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Yields of the Field Experiments 1980

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80/R/BN/7 Barnfield

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80/R/BN/7

BARNFIELD

Object: The experiment was designed to study the effects of organic and inorganic manures on continuous root crops. It has been progressively modified to study effects on other crops.

Sections 1 and 2 fallow. The sixth year of Italian ryegrass on the rest of the experiment.

For previous years see 'Details' 1967 & 1973 and 74-79/R/BN/7.

Plot dimensions: Ryegrass: 10.7 x 55.9.

Treatments to ryegrass: All combinations of:-

Whole plots

1. MANURE Fertilisers and organic manures:

| | |
|-------|---------------|
| DN | D N |
| DNPK | D N P K |
| NPKMG | N P K (Na) Mg |
| NP | N P |
| NPK | N P K |
| NPMG | N P (Na) Mg |
| N | N |

N: 100 kg N before first cut, 75 kg N after first and second cuts.
All as 'Nitro-Chalk'.
P: 35 kg P as single superphosphate (triple superphosphate in 1974).
K: 225 kg K as sulphate of potash
(Na): 90 kg Na as sodium chloride until 1973
Mg: 90 kg Mg as kieserite every fourth year since 1974 (sulphate of
magnesia until 1973).
D: Farmyard manure at 35 tonnes (until 1975).

Quarter plots

2. NFORMRES Residues of forms of N (each supplying 96 kg N):

| | |
|-------|-----------------------------------|
| NS | Nitrate of soda |
| SA | Sulphate of ammonia |
| SA/CM | Sulphate of ammonia + castor meal |
| CM | Castor meal |

Castor meal last applied 1961, others until 1959.

Plus one plot MANURE NKMG

NOTES: (1) Yields were taken only from half plots cropped with sugar beet in 1973.
(2) P K and D treatments were applied to Sections 1 and 2, fallow in 1980.

80/R/BN/7

Cultivations, etc.:— Ryegrass and fallow: P and K applied: 1 Nov, 1979.

Ryegrass: N applied: 13 Mar, 1980, 5 June, 26 July. Cut: 30 May, 21 July, 27 Oct.

Fallow: FYM applied: 2 Jan, 1980. Ploughed: 17 Jan. Heavy spring-tine cultivated: 22 Apr. Spring-tine cultivated: 22 May. Rotary cultivated: 19 June. Rotary harrowed: 1 Aug.

1ST CUT (30/5/80) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

| NFORMRES MANURE | NS | SA | SA/CM | CM | MEAN |
|--------------------|------|------|-------|------|------|
| DN | 5.62 | 5.91 | 5.41 | 5.89 | 5.71 |
| DNPK | 6.09 | 6.02 | 5.75 | 5.88 | 5.93 |
| NPKMG | 3.99 | 3.73 | 4.02 | 4.25 | 4.00 |
| NP | 3.07 | 3.05 | 3.27 | 3.30 | 3.17 |
| NPK | 3.96 | 3.91 | 4.02 | 4.20 | 4.02 |
| NPMG | 3.02 | 2.99 | 3.18 | 3.25 | 3.11 |
| N | 3.21 | 2.09 | 3.09 | 3.13 | 2.88 |
| MEAN | 4.14 | 3.96 | 4.11 | 4.27 | 4.12 |

MANURE NKMG 3.41

GRAND MEAN 4.09

1ST CUT MEAN DM% 30.9

2ND CUT (21/7/80) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

| NFORMRES MANURE | NS | SA | SA/CM | CM | MEAN |
|--------------------|------|------|-------|------|------|
| DN | 2.55 | 2.67 | 2.44 | 2.20 | 2.46 |
| DNPK | 2.80 | 2.64 | 2.73 | 2.76 | 2.73 |
| NPKMG | 1.80 | 1.79 | 2.13 | 2.12 | 1.96 |
| NP | 1.69 | 1.26 | 1.24 | 1.57 | 1.44 |
| NPK | 2.02 | 1.88 | 2.09 | 1.93 | 1.98 |
| NPMG | 1.80 | 1.43 | 1.51 | 1.43 | 1.54 |
| N | 1.38 | 1.02 | 1.13 | 1.02 | 1.14 |
| MEAN | 2.01 | 1.81 | 1.90 | 1.86 | 1.89 |

MANURE NKMG 1.78

GRAND MEAN 1.89

2ND CUT MEAN DM% 22.3

80/R/BN/7

3RD CUT (27/10/80) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

| NFORMRES MANURE | NS | SA | SA/CM | CM | MEAN |
|--------------------|------|------|-------|------|------|
| DN | 2.73 | 2.63 | 2.68 | 2.83 | 2.72 |
| DNPK | 2.38 | 2.57 | 2.77 | 2.86 | 2.65 |
| NPKMG | 2.42 | 2.67 | 2.69 | 2.58 | 2.59 |
| NP | 1.99 | 2.08 | 1.91 | 1.83 | 1.95 |
| NPK | 2.43 | 2.37 | 2.74 | 2.31 | 2.46 |
| NPMG | 2.00 | 1.83 | 1.79 | 1.77 | 1.85 |
| N | 1.90 | 1.96 | 1.45 | 1.41 | 1.68 |
| MEAN | 2.26 | 2.30 | 2.29 | 2.23 | 2.27 |

MANURE NKMG 2.25

GRAND MEAN 2.27

3RD CUT MEAN DM% 22.6

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

| NFORMRES MANURE | NS | SA | SA/CM | CM | MEAN |
|--------------------|-------|-------|-------|-------|-------|
| DN | 10.89 | 11.21 | 10.53 | 10.92 | 10.89 |
| DNPK | 11.27 | 11.24 | 11.25 | 11.50 | 11.31 |
| NPKMG | 8.20 | 8.19 | 8.85 | 8.95 | 8.55 |
| NP | 6.74 | 6.39 | 6.43 | 6.70 | 6.57 |
| NPK | 8.41 | 8.16 | 8.85 | 8.44 | 8.47 |
| NPMG | 6.82 | 6.25 | 6.48 | 6.45 | 6.50 |
| N | 6.49 | 5.07 | 5.67 | 5.56 | 5.70 |
| MEAN | 8.40 | 8.07 | 8.29 | 8.36 | 8.28 |

MANURE NKMG 7.43

GRAND MEAN 8.25

TOTAL OF 3 CUTS MEAN DM% 25.3

SUB PLOT AREA HARVESTED 0.00568