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ROTHAMSTED
RESEARCH

Collection of Plans for the Rothamsted Long-term Liming Experiment

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Rothamsted Research

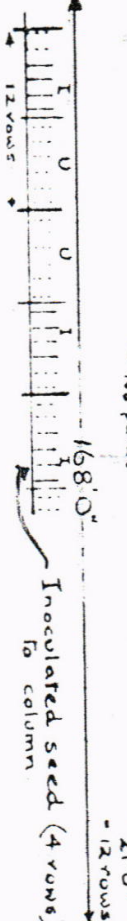
Rothamsted Research (1962-1996) *Default Title* ; Collection Of Plans For The Rothamsted Long-Term Liming Experiment, pp 1 - 29

Rothamsted Long Term Liming

Spring Beans
Sawyers I 1962
1st year.

CWC

LIME	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
P	5.0	5.2	5.1	4.9	4.8	4.8	5.3	5.3	5.5	5.5	5.1	5.4	5.1	5.4	5.1	5.4
PK	4.2	4.2	2	2.1	4.2	6.3	6.3	6.3	4.2	6.3	6.3	4.2	6.3	4.2	6.3	4.2
-K	5.1	5.0	5.1	5.0	5.0	4.9	5.1	5.1	5.4	5.1	5.1	5.4	5.1	5.1	5.4	5.4
PK	5.2	5.2	5.3	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
PK	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
PK	5.2	5.2	5.3	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
PK	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
PK	5.2	5.2	5.3	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
PK	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
PK	5.2	5.2	5.3	5.1	5.1	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2



TREATMENTS per acre

0 1 2 3
- 2, 4, 6 None, 2, 4, 6 tons CaCO₃ as ground chalk.

- P None, 0.5 cwt P₂O₅ as superphosphate.

- K None, 1.0 cwt K₂O as muriate of potash.

U, I Uninoculated, Inoculated seed

Basal manuring: None

Variety: Spring Tick Sown: Mar 16

Design: 2 blocks of 16 plots each. (Analysis to include co-variance with pH)

Plot area: $\frac{1}{2}(21'0'' \times 60'0'') = 0.0289 \text{ acre}$
0.01446

Harvested: 4 rows at 21" x 60'0"
= 0.0096 acre

ii Simazine weedkiller to be applied.

2 blocks L. 2 v 2 split 2. 2 A 6 2

Rothamsted Long Term Liming Experiment
 Spring Beans
 Sawyers I 2nd year 1963

LL/Be.	1	2	3	4	5	6	7	8
V	V	H	L	V	M	L	L	H
P	K	4	P	P	3	2	H	H
5.0	5.1	7.2	6.1	4.8	6.8	6.3	7.4	7.0
9	10	11	12	13	14	15	16	
M	V	L	L	M	H	H	M	
3	1	2	2	3	4	4	3	
K	-	PK	K	PK	K	PK	P	
6.8	5.0	6.2	6.0	7.0	7.1	7.3	7.0	
17	18	19	20	21	22	23	24	
M	M	M	V	M	L	V	L	
3	3	3	1	3	2	1	2	
K	PK	-	P	P	K	PK	P	
7.0	7.2	7.1	5.0	7.0	6.0	5.1	6.4	
25	26	27	28	29	30	31	32	
L	V	H	H	V	L	H	H	
2	1	4	4	1	2	4	4	
PK	-	K	PK	K	-	P	-	
6.3	5.2	7.3	7.1	5.0	6.0	7.1	7.2	

TREATMENTS per acre
 1 V, L, M, H
 2 None, 2, 4, 8 tons CaCO₃
 3 as ground chalk.
 4 Lime applied at -, 2, 4, 6 tons per acre in 1962. an extra 2 tons p.a. to 'H' in 1963)
 PH of soils after 1962 harvest

P 0.5 cut P₂O₅ as superphosphate
 K 1.0 cut K₂O as muriate of potash.

Basal manuring: None. On Apr. 18. Crop sprayed with simagine, 1lb ai in 40 gal.

Variety: Gartons 308 at 200lb per acre
 Sown: April 8.

Design: 2 blocks of 16 plots each. (Analysis to include co-variance with PH.)

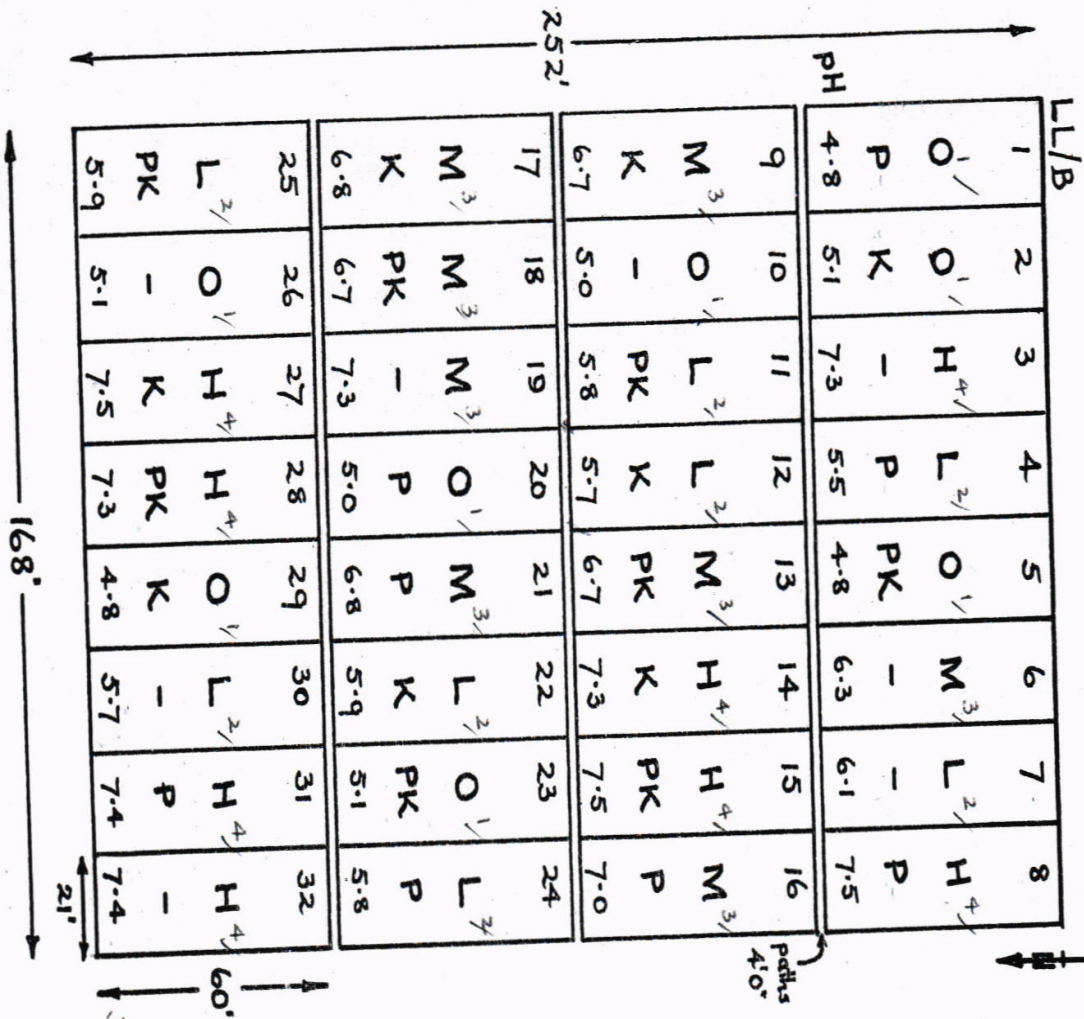
Symbols: V. Very low PH. L. Low
 M. Medium H. High PH.

Plot area: 21'0" x 60'0" = 0.0289 acre
 Harvested: 5 rows @ 21" x 60'0" = 0.0121 acre.



Rothamsted Long Term Liming Barley

SAWYERS 4th year 1965
Sponsor: J. Bolton.



TREATMENTS per acre

O, L, M, H None, 2, 4, 8 tons CaCO₃ applied
as ground chalk (1962-63)
pH of samples taken 14.12.64

In Seedbed - Broadcast.

P 0.5 cut P₂O₅, superphosphate
K 1.0 cut K₂O as muriate of potash

Basal manuring per acre

0.5 cut N as 'Nitro-Chalk' 21 combine drilled.

