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Details of the Classical and Long-term Experiments 1968-73

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R/CS/14 N P K to Old Grass - Grass

Rothamsted Research

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NPK TO OLD GRASS ROTHAMSTED PARK GRASS

(R/CS/14)

This experiment, started in 1965, studies the effects of a range of P and K levels on yields of permanent pasture and is located on Park Grass plots 5/1 and 5/2 which provide sites with little and much P and K respectively.

Design

On each site a single replicate of 2 x 4 x 4 in 2 blocks of 16 plots each, with 2 x 2 additional plots in each block.

Treatments

- (1) The sites differ in previous history:
- | | | |
|------------|-----------|--------------------------------------------------------------------------------|
| Plot 5/1: | 1856-97 | 96 kg N annually |
| | 1898-1964 | Unmanured |
| Plots 5/2: | 1856-97 | 96 kg N annually |
| | 1898-1964 | Superphosphate and sulphate of potash to supply 34 kg P and 224 kg K annually. |
- (2) On each site all combinations of:
- (a) Nitrogen fertiliser (kg N for each cut)
- | | | |
|---------|------|------|
| | N1 | N2 |
| 1965 | 37.5 | 75 |
| 1966 | 56.0 | 112 |
| 1967-73 | 33.6 | 67.2 |
- (b) Phosphate (Kg P) annually as superphosphate
- | | |
|----|------|
| P0 | None |
| P1 | 16.8 |
| P2 | 33.6 |
| P4 | 67.2 |
- (c) Potassium (kg K) annually as potassium chloride
- | | |
|----|------|
| K0 | None |
| K2 | 112 |
| K4 | 224 |
| K8 | 448 |
- (3) Together with extra treatments on each site:
all combinations of:
- (a) nitrogen fertiliser as 2(a)
- (b) residues of PK fertiliser applied 1965 only
- 33.6 kg P + 56.1 kg K
- 33.6 kg P + 336 kg K
- Number of nitrogen applications have been:
- | | |
|-------------|------------------|
| 1965 | 4 |
| 1966 | 3 |
| 1967 | 5/1 - 3; 5/2 - 4 |
| 1968 & 1969 | 3 |

1970 & 1971	2
1972	3
1973	3

Liming

Ground chalk applied (t/ha)

1965:	Plot 5/1 – 12.8	plot 5/2 – 11.5
1968:	Plot 5/1 – 6.2	plot 5/2 – 5.5
1970:	Both plots – 8.8	

Area harvested 0.00085 – 0.00090

Soil series Batcombe series