

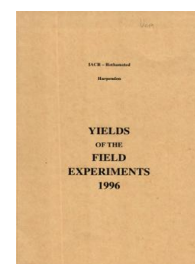
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Yields of the Field Experiments 1996

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96/R/BN/7 Barnfield - Ley

Rothamsted Research

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96/R/BN/7

BARNFIELD

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

Sections 1 and 2, 2nd year of clover. Sections 3-6, 2nd year of grass/clover.

For previous years see 'Details' 1967 and 1973 and 74-95/R/BN/7.

Plot dimensions: 10.7 x 55.9.

Treatments to grass/clover, Sections 3-6: All combinations of:-

Whole plots

1. **MANURE** Fertilizers and organic manures:

(D)	(D)
(D) PK	(D) P K
PKMG	P K (Na) Mg
P	P
PK	P K
PMG	P (Na) Mg
0	0

P: 35 kg P as triple superphosphate in 1974 and since 1987, single superphosphate in other years

K: 225 kg K as sulphate of potash

(Na): 90 kg Na as sodium chloride until 1973, none since

Mg: 90 kg Mg as kieserite every fourth year since 1974 (sulphate of magnesia until 1973)

(D): Farmyard manure at 35 t until 1975, none since

Sub-plots

2. **N PERCUT** Nitrogen fertilizer in 1996 (kg N per cut) as 34.5% N, cumulative to previous dressings and residues of forms of N previously each supplying 96 kg N per annum:

75	75, previously nitrate of soda, section 3
100	100, previously sulphate of ammonia, section 4
125	125, previously sulphate of ammonia + castor meal, section 5
150	150, previously castor meal, section 6

No nitrogen fertilizer applied in 1995. Castor meal last applied 1961, nitrate of soda and sulphate of ammonia until 1959.

Plus one plot **MANURE** KMG 100

96/R/BN/7

Treatments to clover, sections 1 and 2 (not given nitrogen fertilizer):

MANURE Fertilizers and organic manures as for grass/clover above, excluding KMG.

- 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, from 1985.
(2) Yields were not taken from section 2.

Experimental diary:

08-Nov-95 : **T** : P and K applied.
27-Mar-96 : **T** : N applied
25-Apr-96 : **B** : Rolled.
10-Jun-96 : **T** : Cut, herbage removed.
11-Jun-96 : **T** : N applied.
11-Nov-96 : **T** : Cut, herbage removed.

NOTE: Herbage samples were taken for chemical analysis.

GRASS/CLOVER

1ST CUT (10/6/96) DRY MATTER TONNES/HECTARE

***** Tables of means *****

N PERCUT	75	100	125	150	Mean
MANURE					
D	5.35	6.43	6.49	5.86	6.03
DPK	6.12	6.18	6.63	6.76	6.43
PKMG	5.43	5.52	5.54	5.67	5.54
P	4.30	4.06	4.41	4.54	4.33
PK	4.60	5.61	5.77	5.70	5.42
PMG	3.57	3.73	3.72	3.23	3.56
0	3.29	4.01	3.33	2.67	3.33
Mean	4.67	5.08	5.13	4.92	4.95

MANURE KMG 100 5.62

Grand mean 4.97

1ST CUT MEAN DM% 23.0

96/R/BN/7

GRASS/CLOVER

2ND CUT (11/11/96) DRY MATTER TONNES/HECTARE

***** Tables of means *****

N PERCUT MANURE	75	100	125	150	Mean
D	1.26	2.31	2.54	3.21	2.33
DPK	2.03	2.80	2.35	3.36	2.63
PKMG	1.57	2.53	2.71	3.10	2.48
P	1.10	1.60	2.58	1.33	1.65
PK	1.29	2.22	2.69	3.50	2.42
PMG	1.06	0.95	1.79	0.75	1.14
0	0.70	0.64	0.58	0.55	0.62
Mean	1.29	1.86	2.18	2.26	1.90

MANURE KMG 100 2.46

Grand mean 1.92

2ND CUT MEAN DM% 22.2

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

***** Tables of means *****

N PERCUT MANURE	75	100	125	150	Mean
D	6.61	8.73	9.03	9.07	8.36
DPK	8.15	8.98	8.98	10.12	9.06
PKMG	7.00	8.05	8.25	8.77	8.02
P	5.40	5.66	6.99	5.87	5.98
PK	5.89	7.82	8.46	9.20	7.84
PMG	4.63	4.68	5.52	3.98	4.70
0	3.99	4.65	3.91	3.22	3.94
Mean	5.95	6.94	7.31	7.18	6.84

MANURE KMG 100 8.08

Grand mean 6.89

TOTAL OF 2 CUTS MEAN DM% 22.6

PLOT AREA HARVESTED 0.00155

96/R/BN/7

CLOVER

1ST CUT (10/6/96) DRY MATTER TONNES/HECTARE

***** Tables of means *****

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	3.54	3.43	2.92	2.69	3.21	3.48	2.23	3.07

1ST CUT MEAN DM% 19.5

2ND CUT (11/11/96) DRY MATTER TONNES/HECTARE

***** Tables of means *****

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	0.82	1.13	0.76	0.38	1.13	0.55	0.46	0.75

2ND CUT MEAN DM% 17.4

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

***** Tables of means *****

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	4.36	4.56	3.67	3.08	4.34	4.03	2.69	3.82

TOTAL OF 2 CUTS MEAN DM% 18.5

PLOT AREA HARVESTED 0.00155