Variety: Maris Badger Sown: March 17

Design: 2 blocks of 16 plots

Plot area: 21'0" x 60'0" = 0.0289 acre

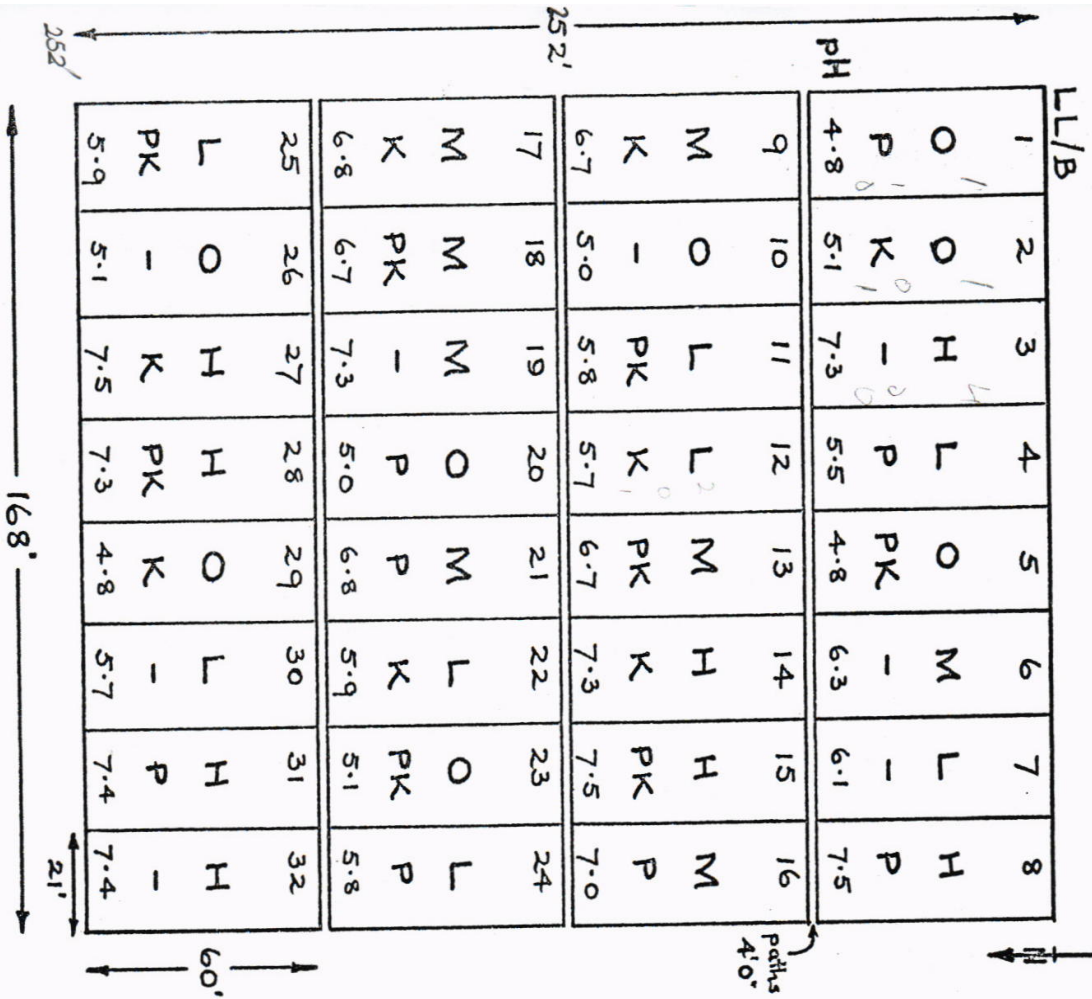
Sown

Ratharnsted Long Term Liming

Barley

SAWYERS 5th year 1966

Sponsor: J. Bolton.



TREATMENTS per acre

O, L, M, H

None, 2, 4, 8 tons CaCO₃ applied as ground chalk (1962-63)

PH

PH of samples taken 14.12.64

In Seedbed - Broadcast.

P

0.5 cwt P₂O₅, superphosphate

K

1.0 cwt K₂O as muriate of potash

Basal manuring per acre

0.5 cwt N as 'Nitro-chalk' 21 combine drilled.

Variety:

Maris Badger Sown: March 14 at 156 lb per acre

Design:

2 blocks of 16 plots

Plot area:

21'0" x 60'0" = 0.0289 acre

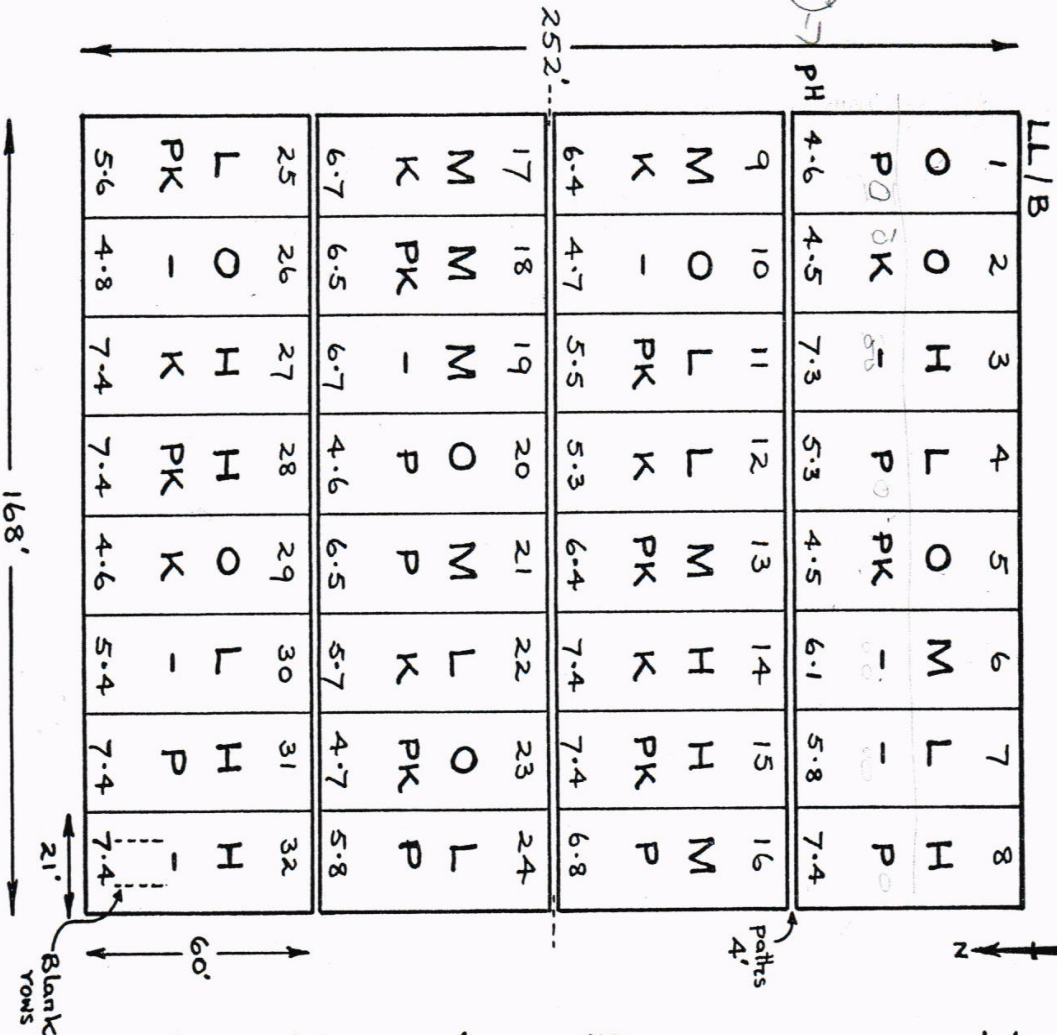
C/3

Rothamsted LONG TERM LIMING

BARLEY

SAWIERS 6th year 1967
Sponsor: J. BOLTON

23



TREATMENTS per acre

O, L, M, H None, 2, 4, 8 tons CaCO₃ applied as ground chalk (1962-63)

PH PH of samples taken 16 Nov 1966

In Seedbed - Broadcast

P 0.5 cwt P₂O₅ as superphosphate
K 1.0 cwt K₂O as muriate of potash

Basal manuring - per acre

0.75 cwt N as 'Nitro-Chalk' 21 combine drilled

Variety: Maris Badger seedrate:

Sown:

Design: 2 blocks of 16 plots

Plot area: 21' x 60' = 0.0289

Harvested: 9' 14" x 60' = 0.0129 acre

1970
(781)

Rothamsted LONG TERM LIMING

Barley

9th year

SAWYERS I

1970 24

Sponsors: J. Bolton, D.B. Slope

ZO/R/CS/110

	01	02	03	04	05	06	07	08
	O	O	H	L	O	M	L	H
	P0	OK	O	P0	PK	O	O	P0
	4.8	4.8	7.8	5.3	4.7	6.0	5.8	7.7
	09	10	11	12	13	14	15	16
	M	O	L	L	M	H	H	M
	OK	O	PK	OK	PK	OK	PK	P0
	6.5	4.8	5.6	5.4	6.5	7.7	7.8	6.9
	17	18	19	20	21	22	23	24
	M	M	M	O	M	L	O	L
	OK	PK	O	P0	P0	OK	PK	P0
	6.9	6.8	6.6	5.0	6.5	5.7	5.1	5.9
	25	26	27	28	29	30	31	32
	L	O	H	H	O	L	H	H
	PK	O	OK	PK	OK	O	P0	O
	5.6	5.0	7.7	7.6	4.8	5.3	7.6	7.8



TREATMENTS, per acre

O, L, M, H None, 2, 4, 8 tons CaCO₃ as ground chalk (1962-63)

PH pH of samples taken Dec. 1968

In seedbed - applied broadcast

P 0.5 cwt P₂O₅ as superphosphate

K 1.0 cwt K₂O as muriate of potash

Basal manuring, per acre

0.75 cwt N as 'Nitro-Chalk' 21 combine drilled.

Variety: Julia

sown at 140 lb per acre on 28 March.

Design: 2 blocks of 16 plots

Plot area: 21' x 60' = 0.0289 acre

Harvested: 9'4" x 60' = 0.0129 acre

Note: In 1969 the land was fallowed and subsoiled (5 Aug)

Rotamsted LONG TERM LIMING

Barley 10th year

SAWYERS I 1971

Sponsors: J Bolton, D.B. Slope

71/R/CS/10

01	02	03	04	05	06	07	08
O	O	H	L	O	M	L	H
PK	PK	o	P ^o	PK	o	o	P ^o
4.5	4.6	7.7	4.8	4.4	5.2	5.2	7.2
PH	PH						
09	10	11	12	13	14	15	16
M	O	L	L	M	H	H	M
OK	o	PK	OK	PK	OK	PK	P ^o
6.2	4.3	5.6	5.0	6.1	7.5	7.3	6.3
PH							
17	18	19	20	21	22	23	24
M	M	M	O	M	L	O	L
OK	PK	-	O	P ^o	OK	O	P ^o
6.5	6.1	6.2	4.6	5.8	5.3	4.7	5.5
PH							
25	26	27	28	29	30	31	32
L	O	H	H	O	L	H	H
PK	-	OK	PK	OK	o	P ^o	o
5.4	4.6	7.6	7.3	4.4	5.1	7.2	7.3

252'

168'

No paths

Blank rows

21'

60'

Paths 4'

N

TREATMENTS per acre (hectare)

O,L,M,H

None, 2, 4, 8 tons (none, 5, 10, 20 tonnes)
CaCO₃ as ground chalk (1962-63)

PH

PH of soil samples taken 28 Sep 1970

In Seedbed - applied broadcast

P

0.5 cwt (63kg) P₂O₅ as superphosphate

K

1.0 cwt (125kg) K₂O as muriate of potash

Basal manuring, per acre (hectare)

0.75 cwt (94kg) N as 'Nitro-chalk' 21 combine drilled.

