



ROTHAMSTED
RESEARCH

Rothamsted Long-term Liming Experiment Plans 1962-1996

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Description: Contains five standardized experiment plans for the Rothamsted Long-term Liming Experiment, 1962-1996, showing plot numbers, layout and treatment factors (not to scale).

- **Plan 1:** 1962-1973. Lime and PK treatments applied to whole plots
- **Plan 2:** 1974-1980. Mg treatments applied to sub-plots, lime and PK treatments to whole plots
- **Plan 3:** 1981-1986. Lime and P treatments to whole plots
- **Plan 4:** 1987-1990. Mn treatments applied to sub-plots, lime and P treatments to whole plots
- **Plan 5:** 1991-1996. S treatments applied to sub-plots, lime and P treatments to whole plots.

Site: R/CS/10. Sawyers field 1, Rothamsted Experimental Farm, Rothamsted Research, West Common, Harpenden, Hertfordshire, AL5 2JQ, UK. Latitude 51.8157, Longitude -0.3752

Related Resources:

- Original hand drawn plans for individual years can be found here: <http://www.era.rothamsted.ac.uk/eradoc/book/146>
- Refer to website for more details: <http://www.era.rothamsted.ac.uk/>

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Rothamsted long term liming experiment R/CS/10 Plan 1962-1973

Not to scale

Sawyers

Lime and PK plot treatments

N

| | | | | | | | | | |
|------|----|------|------|----|----|------|------|------|--|
| Plot | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Block 1 2 2 76.8m 51.2m |
| Lime | O | O | H | L | O | M | L | H | |
| PK | P | K | none | P | PK | none | none | P | |
| | | | | | | | | | |
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Block 1 2 2 76.8m 51.2m |
| | M | O | L | L | M | H | H | M | |
| | K | none | PK | K | PK | K | PK | P | |
| | | | | | | | | | |
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Block 1 2 2 76.8m 51.2m |
| | M | M | M | O | M | L | O | L | |
| | K | PK | none | P | P | K | PK | P | |
| | | | | | | | | | |
| | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | Block 1 2 2 76.8m 51.2m |
| | L | O | H | H | O | L | H | H | |
| | PK | none | K | PK | K | none | P | none | |
| | | | | | | | | | |

Treatment factors:

Lime t CaCO₃ ha⁻¹, total 1962-1973

| | |
|---|----|
| O | 0 |
| L | 5 |
| M | 10 |
| H | 20 |

| | | |
|----------------------|--------------------------------------|-----|
| PK treatment: | kg ha ⁻¹ yr ⁻¹ | |
| 1962-1980: | P | K |
| none | 0 | 0 |
| K | 0 | 104 |
| P | 27.5 | 0 |
| PK | 27.5 | 104 |

No P or K in fallow years, and different rate for potatoes.

Plot area 6.4m x 18.3m (6.4m x 18m 1968) Fallow 1969

Rothamsted long term liming experiment R/CS/10

Plan 1974-1980

Not to scale

Sawyers

Mg applied to sub-plots

Lime and PK whole plot treatments

N

| Sub-plot | 011 | 021 | 031 | 041 | 051 | 061 | 071 | 081 | Block |
|----------|-----|-----|------|-----|-----|------|------|-----|-------|
| Mg | Mg | Mg | Mg | - | - | - | Mg | Mg | 1 |
| Lime | O | O | H | L | O | M | L | H | |
| Mg | - | - | - | Mg | Mg | Mg | - | - | |
| PK | P | K | none | P | PK | none | none | P | |
| Sub-plot | 012 | 022 | 032 | 042 | 052 | 062 | 072 | 082 | |

| | | | | | | | | |
|-----|------|-----|-----|-----|-----|-----|-----|---|
| 091 | 101 | 111 | 121 | 131 | 141 | 151 | 161 | 1 |
| Mg | - | Mg | Mg | Mg | - | - | Mg | |
| M | O | L | L | M | H | H | M | |
| - | Mg | - | - | - | Mg | Mg | - | |
| K | none | PK | K | PK | K | PK | P | |
| 092 | 102 | 112 | 122 | 132 | 142 | 152 | 162 | |

