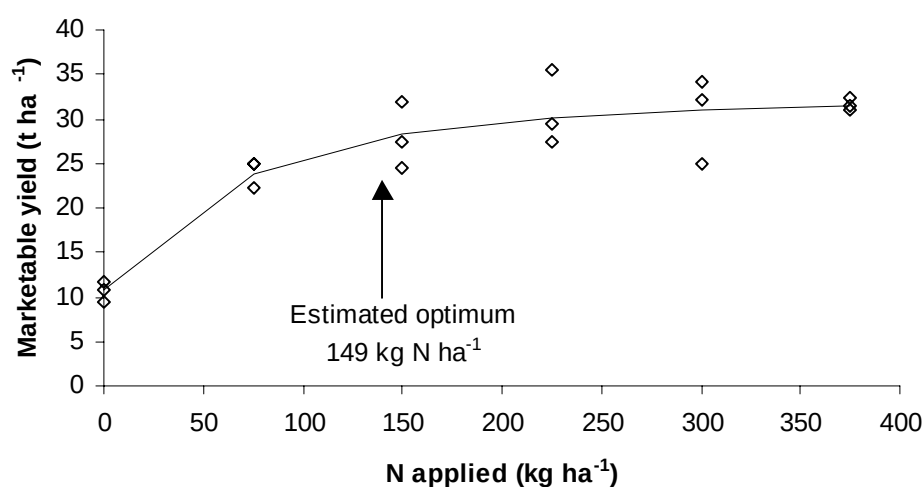
County:	Lancashire	Soil series:	Wisbech
Grid reference:	SD 432248	Topsoil texture:	Silt loam
		pH:	7.8
Previous crop:	Late summer cauliflower	Available P:	22 mg/l (Index 2)
Current crop:	Late summer cauliflower	Available K:	149 mg/l (Index 2)
	cv. Nautilus	Total N:	0.07%
Planting date	29/05/98		
Harvest date:	02/09/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	10.7	4.02	44.4	57.8	28.3	20.7	31.1
75	24.0	4.77	44.7	82.5	31.6		
150	27.9	4.99	44.9	90.3	31.2	21.9	32.6
225	30.8	5.54	44.8	116.0	100.3		
300	30.5	5.35	45.1	121.2	104.8		
375	31.6	5.73	44.9	141.8	78.8	40.6	30.7

Comments:

Marketable – Class I > 110 mm curd diameter, 3 cuts

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 28

Year: 1999

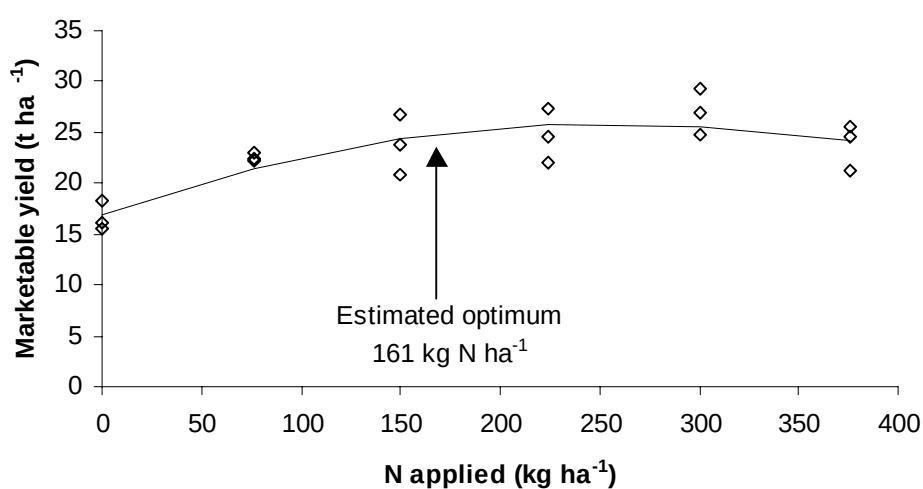
County:	Lancashire	Soil series:	Wisbech
Grid reference:	SD 432248	Topsoil texture:	Silt loam
		pH:	7.8
Previous crop:	Late summer cauliflower	Available P:	22 mg/l (Index 2)
Current crop:	Late summer cauliflower cv. Amsterdam	Available K:	149 mg/l (Index 2)
		Total N:	0.07%
Planting date	02/06/98		
Harvest date:	26/08/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	16.7	5.31	118.0	77.0	26.9	14.5	19.2
75	22.5	5.98	166.6	106.8	60.7		
150	23.8	5.81	179.8	107.8	106.3		
225	24.6	6.22	208.6	127.4	139.6	27.9	27.8
300	27.0	6.35	226.3	140.1	293.0		
375	23.8	5.90	208.3	139.7	235.6	15.8	24.8