Variety: Tullia

Sown at 140lb per acre (157 kg/ha) on 10th March

Design: 2 blocks of 16 plots

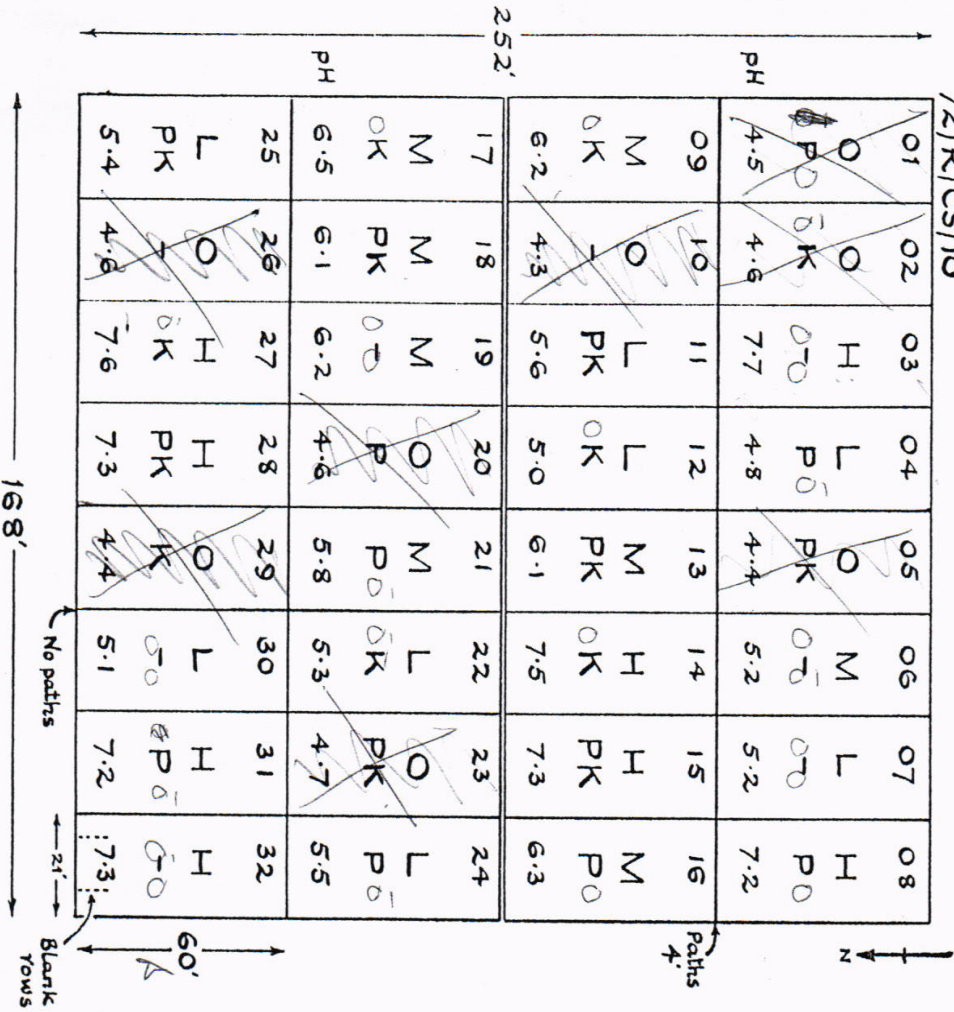
Plot area: 21' x 60' = 0.0289 acre (0.012 ha)

Harvested: 9'4" x 60' = 0.0129 acre (0.0052 ha)

Previous crops: Fallow 1969, Barley 1970

Rothamsted LONG TERM LIMING Barley
11th Year

SAWYERS I 1972 24
Sponsors: J. Bolton, D. B. Slope



TREATMENTS per acre (hectare)

O.L.M.H None, 2, 4, 8 tons (none, 5, 10, 20 tonnes)
CaCO₃ as ground chalk (1962-63)

PH PH of soil samples taken 28 Sep 1970

In Seedbed - applied broadcast

P 0.5 cwt (63 kg) P₂O₅ as superphosphate
K 1.0 cwt (125 kg) K₂O as muriate of potash

Basal manuring, per acre (hectare)

0.75 cwt (94 kg) N as 'Nitro-Chalk' 2:1 combine drilled.

Variety: Tulia seed dressed with 'Millstem'.

Sown at 140lb per acre (157 kg/ha): 20 March

Design: 2 blocks of 16 plots

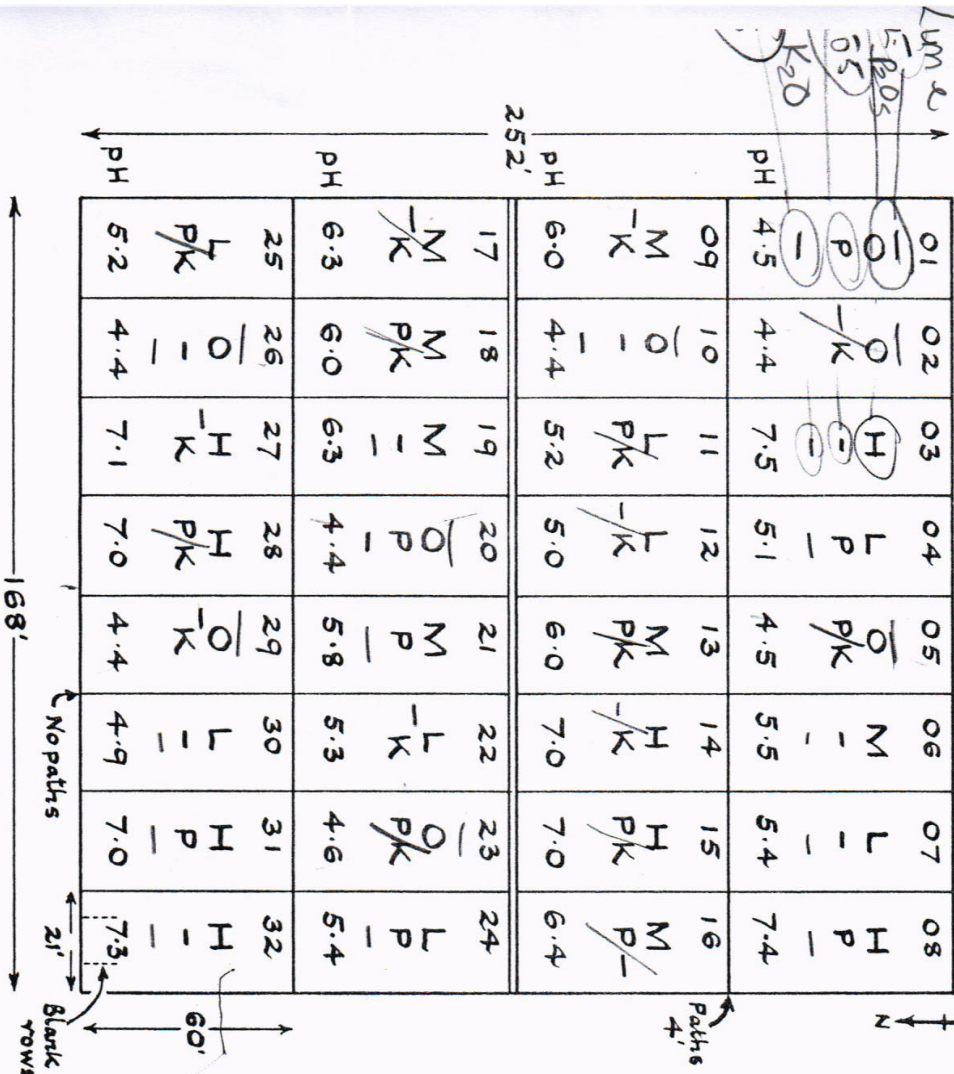
Plot area: 21' x 60' = 0.0289 acre (0.012 ha)

Harvested: 9'4" x 60' = 0.0129 acre (0.0052 ha)

Previous crops: Fallow 1969, Barley 1970, 1971

Rothamsted LONG TERM LIMING

73/R/CS/10



Barley

SAWYERS 12th Year 1973
Sponsors: J. Bolton, D.B. Slope

TREATMENTS per acre (hectare)

O, L, M, H None, 2, 4, 8 tons (-1/5, 10, 20 tonnes)
CaCO₃ as ground chalk (1962-63)

PH PH of soil samples taken Nov. 1972

In Seedbed - applied broadcast

P 0.5 cwt (63 kg) P₂O₅ as superphosphate
K 1.0 cwt (125 kg) K₂O as muriate of potash

Basal manuring, per acre (hectare)