76.8m

| | | | | | | | | |
|-----|-----|------|-----|-----|-----|-----|-----|---|
| 171 | 181 | 191 | 201 | 211 | 221 | 231 | 241 | 2 |
| - | Mg | Mg | - | - | Mg | - | Mg | |
| M | M | M | O | M | L | O | L | |
| Mg | - | - | Mg | Mg | - | Mg | - | |
| K | PK | none | P | P | K | PK | P | |
| 172 | 182 | 192 | 202 | 212 | 222 | 232 | 242 | |

| | | | | | | | | |
|-----|------|-----|-----|-----|------|-----|------|---|
| 251 | 261 | 271 | 281 | 291 | 301 | 311 | 321 | 2 |
| - | - | - | - | Mg | - | - | Mg | |
| L | O | H | H | O | L | H | H | |
| Mg | Mg | Mg | Mg | - | Mg | Mg | - | |
| PK | none | K | PK | K | none | P | none | |
| 252 | 262 | 272 | 282 | 292 | 302 | 312 | 322 | |

51.2m

Treatment factors:

Lime t CaCO₃ ha⁻¹, total 1962-1980

| | |
|---|----|
| O | 0 |
| L | 7 |
| M | 15 |
| H | 30 |

Mg kgMg ha⁻¹yr⁻¹

| | |
|--------------------------|-----|
| - | 0 |
| Mg | 112 |
| Mg applied 1974, 1976-78 | |

PK treatment

kg ha⁻¹yr⁻¹

1962-1980:

| | | |
|------|------|-----|
| | P | K |
| none | 0 | 0 |
| K | 0 | 105 |
| P | 27.5 | 0 |
| PK | 27.5 | 105 |

No P or K in fallow years, and different rate for potatoes.

See plans for previous years (1962-1973) for further details

Plot area 6.4m x 18.3m (6.4m x 18m 1974, 1976) Fallow 1979 & 1980

Rothamsted long term liming experiment R/CS/10 Plan 1981-1986

Not to scale

Sawyers

Lime and P plot treatments

N

| | | | | | | | | | |
|------|----|----|----|----|----|----|----|----|---|
| Plot | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Block 1 1 2 2 76.8m 51.2m |
| Lime | O | O | H | L | O | M | L | H | |
| P | P2 | P1 | P0 | P2 | P3 | P0 | P0 | P2 | |
| | | | | | | | | | |
| | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| | M | O | L | L | M | H | H | M | |
| | P1 | P0 | P3 | P1 | P3 | P1 | P3 | P2 | |
| | | | | | | | | | |
| | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
| | M | M | M | O | M | L | O | L | |
| | P1 | P3 | P0 | P2 | P2 | P1 | P3 | P2 | |
| | | | | | | | | | |
| | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | |
| | L | O | H | H | O | L | H | H | |
| | P3 | P0 | P1 | P3 | P1 | P0 | P2 | P0 | |

Treatment factors:

Lime t CaCO₃ ha⁻¹, total 1962-1986

| | |
|---|----|
| O | 0 |
| L | 14 |
| M | 23 |
| H | 50 |

| PK treatment | P treatment | kgP ha ⁻¹ total | |
|--------------|-------------|----------------------------|---------|
| 1962-1980: | 1981-1988: | 1962-80 | 1981-86 |
| None | P0 | 0 | 0 |
| K | P1 | 0 | 50 |
| P | P2 | 495 | 75 |
| PK | P3 | 495 | 150 |

See plans for previous years (1962-1980) for further details

Plot area 6.4m x 18.3m (6.0m x 18m 1983, 1985, 1986) Fallow 1984

Rothamsted long term liming experiment R/CS/10

Not to scale

Plan 1987-1990

Mn applied to sub-plots

Sawyers

Lime and P whole plot treatments

N

| | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| Sub-plot | 011 | 021 | 031 | 041 | 051 | 061 | 071 | 081 | Block 1 |
| Mn | Mn | Mn | Mn | Mn | Mn | Mn | Mn | Mn | |
| Lime | O | O | H | L | O | M | L | H | |
| Mn | - | - | - | - | - | - | - | - | |
| P | P2 | P1 | P0 | P2 | P3 | P0 | P0 | P2 | |
| Sub-plot | 012 | 022 | 032 | 042 | 052 | 062 | 072 | 082 | |
| 76.8m | | | | | | | | | |
| | 091 | 101 | 111 | 121 | 131 | 141 | 151 | 161 | Block 2 |
| | - | - | - | - | - | - | - | - | |
| | M | O | L | L | M | H | H | M | |
| | Mn | Mn | Mn | Mn | Mn | Mn | Mn | Mn | |
| | P1 | P0 | P3 | P1 | P3 | P1 | P3 | P2 | |
| | 092 | 102 | 112 | 122 | 132 | 142 | 152 | 162 | |
| 76.8m | | | | | | | | | |
| | 171 | 181 | 191 | 201 | 211 | 221 | 231 | 241 | Block 2 |
| | Mn | Mn | Mn | Mn | Mn | Mn | Mn | Mn | |
| | M | M | M | O | M | L | O | L | |
| | - | - | - | - | - | - | - | - | |
| | P1 | P3 | P0 | P2 | P2 | P1 | P3 | P2 | |
| | 172 | 182 | 192 | 202 | 212 | 222 | 232 | 242 | |
| 76.8m | | | | | | | | | |
| | 251 | 261 | 271 | 281 | 291 | 301 | 311 | 321 | Block 2 |
| | - | - | - | - | - | - | - | - | |
| | L | O | H | H | O | L | H | H | |
| | Mn | Mn | Mn | Mn | Mn | Mn | Mn | Mn | |
| | P3 | P0 | P1 | P3 | P1 | P0 | P2 | P0 | |
| | 252 | 262 | 272 | 282 | 292 | 302 | 312 | 322 | |
| 51.2m | | | | | | | | | |