Comments:

Marketable – Class I > 110 mm curd diameter, 2 cuts

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 29

Year: 1998

County:	Lancashire	Soil series:	Rufford
Grid reference:	SD 392088	Topsoil texture:	Sandy loam
		pH:	6.0
Previous crop:	Winter wheat	Available P:	31 mg/l (Index 2)
Current crop:	Brussels sprout	Available K:	148 mg/l (Index 2)
	cv. Adonis	Total N:	0.06%
Planting date	16/06/98		
Harvest date:	09/12/98		

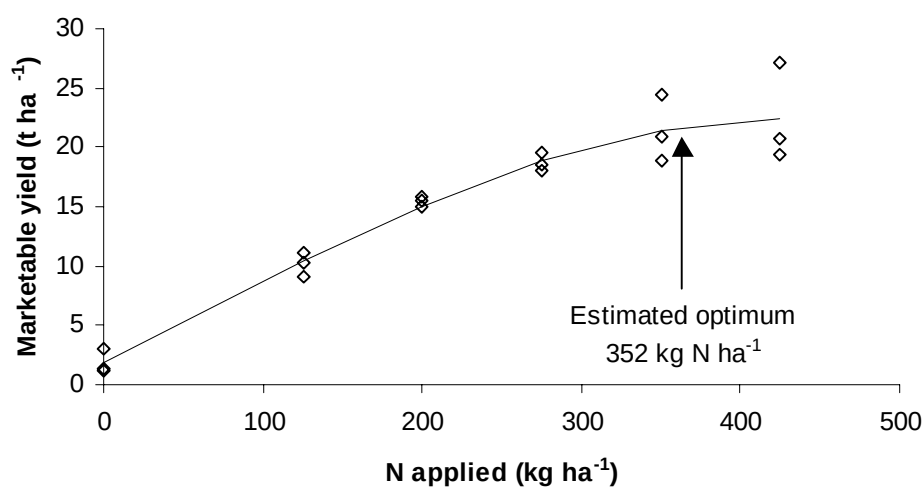
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	1.9	2.73	49.9	36.7	21.5	20.1	20.1
125	10.2	5.36	111.0	53.3	22.6		
200	15.5	7.24	174.1	84.4	20.3		
275	18.7	8.41	222.2	107.9	20.1	18.5	20.9
350	21.5	9.86	296.0	150.3	21.9		
425	22.5	9.87	331.9	160.1	24.3	19.3	16.3

Comments:

Marketable – 10-40 mm diameter sprouts

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Site reference: 30

Year: 1998

County: South Yorkshire
 Grid reference: SE 821023
 Previous crop: Cabbage
 Current crop: Red beet
 cv. Crimson Glow
 Sowing date: 26/05/98
 Harvest date: 23/10/98

Soil series: Romney
 Topsoil texture: Silt loam
 pH: 7.8
 Available P: 5 mg/l (Index 0)
 Available K: 50 mg/l (Index 0)
 Total N: 0.13%

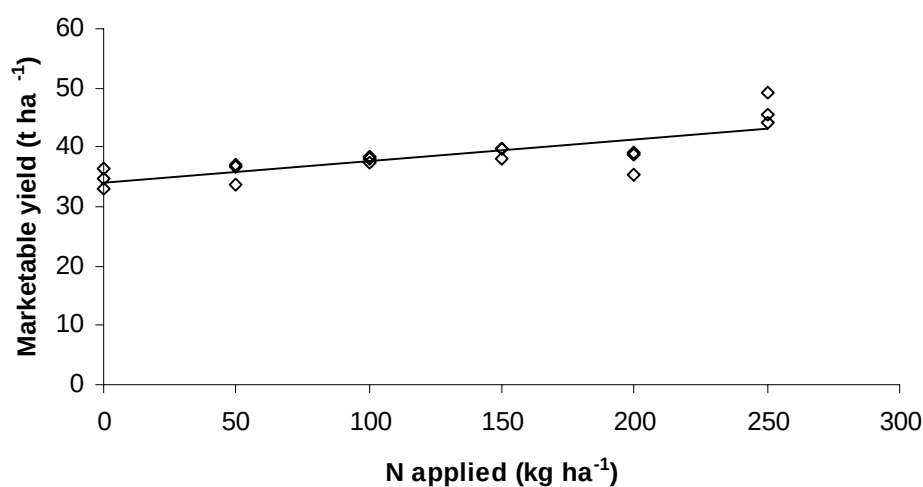
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	34.7	8.54	216.7	99.6	26.5	15.7	12.9
50	35.9	9.20	300.5	137.3	34.6		
100	37.8	9.61	303.0	147.9	27.6		
150	39.2	9.85	300.4	145.4	61.5	23.9	21.3
200	37.8	10.22	302.2	160.0	73.9		
250	46.3	10.89	344.8	170.0	153.8	27.81	21.7