0.75 cwt (94 kg) N as 'Nitro-Chalk' 25
combine drilled

Variety: Julia - seed dressed with ethirimol

Sown at 140 lb (157 kg/ha) on 12 Nov. 1973

Design: 2 blocks of 16 plots

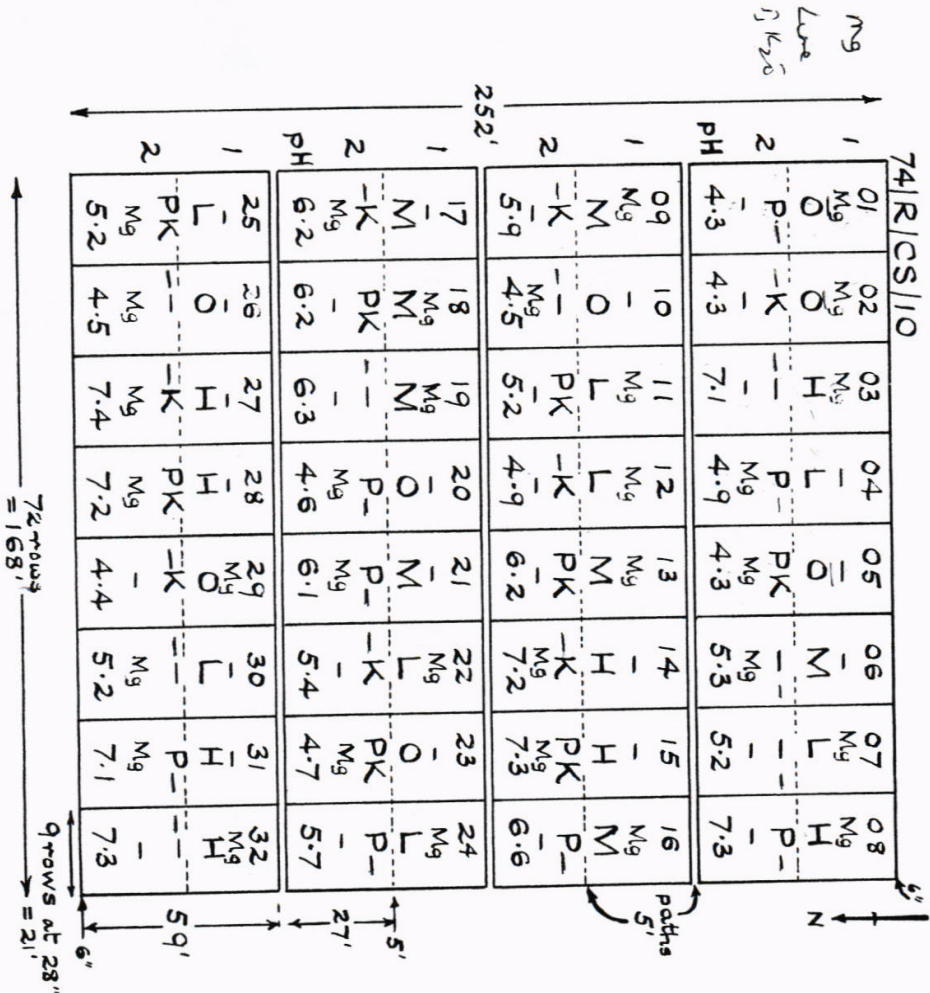
Plotted area: 21' x 60' = 0.0289 acre (0.012 ha)

Harvested: 9'4" x 60' = 0.0129 acre (0.0052 ha)

Previous crops: Fallow 1969, Barley 1970, 1971, 1972

Rothamsted LONG TERM LIMING Potatoes

SAWYERS 13th Year 1974
Sponsor : J. Bolton



TREATMENTS per acre (hectare)

Whole Plots

O, L, M, H None, 2, 4, 8 tons (-, 5, 10, 20 tonnes)
CaCO₃ as ground chalk (1962-63)
PH of soil samples taken Oct 1973

P 1.0 cwt (126 kg) P₂O₅ as superphosphate } Applied broadcast in seedbed
K 1.5 cwt (188 kg) K₂O as muriate of potash }

Half Plots

-, Mg None, 100 lb (112 kg) Mg as sulphate of magnesia (10% Mg)

Basal manuring per acre (hectare)
670 lb (750 kg) Nitro-chalk 25 broadcast before planting

Variety: Pentland Crown

Design: 2 blocks of 16 plots split into 2

Plot area: 21' x 59' = 0.0284 acre (0.0115 ha)
harvested: 4 rows x 27' = 9'4" x 27' = 0.0058 acre (0.0023 ha)

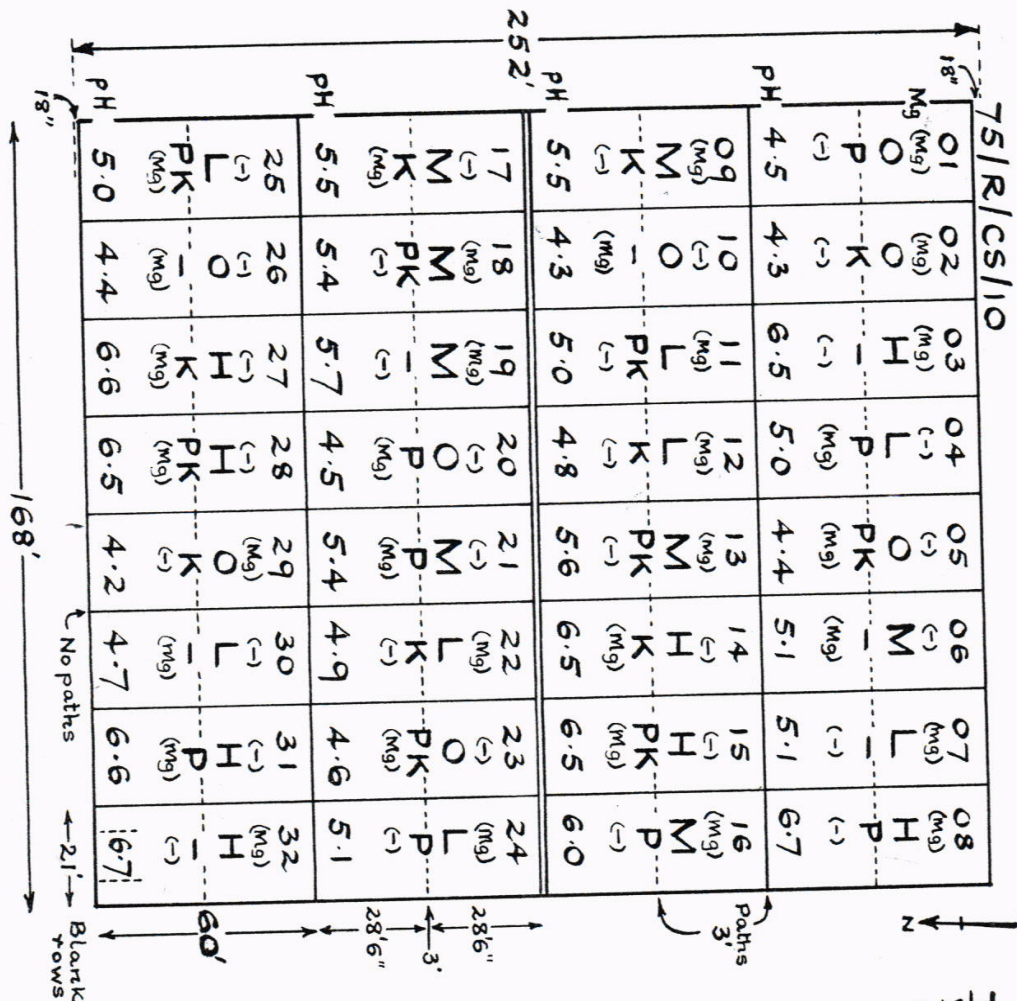
Previous Cropping:
1962-64 spr. beans, 1965-67 barley,
1968 potatoes, 1969 fallow, 1970-73 barley

SA

Rothamsted LONG TERM LIMING

Spring Oats

SAVYERS I 14th Year 1975
Sponsor: J. Bolton



TREATMENTS per acre (hectare)

Whole Plots

O, L, M, H None, 2, 4, 8 tons (-5, 10, 20 tonnes) CaCO₃ as ground chalk (1962-63)

PH pH of soil sample taken Jan 1975

P 0.5cwt (63 kg) P₂O₅ as superphosphate broadcast

K 1.0cwt (125 kg) K₂O as muriate of potash in seedbed

Half Plots, Mg residues.

- , Mg None, 100lb (112kg) Mg to potatoes 1974

Basal manuring, per acre (hectare)
280 lb (314kg) Nitro-chalk 25

Variety: Marrod at 180lb/a (202 kg/ha)

Design: 2 blocks of 16 plots split into 2

Plot area: 21' x 60' = 0.029 acre (0.0117ha)

Sub-plot harvested: 9'4" x 28'6" = 0.0061 acre (0.00246 ha)

Previous Cropping

1962-64 Spr. beans, 1965-67 barley, 1968 potatoes
1969 fallow, 1970-73 barley 1974 potatoes

Rothamsted LONG TERM LIMING

76/R/CS/110

	01	02	03	04	05	06	07	08
PH	4.5	4.3	6.5	5.0	4.4	5.1	5.1	6.7
1	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg
1	-P	-K	-H	-P	-P/K	-M	-L	-H
2	09	10	11	12	13	14	15	16
PH	4.5	4.3	5.0	4.8	5.6	6.5	6.5	6.0
1	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg
1	-M	-O	-P/K	-L	-P/K	-K	-H	-P
2	17	18	19	20	21	22	23	24
PH	5.5	4.3	5.0	4.8	5.6	6.5	6.5	6.0
1	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg
1	-M	-M	-M	-O	-M	-L	-P/K	-P
2	25	26	27	28	29	30	31	32
PH	5.5	5.4	5.7	4.5	5.4	4.9	4.6	5.1
1	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg
1	-P/K	-O	-H	-H	-O	-L	-H	-H
2	5.0	4.4	6.6	6.5	4.2	4.7	6.6	6.7
	Mg	Mg	Mg	Mg	Mg	Mg	Mg	Mg

Sown by Nordstern drill in 8" rows

168'

No paths

21' rows at 8"

Spr. Oilseed Rape
15th year

SAWYERS I 1976²³
Sponsor: J. Bolton

TREATMENTS per acre (hectare)

