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Yields of the Field Experiments 1985

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85/R/BN/7 Barnfield - Ryegrass, Clover

Rothamsted Research

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85/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 the second year of grass/clover. The eleventh year of grass on the rest of the experiment.

For previous years see 'Details' 1967 and 1973 and 74-84/R/BN/7.

Plot dimensions: 10.7 x 55.9.

Treatments to grass: All combinations of:-

Whole plots

1. MANURE Fertilizers and organic manures:

D	D
DPK	D P K
PKMG	P K (Na) Mg
P	P
PK	P K
PMG	P (Na) Mg
O	O

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. N PERCUT Nitrogen fertilizer in 1985 (kg N per cut) as 'Nitro-Chalk' (27.5% N) and residues of forms of N previously each supplying 96 kg N per annum:

75	75, previously nitrate of soda
100	100, previously sulphate of ammonia
125	125, previously sulphate of ammonia + castor meal
150	150, previously castor meal

Castor meal last applied 1961, nitrate of soda and sulphate of ammonia until 1959.

plus one plot MANURE KMG 100

Treatments to grass/clover (not given nitrogen fertilizer):

MANURE	Fertilizer and organic manures as for grass above, excluding KMG.
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NOTES: (1) P K and D treatments were applied to Sections 1 and 2 until 1980. None were applied subsequently until the resumption of P and K treatments, only, for 1985.

(2) Yields were not taken from section 2.

85/R/BN/7

Cultivations, etc.:-

All sections: P applied: 13 Dec, 1984. K applied: 3 Jan, 1985. Cut:
29 May, 6 Nov.
Grass (Sections 3, 4, 5 and 6) only: N applied: 28 Mar, 31 May.

GRASS/CLOVER

1ST CUT (29/5/85) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	MEAN
	3.46	2.99	3.77	3.29	3.31	2.62	1.63	3.01

1ST CUT MEAN DM% 13.7

2ND CUT (6/11/85) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	MEAN
	5.14	5.18	4.32	3.92	4.47	4.46	2.45	4.28

2ND CUT MEAN DM% 33.2

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	MEAN
	8.60	8.17	8.09	7.21	7.78	7.08	4.08	7.29

TOTAL OF 2 CUTS MEAN DM% 23.5

GRASS

1ST CUT (29/5/85) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	MEAN
D	5.00	6.25	6.04	5.65	5.74
DPK	5.79	5.94	5.73	5.78	5.81
PKMG	5.40	5.84	5.95	5.52	5.68
P	4.63	3.65	3.31	3.32	3.73
PK	5.12	5.63	5.59	5.30	5.41
PMG	4.58	3.98	3.61	3.57	3.94
0	3.97	3.75	3.18	3.56	3.61
MEAN	4.93	5.01	4.77	4.67	4.85

MANURE KMG 100 5.79

GRAND MEAN 4.88

1ST CUT MEAN DM% 19.3

85/R/BN/7

2ND CUT (6/11/85) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	MEAN
D	3.32	6.10	6.49	6.88	5.70
DPK	4.04	6.14	6.36	6.97	5.88
PKMG	3.50	5.39	5.92	6.13	5.24
P	2.95	3.46	4.08	4.41	3.73
PK	3.68	5.74	6.58	6.02	5.50
PMG	3.19	3.50	4.55	4.15	3.85
O	2.39	3.47	4.64	4.34	3.71
MEAN	3.30	4.83	5.52	5.56	4.80

MANURE KMG 100 4.77

GRAND MEAN 4.80

2ND CUT MEAN DM% 51.5

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	MEAN
D	8.31	12.35	12.53	12.53	11.43
DPK	9.83	12.08	12.09	12.75	11.69
PKMG	8.91	11.23	11.87	11.65	10.91
P	7.58	7.11	7.39	7.73	7.46
PK	8.80	11.37	12.16	11.32	10.91
PMG	7.78	7.48	8.16	7.72	7.79
O	6.36	7.22	7.82	7.90	7.32
MEAN	8.22	9.83	10.29	10.23	9.64

MANURE KMG 100 10.56

GRAND MEAN 9.68

TOTAL OF 2 CUTS MEAN DM% 35.4

SUB PLOT AREA HARVESTED 0.00568