Comments:

Marketable – 25-75 mm diameter beet

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: No optimum could be fitted

Site reference: 30

Year: 1999

County: South Yorkshire
Grid reference: SE 821023

Soil series: Romney
Topsoil texture: Silt loam
pH: 7.8
Available P: 5 mg/l (Index 0)
Available K: 50 mg/l (Index 0)
Total N: 0.13%

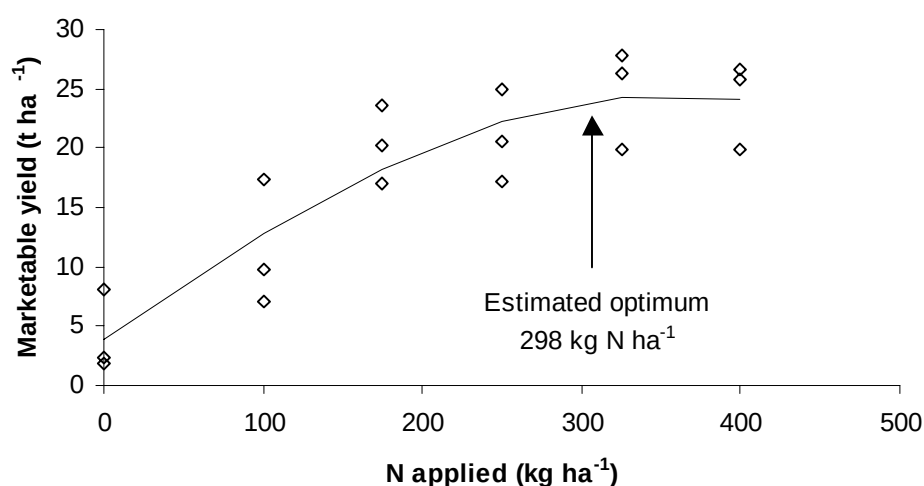
Previous crop: Red beet
Current crop: Savoy cabbage
cv. Siberia
Planting date: 14/07/99
Harvest date: 01/03/00

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	4.1	8.00	186.1	162.7	35.3	20.2	14.7
100	11.4	8.96	259.1	189.3	30.3		
175	20.3	9.59	336.3	207.8	32.8		
250	20.9	9.49	343.7	209.0	38.9	20.5	20.1
325	24.6	10.15	410.3	250.7	38.6		
400	24.1	9.98	411.4	257.8	54.8	57.3	31.7

Comments:

Marketable – close trimmed head weight >500 g, single cut

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 31

Year: 1998

County: Lincolnshire
 Grid reference: TF 208372
 Previous crop: Winter wheat
 Current crop: Brussels sprout
 cv. Adonis
 Planting date: 19/05/98
 Harvest date: 14/12/98

Soil series: Wisbech
 Topsoil texture: Silt loam
 pH: 7.5
 Available P: 25 mg/l (Index 2)
 Available K: 154 mg/l (Index 2)
 Total N: 0.10%

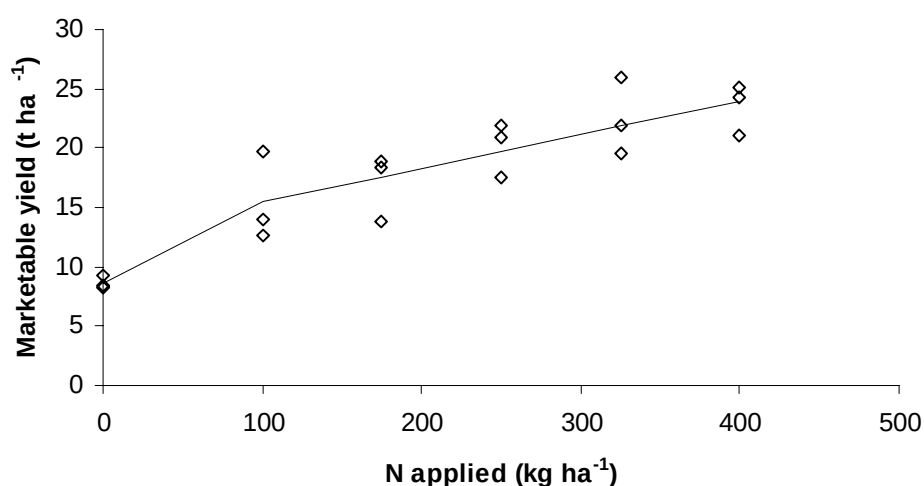
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	8.6	5.76	111.4	68.5	27.0	16.6	10.1
100	15.5	8.77	186.7	108.7	20.9		
175	17.1	9.27	208.4	120.7	24.6		
250	20.1	10.86	270.7	159.7	26.3	17.9	9.2
325	22.5	11.99	325.4	188.8	30.4		
400	23.5	13.20	384.1	229.5	31.7	19.4	12.5

Comments:

Marketable – 10-40 mm diameter sprouts

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comments: Optimum above maximum N rate used.