Whole Plots
O, L, M, H None, 2, 4, 8 tons (-, 5, 10, 20 tonnes)
CaCO₃ as ground chalk (1962-68)
PH of soil sample taken Jan 1975

P 0.5 cwt (63kg) P₂O₅ as super Broadcast in
K 1.0 cwt (125kg) K₂O as muriate } seedbed

Half Plots

-, Mg None, 100lb (112kg) Mg, as Epsom salts

Note: P K Mg treatments cumulative (Mg in 1974 + 76 only)

Basal manuring per acre (hectare)
600 lb (675kg) Nitro-Chalk 25

Variety: Maris Hadlow sown 5 lb/acre (6kg/ha) sown
on 26 Mar

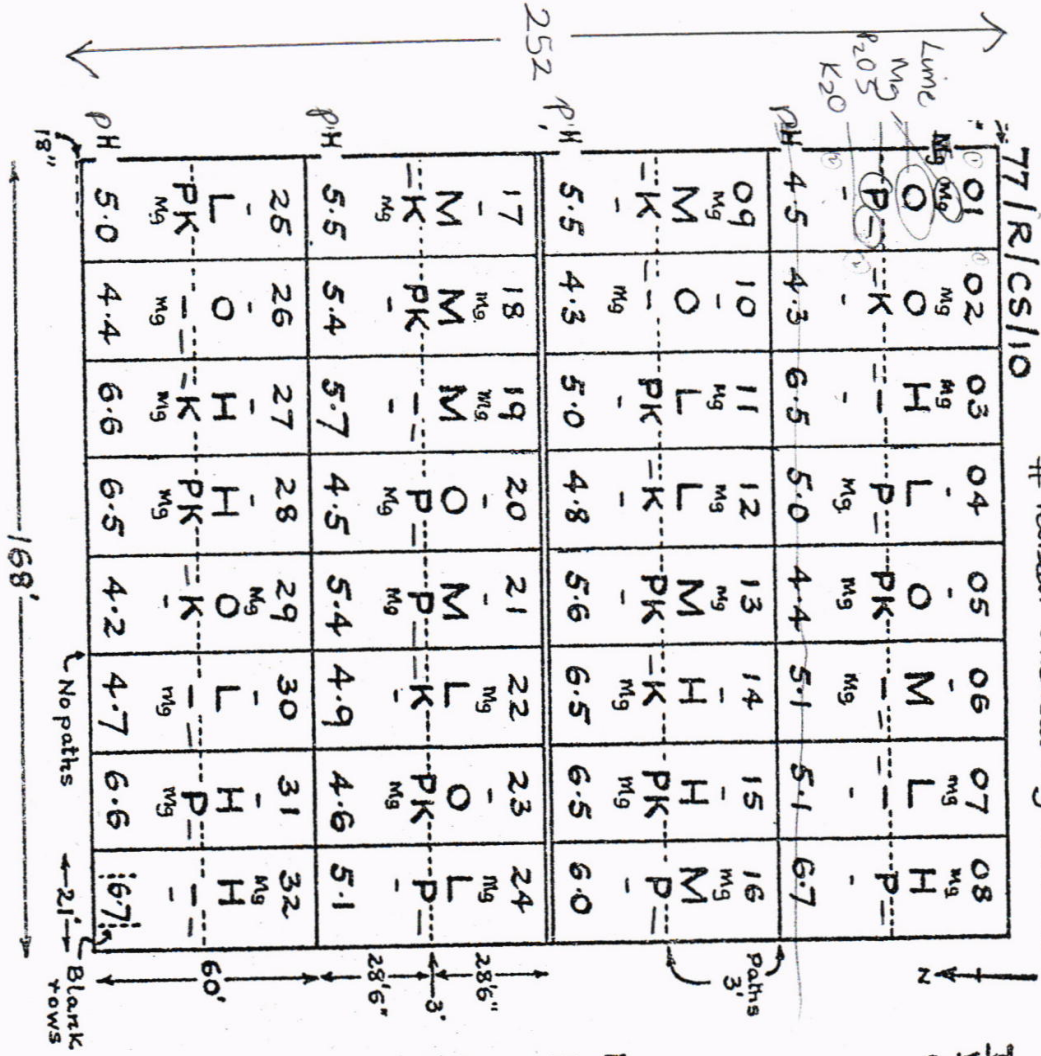
Design: 2 blocks of 16 plots split into 2

Plot area: 21' x 60' = 0.029 acre (0.0117ha)

Sub-plot harvested 15 rows at 8"
10' x 27' = 0.0062 acre (0.0025 ha)

Previous cropping: 1962-64 beans,
1965-67 barley, 1968 potatoes, 1969 fallow
1970-73 barley, 1974 potatoes, 1975 oats

Rothamsted LONG TERM LIMING Spring Oats SAWYERS I 16th Year 1977 21
 # revised. Includes Mg treatments Sponsor: J. Bolton



TREATMENTS per acre (hectare)

Whole Plots

O.L.M.H None, 2,4,8 tons (-5,10,20 tonnes)
 CaCO₃ as ground chalk (1962-63)

PH PH of soil sample taken Jan 1975

P 0.5cut (63 kg) P₂O₅ as superphosphate } Broadcast

K 1.0cut (125 kg) K₂O as muriate of potash } in seedbed

Half Plots

- . Mg None, 100 lb (112 kg) Mg, as Epsom salts

Note: P, K, Mg treatments cumulative (Mg in 1974 & 76)

Basal manuring, per acre (hectare)

SFP 'Nitro-Chalk' only @ 280 lb (314 kg)

Variety: Marod at 180 lb/acre (202 kg/ha)
 Sown 4/4/77

Design: 2 blocks of 16 plots split into 2

Plot area: 21' x 60' = 0.029 acre (0.0117 ha)

Sub-plot harvested:
 9'4" x 28'6" = 0.0061 acre (0.00246 ha)

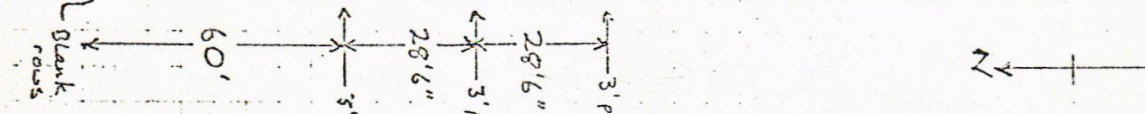
Previous Cropping

1962-64 Spr. beans, 1965-67 barley, 1968 potato
 1969 fallow, 1970-73 barley 1974 potatoes,
 1975 oats, 1976 oilseed rape

Rothamsted LONG-TERM LIMING

78/R/C/S/110

PH	01	02	03	04	05	06	07	08
	Mg	Mg	Mg	L	O	M	Mg	Mg
	O	O	H	P	PK	L	L	H
	P	K	-	Mg	Mg	Mg	-	P
PH	4.5	4.3	6.5	5.0	4.4	5.1	5.1	6.7
	09	10	11	12	13	14	15	16
	Mg	O	Mg	Mg	Mg	H	H	Mg
	M	-	L	L	M	K	PK	M
	K	-	PK	K	PK	K	PK	P
PH	5.5	4.3	5.0	4.8	5.6	6.5	6.5	6.0
	17	18	19	20	21	22	23	24
	M	Mg	Mg	O	M	Mg	O	Mg
	K	PK	-	P	P	L	PK	L
	Mg	-	-	Mg	Mg	-	Mg	-
PH	5.5	5.4	5.7	4.5	5.4	4.9	4.6	5.1
	25	26	27	28	29	30	31	32
	L	O	H	H	Mg	L	H	Mg
	PK	-	K	PK	O	-	P	H
PH	5.0	4.4	6.6	6.5	4.2	4.7	6.6	-



Barley
SAVYER, I 19th Year 1978
Sponsor: J. Bellin

TREATMENTS

Whole Plots

O, L, M, H

PH

P

K

per acre (hectare)

None, 2, 4, 8 tons (0, 5, 10, 20 tonnes)

CaCO₃ as ground chalk (1962-63)

PH of soil sample taken Jan 1975

0.5 cast (65 kg) P₂O₅

as superphosphate

1.0 cast (125 kg) K₂O

as muriate of potash

1962-78

Half Plots

Mg

1974-77 (except 1975) Mg as Epsom salt

Basal manuring per acre (hectare)

Nitro-chalk only at 336 lb (377 kg)

Variety

Porthos at 140 lb/acre (157 kg/ha) sown 19 April

Design

2 blocks of 16 plots split into 2

Plot area

21' x 60' = 0.029 acre (0.0117 ha)

Sub plot harvested

9'4" x 28'6" = 0.0061 acre (0.00246 ha)