Treatment factors:

Lime: t CaCO₃ ha⁻¹, total 1962-1987

O 0
L 15
M 24.5
H 52.5

Mn spray treatment

1987-1990:

- not applied
Mn foliar spray applied

PK treatment

1962-1980:

None
K
P
PK

P treatment

1981-1988:

P0
P1
P2
P3

kgP ha⁻¹ total

1962-80 1981-88

0 0
0 75
495 100
495 225

See plans for previous years (1962-1986) for further details

Plot area 6.0m x 18.3m

Rothamsted long term liming experiment R/CS/10

Not to scale

Plan 1991-1996

S applied to sub-plots

Sawyers

Lime and P whole plot treatments

N

| | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-------------------------------------|
| Sub-plot | 011 | 021 | 031 | 041 | 051 | 061 | 071 | 081 | Block 1 1 Sub-plot |
| S | - | - | - | - | S | S | S | - | |
| Lime | O | O | H | L | O | M | L | H | |
| S | S | S | S | S | - | - | - | S | |
| P | P2 | P1 | P0 | P2 | P3 | P0 | P0 | P2 | |
| Sub-plot | 012 | 022 | 032 | 042 | 052 | 062 | 072 | 082 | |
| | | | | | | | | | Block 1 1 Sub-plot |
| | 091 | 101 | 111 | 121 | 131 | 141 | 151 | 161 | |
| | S | S | - | S | S | - | - | S | |
| | M | O | L | L | M | H | H | M | |
| | - | - | S | - | - | S | S | - | |
| | P1 | P0 | P3 | P1 | P3 | P1 | P3 | P2 | |
| | 092 | 102 | 112 | 122 | 132 | 142 | 152 | 162 | |
| | | | | | | | | | Block 2 2 Sub-plot |
| | 171 | 181 | 191 | 201 | 211 | 221 | 231 | 241 | |
| | S | - | S | - | S | S | S | - | |
| | M | M | M | O | M | L | O | L | |
| | - | S | - | S | - | - | - | S | |
| | P1 | P3 | P0 | P2 | P2 | P1 | P3 | P2 | |
| | 172 | 182 | 192 | 202 | 212 | 222 | 232 | 242 | |
| | | | | | | | | | Block 2 2 Sub-plot |
| | 251 | 261 | 271 | 281 | 291 | 301 | 311 | 321 | |
| | S | S | S | - | S | - | - | - | |
| | L | O | H | H | O | L | H | H | |
| | - | - | - | S | - | S | S | S | |
| | P3 | P0 | P1 | P3 | P1 | P0 | P2 | P0 | |
| | 252 | 262 | 272 | 282 | 292 | 302 | 312 | 322 | |

51.2m

Treatment factors:

Lime: t CaCO₃ ha⁻¹, total 1962-1987

| | |
|---|------|
| O | 0 |
| L | 15 |
| M | 24.5 |
| H | 52.5 |

S treatment

| | |
|-------------------|---------------------------------------|
| 1991-1996: | kgS ha ⁻¹ yr ⁻¹ |
| - | 0 |
| S | 30 |

PK treatment

1962-1980:

| |
|------|
| None |
| K |
| P |
| PK |

P treatment

1981-1988:

| |
|----|
| P0 |
| P1 |
| P2 |
| P3 |

| kgP ha ⁻¹ total | |
|----------------------------|---------|
| 1962-80 | 1981-88 |
| 0 | 0 |
| 0 | 75 |
| 495 | 100 |
| 495 | 225 |

See plans for previous years (1962-1990) for further details

Plot area 6.0m x 18.3m 1991, 1992; 5.76m x 16.1m 1993, 1994; 6.0m x 16.1m 1995, 1996