Site reference: 31

Year: 1999

County:	Lincolnshire	Soil series:	Wisbech
Grid reference:	TF 208372	Topsoil texture:	Silt loam
		pH:	7.5
Previous crop:	Brussels sprout	Available P:	25 mg/l (Index 2)
Current crop:	Autumn cauliflower	Available K:	154 mg/l (Index 2)
	cv. Stanley	Total N:	0.10%
Planting date	07/07/99		
Harvest date:	22/10/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate (see comments):

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	3.4	3.90	72.7	64.5	24.3	11.7	13.8
70	9.8	5.17	129.0	101.2	33.3		
140	12.0	5.34	152.0	114.0	35.3		
210	17.0	6.30	233.1	178.0	52.5	19.2	12.0
280	13.6	7.03	237.7	192.7	26.7		
350	16.0	7.19	294.7	243.7	117.6	27.6	16.2

Comments:

Marketable – Class I > 110 mm curd diameter, 2 cuts.

Only one plot replicate harvested because of waterlogging, response curve therefore not fitted.

Site reference: 32

Year: 1998

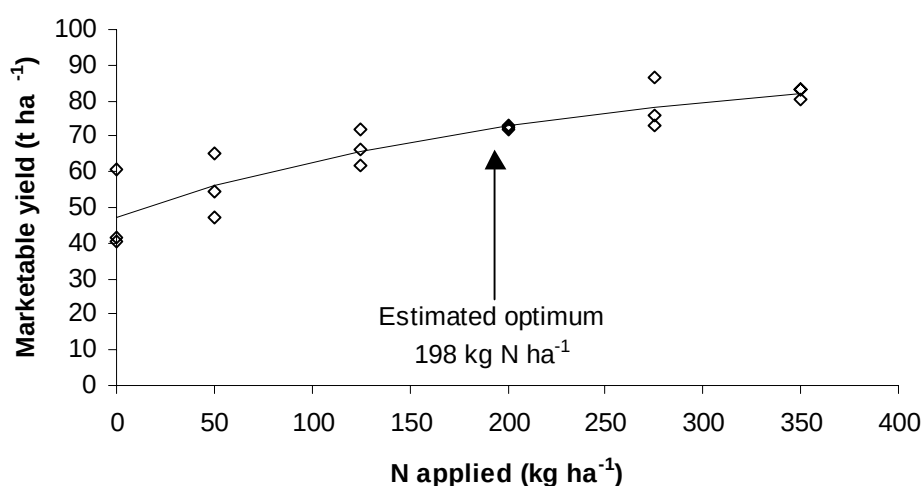
County:	Lincolnshire	Soil series:	Tanvats
Grid reference:	TF 299354	Topsoil texture:	Silt loam
		pH:	7.7
Previous crop:	Brussels sprout	Available P:	41 mg/l (Index 3)
Current crop:	Dutch white cabbage	Available K:	296 mg/l (Index 3)
	cv. Delus	Total N:	0.11%
Planting date	29/05/98		
Harvest date:	14/10/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	47.5	13.32	231.3	136.7	30.6	23.5	17.0
50	55.7	13.65	265.0	146.3	33.8		
125	66.6	14.32	299.6	155.5	50.3		
200	72.4	14.26	368.8	196.8	51.5	28.9	16.6
275	78.3	15.29	395.4	206.0	83.7		
350	82.2	15.39	431.4	227.4	98.8	47.0	18.8

Comments:

Marketable – close trimmed head weight >500 g, single cut

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 33

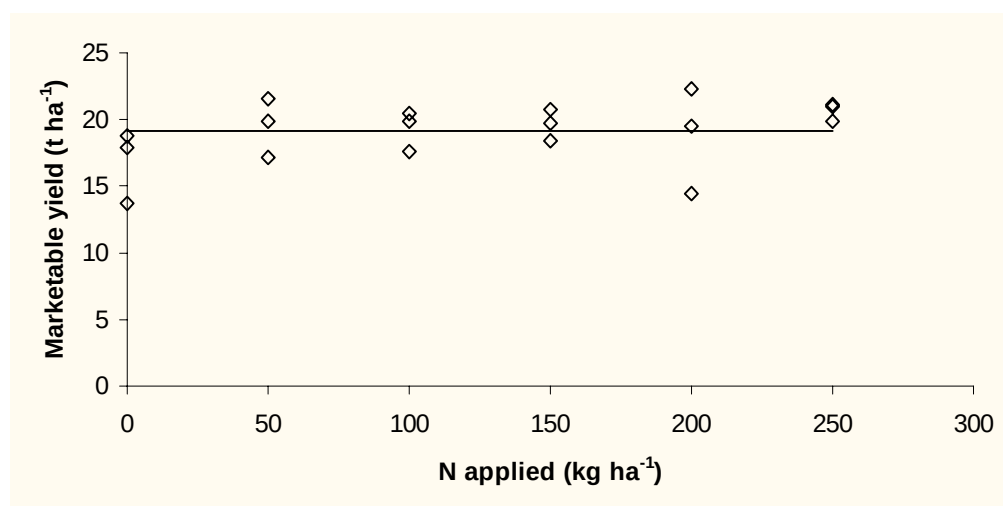
Year: 1998

County:	Warwickshire	Soil series:	Wick
Grid reference:	SP 241574	Topsoil texture:	Sandy loam
		pH:	6.4
Previous crop:	Salad onion (ploughed in)	Available P:	13 mg/l (Index 1)
Current crop:	Dwarf bean	Available K:	132 mg/l (Index 2)
	cv. Nerina	Total N:	0.07%
Sowing date:	23/06/98		
Harvest date:	09/09/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	16.8	4.89	117.6	70.2	41.4	22.3	27.6
50	19.5	5.25	152.6	90.1	47.3		
100	19.3	5.13	161.2	97.2	94.5		
150	19.6	5.25	172.6	105.0	79.1	25.5	30.9
200	18.7	5.09	172.0	106.3	143.8		
250	20.7	5.45	189.0	114.6	149.4	35.0	29.3

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comment: No significant response to applied N

Site reference: 34

Year: 1998

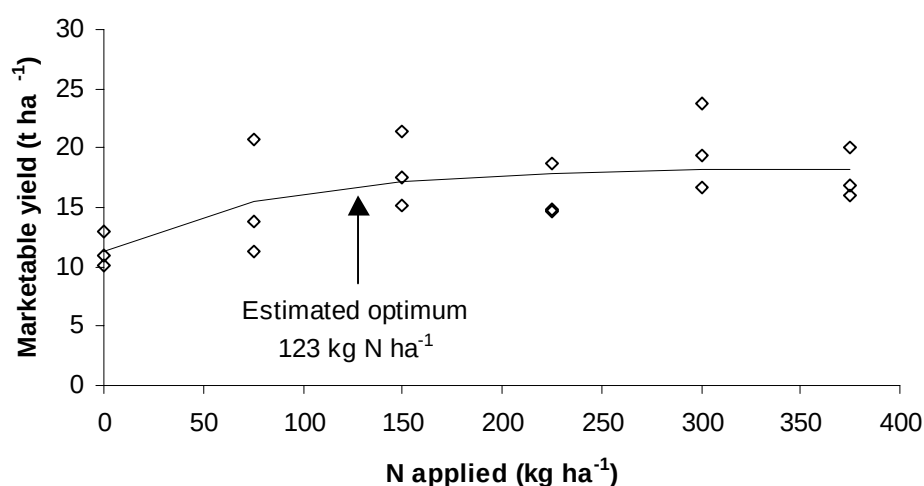
County:	Kent	Soil series:	Coombe
Grid reference:	TQ 286655	Topsoil texture:	Silty clay loam
		pH:	8.1
Previous crop:	Calabrese	Available P:	32 mg/l (Index 3)
Current crop:	Autumn cauliflower	Available K:	447 mg/l (Index 4)
	cv. Dova	Total N:	0.08%
Planting date	08/08/98		
Harvest date:	28/01/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	11.4	3.17	116.2	76.0	34.3	23.4	11.2
75	15.3	3.42	138.0	82.3	29.6		
150	18.0	3.81	164.5	93.3	35.3		
225	16.1	4.00	171.2	109.3	42.3	31.0	36.4
300	19.9	4.24	194.7	117.2	38.6		
375	17.7	4.09	184.0	114.8	41.5	23.9	49.1

Comments:

Marketable – Class I > 110 mm curd diameter, including frost damaged curds, single cut