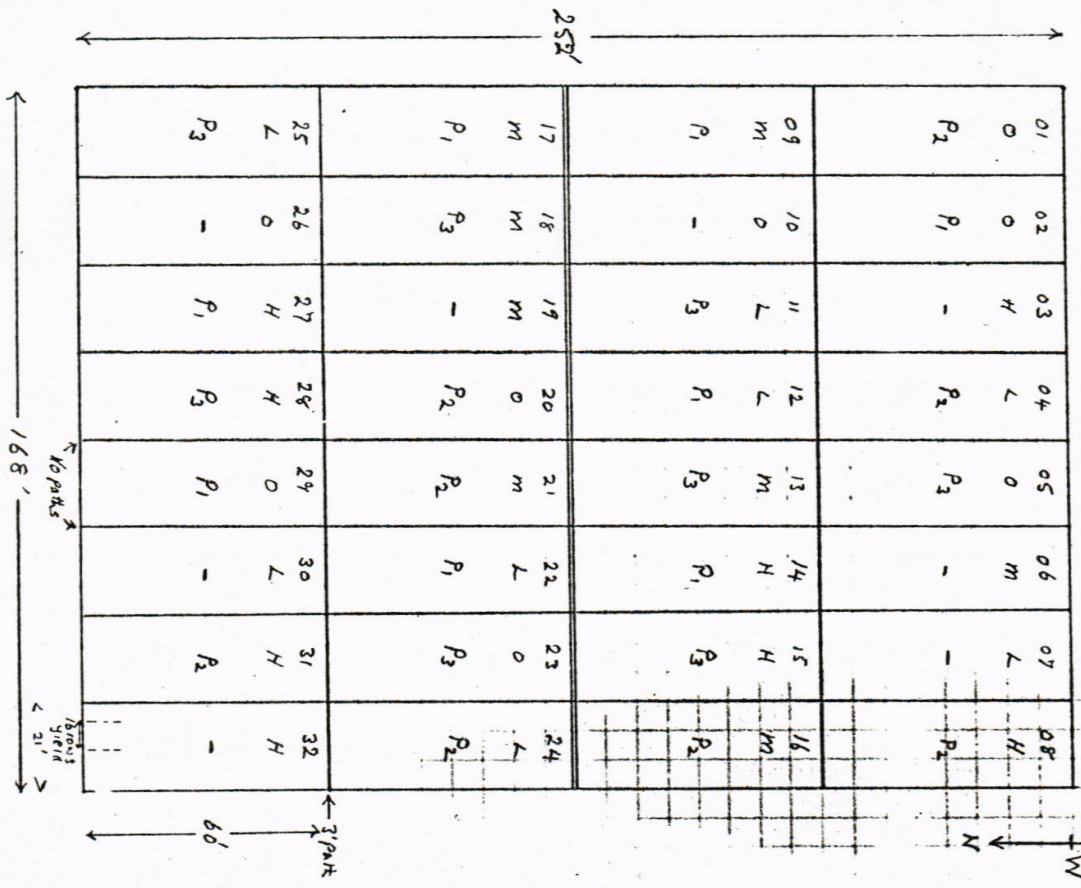
Previous cropping

1962-64 5 beans, 1965-67 barley, 1968 potatoes, 1969 fallow, 1970-73 barley, 1974 potatoes, 1975 oats, 1976 oilseed rape, 1977 oats

52/R/CS/10

ROTHAMSTED LONG TERM LIMING S. OHTS SAWYERS I 215E YEAR 1982

Sponsors: S.M. Grant, D.P. Stribley



TREATMENTS OF P+K

until winter 1978	1981	1982	Rate of P in 1982
-	-K	K	None
P1	K	P1K	50 kg P ha ⁻¹
P2	P	P1K	None
P3	PK	P3K	50 kg P ha ⁻¹

P+K until 1978 cumulative rates depended on crop

In 1981
 P1, P3 25, 75 kg P ha⁻¹
 K 120 kg K ha⁻¹

LIME TREATMENTS
 (Total 1962-1978 t ha⁻¹) winter 1981/82 t ha⁻¹

D	None	None
L	7	2
M	15	5
H	30	10

BASAL MANURING

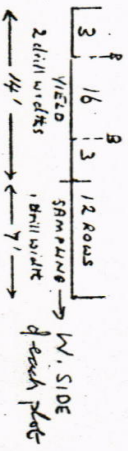
N Nitro chate at 80 kg N ha⁻¹
 K Murate of potash at 120 " " K "
 Mg Epsom Salts at 40 " " Mg "

VARIETY Peniarth

DESIGN 2 blocks of 16 plots

PLOT AREA 21' x 60' = 0.029 ac (0.0117 ha)
 Harvested 9'4" x 60' = 0.013 ac (0.0052 ha)

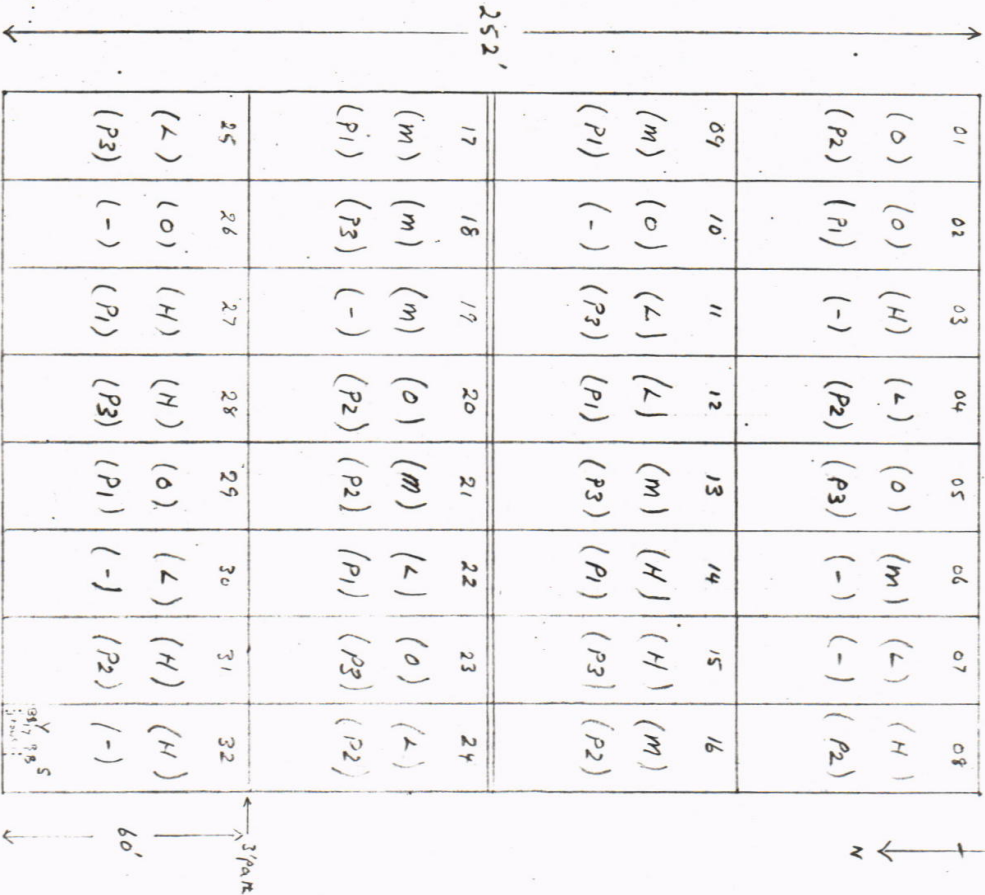
PLOT ARRANGEMENT



// No weedkillers or pesticides without
 Sponsors consent
 // All operations by Farm

ROTHAMSTED LONG TERM LIMING
85/R/CS/10

S BARLEY 24th YEAR SAWYERS I 1985
Sponsor: S.P. McGRATH



TREATMENTS OF PK UNTIL 1983

Winter 1978	1981 Rates of P _{in} 1981	1982 Rates of P _{in} 1982	1983 Rates of P _{in} 1983
(-)	- K None	- K None	- K None
(P1)	K PK 25 kg/ha	P2K 50 kg P/ha	- K None
(P2)	P PK 25 "	- K None	P2K 50 kg P/ha
(P3)	PK P3K 75 "	P2K 50 kg P/ha	P2K 50 "

P+K until 1978 cumulative; rates depended on crop

In 1981
K 120 kg K/ha

LIME TREATMENTS UNTIL 1983

Total 1962-1978 t/ha	Winter 1981/82 t/ha	Winter 1982/83 t/ha	Accumulated t/ha
(O) None	None	None	0
(L) 7	2	5	14
(M) 15	5	3	23
(H) 30	10	10	50

BASAL MANURING

(25:0:16) at 448 kg/ha

VARIETY

Kilacorn, sown at 157 kg/ha as 18 March

DESIGN

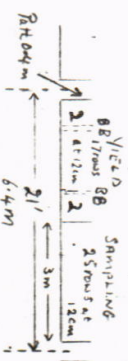
2 blocks of 16 plots.

PLOT AREA

6m x 60' = 0.0027 ha (0.011 ha)

Harvest - 17mm P12a x 60' = 0.0037 ha

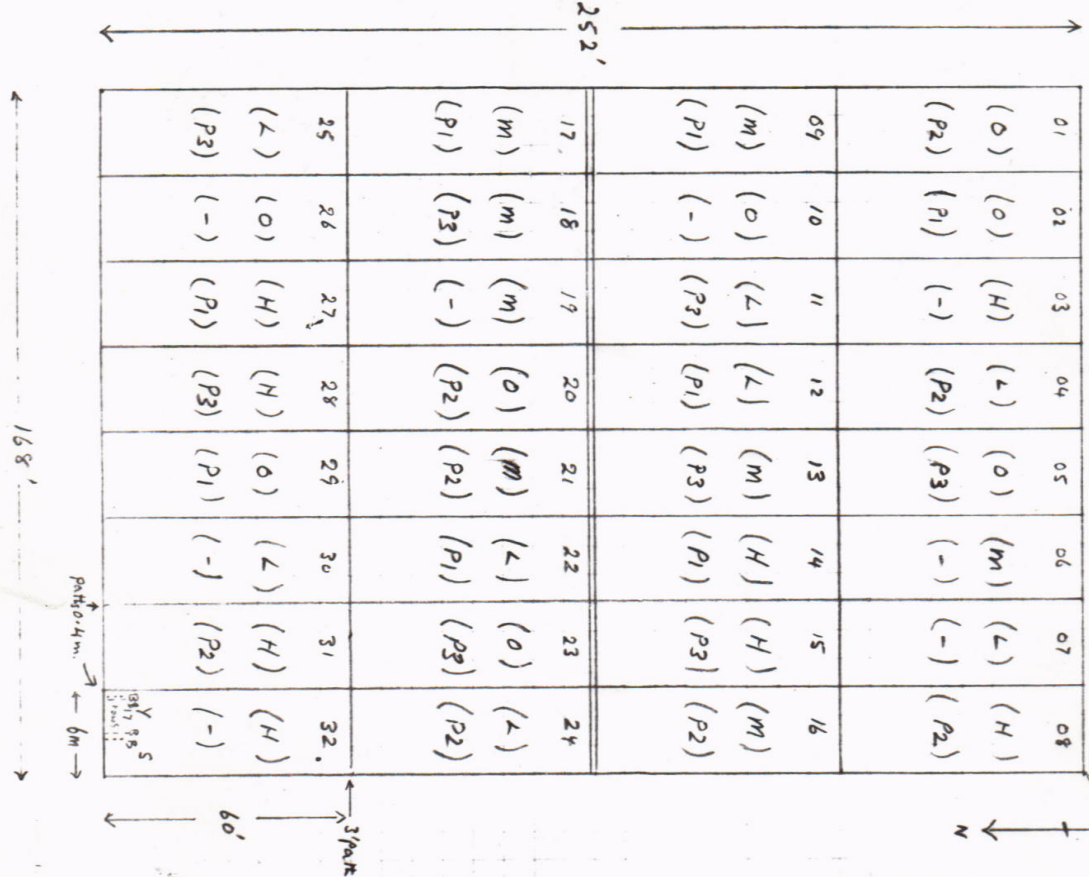
PLOT ARRANGEMENT



No fertilizer or pesticides without Sponsor's consent

All operations by Farm

ROTHAMSTED. LONG TERM LIMING
86/R/C5/110



TRITICALE 25th YEAR SAUVES I 1986
Sponsor: S. R. McGrath

TREATMENTS OF PK UNTIL 1983

until winter 1978	1981	Rates of P in 1981	1982	Rates of P in 1982	1983	Rates of P in 1983
(-)	-	K	None	-	K	None
(P1)	K	PK	25 kg/La	P2K	50 kg P/La	-
(P2)	P	PK	25 "	-	K	None
(P3)	PK	P3K	75 "	P2K	50 kg P/La	P2K

P+K until 1978 cumulative, rates depended on crop
In 1981
K 120 kg K/La

LIME TREATMENTS UNTIL 1983

(O)	None	None	None	None	None
(L)	7	2	5	3	5
(M)	15	5	5	3	23
(H)	30	10	10	10	50

Returned c/La

BASAL MANURING

N in spring

VARIETY

Keado, sown at 169 kg/La (190 kg/La) on 23 October

DESIGN

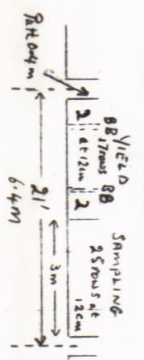
2 blocks of 16 plots

PLOT AREA

6m x 60' = 0.0027 ha (0.001 ha)

Hurf-Trossel 12m x 60' = 0.0037 ha

PLOT ARRANGEMENT



No weedkillers or pesticides without Sponsor's consent
All operations by farm

Rollamster Long Term Experiment

87/R/cs/10

S. Lupton 26th Year Samplers I 1987

Sponsors: S.P. McGrath, T.R. Egan, D.P. Yeaman

TREATMENTS

Residual effects of previous rates of chalk
(total applied 1962-83 £/ha):

- (-) None
- (L) 14
- (M) 23
- (H) 50

Residual effects of previous rates of P

- (-) None
- (P1)
- (P2)
- (P3)

Manganese sprayed in 1987

- None
- M* Sprayed at rates of instructions to be added

BASAL MANURE

None

VARIETY

Vladimir, used to be unvarietal

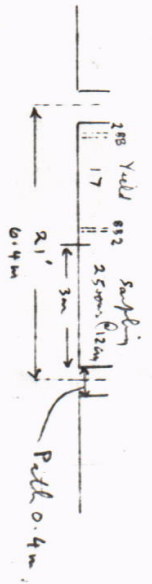
PLOT AREA

6m x 6.0' = 0.0119 ha
Sum @ 31 mow by ha⁻¹
Ringsbum
Har: 17mm @ 12mm x 28.6" = 0.0018 ha

DESIGN

2 total of 16 plots
Plot size 2

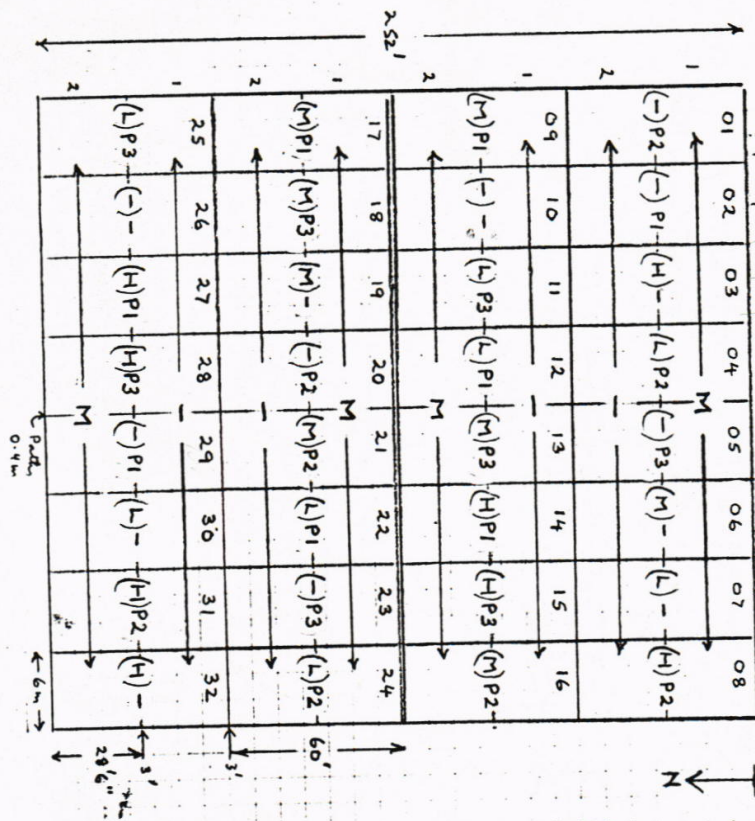
DRILLING



1	01	02	03	04	05	06	07	08
1	←	←	←	M	←	←	←	←
2	←	←	←	←	←	←	←	←
1	09	10	11	12	13	14	15	16
1	←	←	←	←	←	←	←	←
2	←	←	←	←	←	←	←	←
1	(M P1)	(-)	(L P3)	(L P1)	(M P3)	(H P1)	(H P3)	(M P2)
2	←	←	←	←	←	←	←	←
1	17	18	19	20	21	22	23	24
1	←	←	←	M	←	←	←	←
2	←	←	←	←	←	←	←	←
1	(M P1)	(M P3)	(M -)	(- P2)	(M P2)	(L P1)	(- P3)	(L P2)
2	←	←	←	←	←	←	←	←
1	25	26	27	28	29	30	31	32
1	←	←	←	←	←	←	←	←
2	←	←	←	←	←	←	←	←
1	(L P3)	(-)	(H P1)	(H P3)	(- P1)	(L -)	(H P2)	(H -)
2	←	←	←	←	←	←	←	←

M* applied by sprayer across strip of sub. plots, spray to be spread over 1 m² plots on each occasion to equivalent, including

Rothamsted Long Term Liming
98/R/c5/10



M* applied by spray: across strip of soil. Plets, spray to ground over 1' and plots on each corner to regularly wheelings

Limwood 27th Year Saugers I 1988

Sponsor: S.P. McGrath

TREATMENTS

- Revised effects of previous rates of chalk (total applied 1962-87 t/ha):
- (-) None
 - (L) 15
 - (M) 24.5
 - (H) 52.5

P applied Autumn 1987 Kg P₂O₅/ha, cumulative to previous dressings

- None
- P1 25
- P2 25
- P3 75

Manganese sprayed in 1987

- None
M* sprayed at rates of nutrients to be added

BASAL MANURING per ha.