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 34

Year: 1999

County:	Kent	Soil series:	Coombe
Grid reference:	TQ 286655	Topsoil texture:	Silty clay loam
		pH:	8.1
Previous crop:	Calabrese	Available P:	32 mg/l (Index 3)
Current crop:	Autumn cauliflower	Available K:	447 mg/l (Index 4)
	cv. Tucson	Total N:	0.08%
Planting date	27/07/99		
Harvest date:	10/12/99		

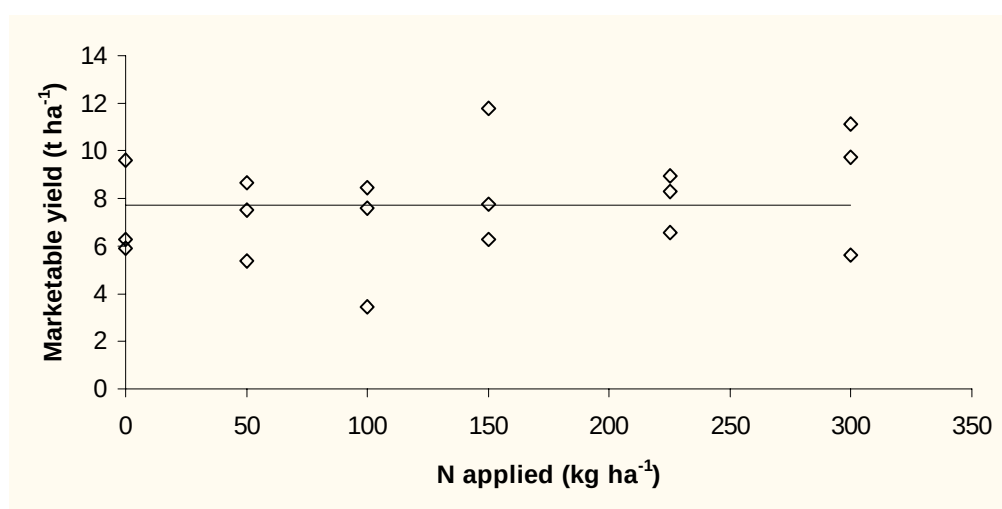
Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	7.3	4.26	147.0	120.1	11.7	8.3	4.4
50	7.2	4.79	170.4	141.6	10.1		
100	6.5	4.50	156.4	130.4	12.0		
150	8.6	4.74	191.5	155.5	20.0	18.4	6.6
225	7.9	4.13	187.8	159.5	29.3		
300	8.8	4.59	217.3	183.0	49.8	34.6	7.5

Comments:

Marketable – Class I > 110 mm curd diameter, single cut, slightly immature to avoid frost damage

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)



Comment: No significant response to added N

Site reference: 35

Year: 1998

County: West Sussex
Grid reference: SZ 841027

Soil series: Hamble
Topsoil texture: Silt loam
pH: 6.6
Available P: 15 mg/l (Index 1)
Available K: 116 mg/l (Index 1)
Total N: 0.10%

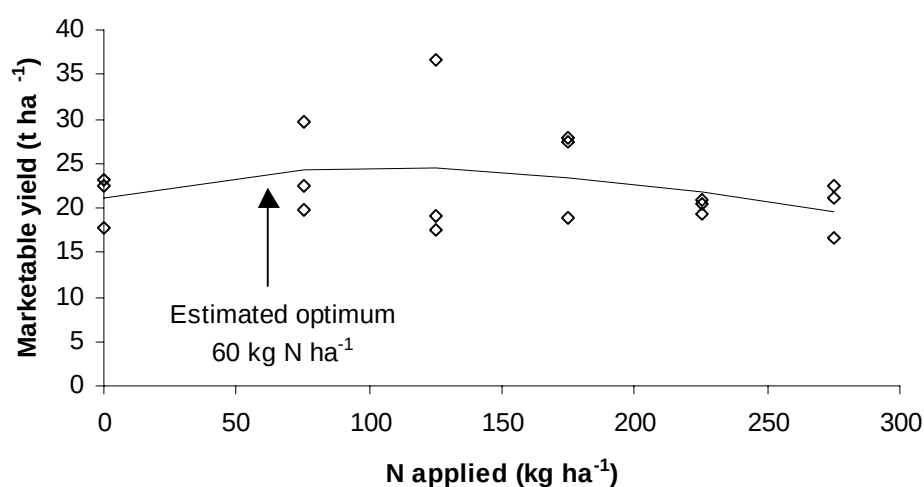
Previous crop: Crisp lettuce
Current crop: Crisp lettuce
cv. Calgary
Planting date: 16/08/98
Harvest date: 07/10/98

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	21.2	2.10	86.4	57.3	36.0	36.9	36.1
75	24.0	2.26	103.6	66.1	73.2		
125	24.4	2.35	112.3	74.6	95.0		
175	24.7	2.26	105.4	66.9	142.7	80.0	42.7
225	20.2	2.12	102.4	70.5	246.5		
275	20.1	2.22	107.1	74.6	292.0	146.4	119.1

Comments:

Marketable - trimmed heads > 350 g, harvested slightly immature to clear trial area before commercial harvest

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 36

Year: 1998

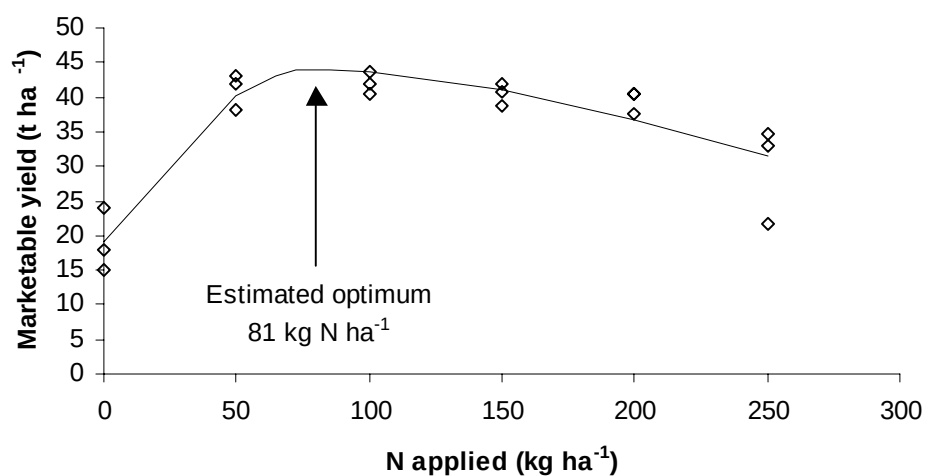
County:	Greater Manchester	Soil series:	Longmoss
Grid reference:	SJ 914944	Topsoil texture:	Peat
		pH:	6.0
Previous crop:	Carrot	Available P:	127 mg/l (Index 6)
Current crop:	Crisp lettuce	Available K:	163 mg/l (Index 2)
	cv. Brandon	Total N:	1.48%
Planting date	17/07/98		
Harvest date:	10/09/98		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	19.0	2.52	66.9	48.2	37.5	35.8	107.9
50	41.0	3.01	106.5	59.1	47.7		
100	42.0	2.91	126.4	70.1	99.8		
150	40.4	2.98	132.2	77.8	115.3	27.1	117.7
200	39.6	2.81	125.2	70.7	141.5		
250	29.8	2.39	109.2	68.8	281.1	80.1	481.3

Comments:

Marketable - trimmed heads > 450 g

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 36

Year: 1999

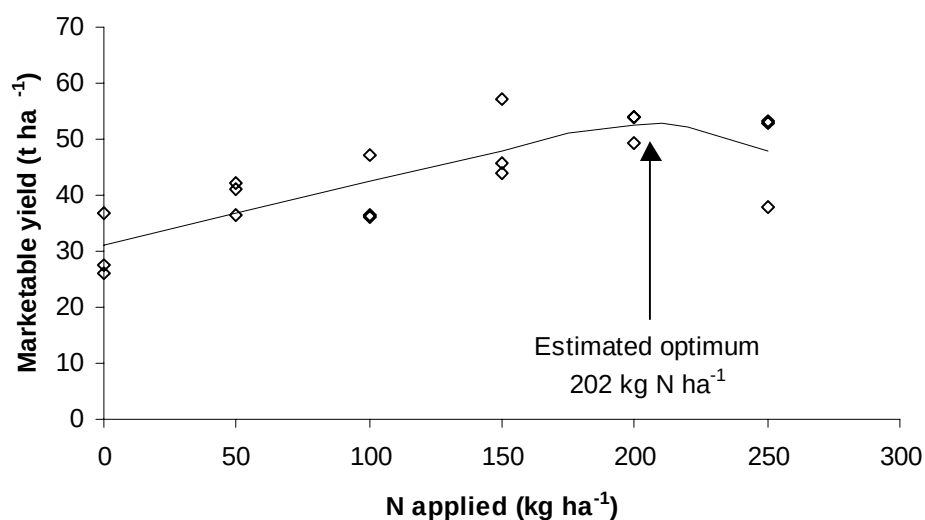
County:	Greater Manchester	Soil series:	Longmoss
Grid reference:	SJ 914944	Topsoil texture:	Peat
		pH:	6.0
Previous crop:	Crisp lettuce	Available P:	127 mg/l (Index 6)
Current crop:	2nd early potato	Available K:	163 mg/l (Index 2)
	cv. Nadine	Total N:	1.48%
Planting date:	03/05/99		
Harvest date:	05/10/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	30.0	6.07	61.1		56.5	24.0	75.0
50	39.9	7.41	93.3		55.0		
100	39.8	7.89	94.4		51.0		
150	49.0	9.34	130.3		49.1	40.1	50.6
200	52.4	10.74	158.5		48.5		
250	48.0	9.51	147.9		68.2	52.7	68.3