- K at 80 kg
- Mg at 40 kg
- N at 86 kg

VARIETY

Antares sown on 13 April at 87 kg/ha

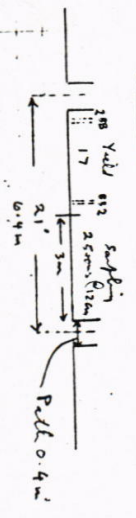
PLOT AREA

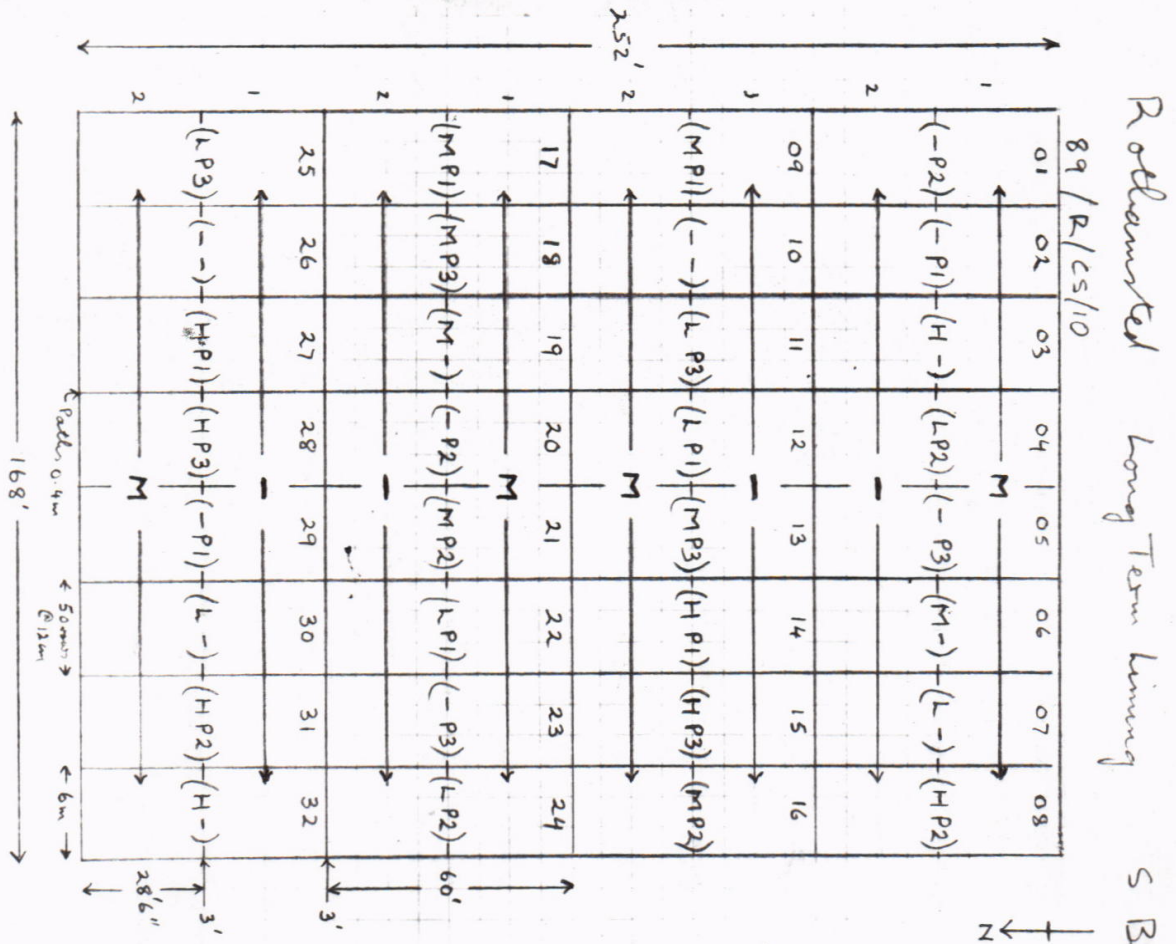
6m x 60' = 0.0110 ha
Hav: 12m x 28' = 0.0018 ha

DESIGN

2 stands of 16 plots

DRAWING





28th Year
Sponsors: S.P.McGrath, J.McEwen, D.P.Yeaman
Samples I 1989

TREATMENTS

Residual effects of double applied 1962-87 (total t/ha):

- (-) None
- (L) 15
- (M) 24.5
- (H) 52.5

Residual effects of P applied 1962-88, not varied with crop years

- (-) None
- (P1) 15
- (P2) 24.5
- (P3) 52.5

Management strategy - 1989, cumulative to previous applications

- None
M* Sprayed at rates 9 times to be settled

BASAL MAINTENANCE

None

VARIETY

Agriar

DESIGN

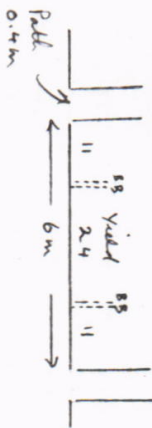
2 trials of 16 plots each

PLOT AREA

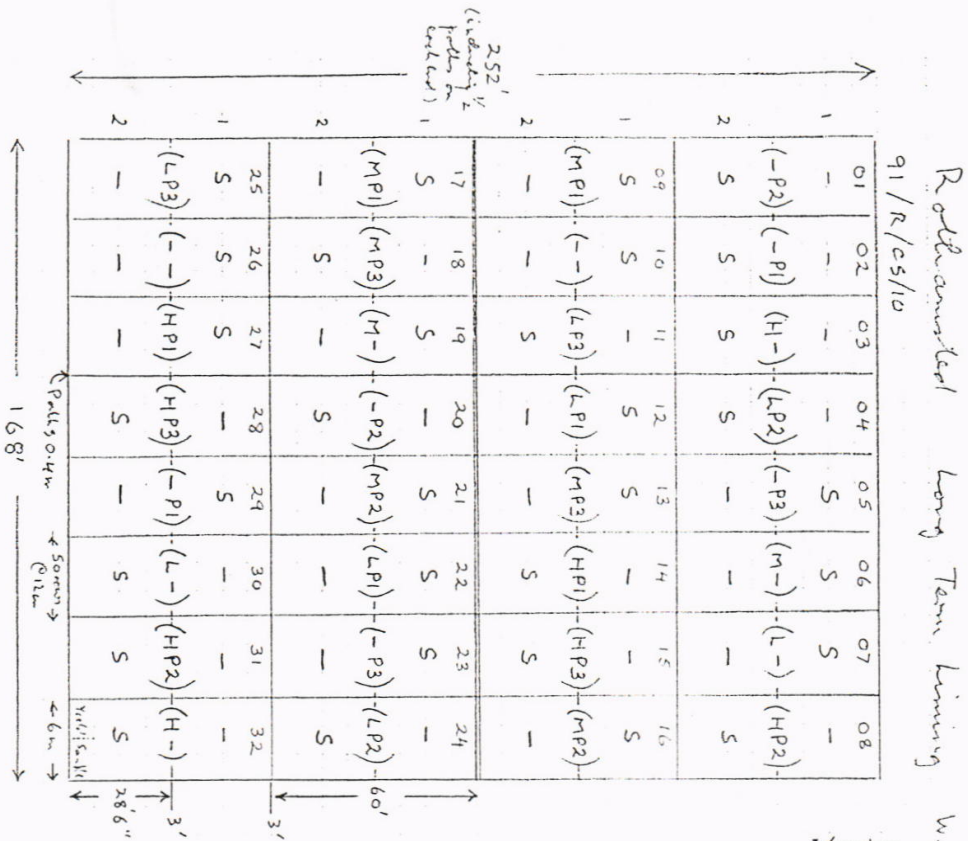
6m x 60' = 0.0110 ha

Now 24m x 12m x 28.6" = 0.0025 ha

DRILLING



* M applied by spray, rows, strips of 6m plots, sprayed to travel over - and plots on each occasion to spraying/collectings.



Wildcat Ridge 30th Year Summer I 1991 16

Sponsor: S.P. McGehee, P.B. Bannenberg, G.F. McGehee

TREATMENTS
Residual effects of block applied 1962-87 (total t/ha):

- (-) None
- (L) 15
- (M) 24.5
- (H) 52.5

Random effects of P applied 1962-88, not varied with crops or years:

- (-)
- (P1)
- (P2)
- (P3)

Subplots = 1991 on calcareous subplots = spring:

- 1 S None, 30 kg S/ha

BASAL MANURING per ha

(25:0:16) at 200 lb/ha wetter
+ 4000 Mg spring urea (1000 kg/ha)
N = spring at SFP wetter

VARIETY
Lidnoro, sown at 6 kg/ha on 31 August, 1990

PLOT AREA
6m x 6m = 0.0110 ha

- 2 stems of 4x4 plants
- || All operations by Farm
- || Repro all agrochemicals & SPM
- || To be netted

Rothamsted Long Term Experiment
92/R/05/10

W. D. R. R. 31st Year Samples I 1992

Sponsors: S. P. McGlade, P. B. Bramming, G. F. I. Midford

252' (including paths on each side)

	01	02	03	04	05	06	07	08
1	-	-	-	-	S	S	S	-
2	S	S	(H-)	(L P2)	(-P3)	(M-)	(L-)	(H P2)
1	09	10	11	12	13	14	15	16
2	S	S	-	S	S	-	-	S
1	(M P1)	(-)	(L P3)	(L P1)	(M P3)	(H P1)	(H P3)	(M P2)
2	-	-	S	-	-	S	S	-
1	17	18	19	20	21	22	23	24
2	S	-	S	-	S	S	S	-
1	(M P1)	(M P3)	(M-)	(-P2)	(M P2)	(L P1)	(-P3)	(L P2)
2	-	S	-	S	-	-	-	S
1	25	26	27	28	29	30	31	32
2	S	S	S	-	S	-	-	-
1	(L P3)	(-)	(H P1)	(H P3)	(-P1)	(L-)	(H P2)	(H-)
2	-	-	-	S	-	S	S	S

Paths 0.4m
50mm
6m
28.6"

TREATMENTS

Residual effects of levels applied 1962-87 (total t/ha):

- (-) None
- (L) 15
- (M) 24.5
- (H) 52.5

Residual effects of P applied 1962-88, not varied with crops systems:

- (-) None
- (P1) 15
- (P2) 24.5
- (P3) 52.5

Supplier = 1992a calcium sulphate - spring: (Cumulative to 1991)

- , S None, 30 kg S/ha

BASAL MANURING per ha

(25:0:16) at 200 kg & residual + foliar Mg spray not containing sulphate N - spring at 50 kg/ha

DESIGN

2 blocks of 4x4 plots

- All operations by Tom
- Reps not agreed to SPM
- To be noted

VARIETY

Victoria, mean at 4/ha

PLOT AREA

6m x 60' = 0.0110 ha

Rothamsted Experimental Farm
96/R/c5/10 Long Term Experiment

W. Wheat 35th Year Sowing 1966¹⁶

Species: S.P.M.C. Grade

TREATMENTS

Residual effects of dress applications 1962-87 (total 4/ha):

- (-) None
- (L) 15
- (M) 24.5
- (H) 52.5

Residual effects of P applied 1962-88, not varied with crops & years:

- (-)
- (P1)
- (P2)
- (P3)

Subplot = 1996a calcium sulphate in spring: (Cumulative 1991-95)

- , S None, 30 kg S/ha

BASAL MANURING in ha

No P or K
N in spring as SFP

VARIETY

Hereward, or Panocline,
sown at 580 seeds/m²
on 28/9/95

PLOT AREA

6 m x 6.1 m = 0.0097 ha
Sub plot
6 m x 6.5 = 0.0039 ha

2 blocks of 484 plots each
All operations by Farm
|| Residuals applied, to S.P.M.C. Grade