Comments:

Harvested after haulm senescence. Marketable – 45-85 mm

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 37

Year: 1998

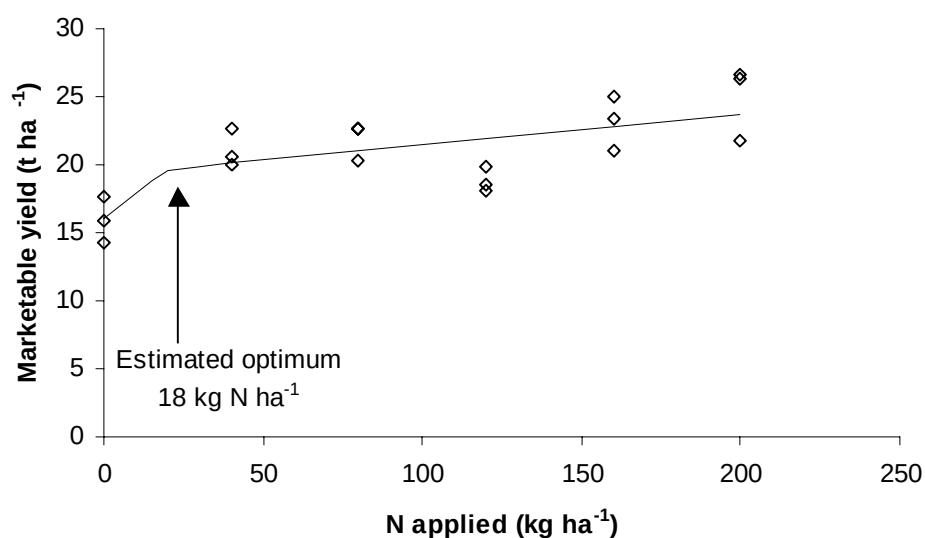
County:	Warwickshire	Soil series:	Whimble
Grid reference:	SP 207531	Topsoil texture:	Clay loam
		pH:	6.6
Previous crop:	Winter wheat	Available P:	11 mg/l (Index 1)
Current crop:	Overwintered salad onion cv. White Lisbon	Available K:	206 mg/l (Index 2)
		Total N:	0.09%
Sowing date	30/08/98		
Harvest date:	28/04/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	16.0	1.83	27.1	4.6	40.0	39.6	23.4
40	21.1	1.95	45.0	10.5	39.7		
80	21.9	1.84	49.8	13.4	60.4		
120	18.9	1.70	66.6	20.9	79.0	44.9	31.3
160	23.1	1.97	85.4	24.8	122.6		
200	24.9	1.93	93.7	24.1	132.6	46.6	28.0

Comments:

Marketable - 8-18 mm diameter, trimmed to 280 mm length

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)

Site reference: 37

Year: 1999

County:	Warwickshire	Soil series:	Whimble
Grid reference:	SP 207531	Topsoil texture:	Clay loam
		pH:	6.6
Previous crop:	Overwintered salad onion	Available P:	11 mg/l (Index 1)
Current crop:	Salad onion	Available K:	206 mg/l (Index 2)
	cv. Laser	Total N:	0.09%
Sowing date	24/06/99		
Harvest date:	16/09/99		

Summary of N response trial results, Mean of 3 replicate plots for each rate:

Rate kg N ha ⁻¹	Marketable yield t ha ⁻¹	Total dry weight yield t ha ⁻¹	N uptake kg N ha ⁻¹	N returned in crop residues kg N ha ⁻¹	Soil mineral N after harvest		
					0-30 cm kg N ha ⁻¹	30-60 cm kg N ha ⁻¹	60-90 cm kg N ha ⁻¹
0	5.9	0.83	21.0	6.3	68.4	47.9	22.0
40	7.0	0.95	23.6	7.5	83.3		
80	8.3	1.02	30.8	9.9	83.2		
120	7.1	1.00	28.3	10.0	76.8	52.6	25.9
160	8.6	1.07	36.9	12.3	138.1		
200	7.1	0.93	29.2	9.5	136.7	73.1	42.9

Comments:

Marketable - 8-18 mm diameter, trimmed to 280 mm length. Yield low due to cloddy seedbed reducing plant stand

Response of marketable yield (t ha⁻¹) to N applied (kg ha⁻¹)