

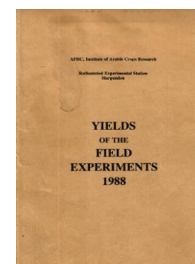
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Yields of the Field Experiments 1988

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88/R/BN/7 Barnfield - Leys

Rothamsted Research

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88/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 fifth year of grass/clover. The 14th year of grass on the rest of the experiment.

For previous years see 'Details' 1967 and 1973 and 74-87/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 until 1987, triple superphosphate since and 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 1988 (kg N per cut) as 'Nitram' 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

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

plus one plot **MANURE** KMG 100

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

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

88/R/BN/7

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.

Cultivations, etc.:-

All sections: P applied: 12 Jan, 1988. K applied: 14 Jan. Cut: 24 May, 21 Nov.
 Grass (Sections 3, 4, 5 and 6) only: N applied: 5 Apr, 1988, 26 May.

GRASS

1ST CUT (24/5/88) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	5.48	5.02	5.28	5.35	5.28
DPK	5.78	5.02	5.46	5.70	5.49
PKMG	5.50	5.21	5.03	5.25	5.25
P	4.54	2.80	2.83	3.20	3.34
PK	5.71	5.06	5.18	5.15	5.28
PMG	4.28	2.73	2.81	2.69	3.13
0	4.04	3.22	2.84	2.82	3.23
Mean	5.05	4.15	4.20	4.31	4.43

MANURE KMG 100 5.20

Grand mean 4.45

1ST CUT MEAN DM% 21.2

2ND CUT (21/11/88) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	5.30	6.59	6.45	6.73	6.27
DPK	4.73	5.97	6.44	5.94	5.77
PKMG	3.56	4.90	5.19	5.18	4.71
P	2.32	1.52	1.83	2.02	1.92
PK	2.90	5.31	5.02	5.05	4.57
PMG	2.00	1.58	1.23	1.77	1.65
0	2.26	1.34	1.26	1.86	1.68
Mean	3.29	3.89	3.92	4.08	3.79

MANURE KMG 100 4.18

Grand mean 3.81

2ND CUT MEAN DM% 22.3

88/R/BN/7

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	10.77	11.62	11.73	12.08	11.55
DPK	10.51	10.99	11.89	11.64	11.26
PKMG	9.06	10.11	10.22	10.44	9.96
P	6.86	4.32	4.66	5.22	5.26
PK	8.61	10.36	10.20	10.20	9.84
PMG	6.28	4.32	4.04	4.46	4.78
0	6.30	4.56	4.10	4.68	4.91
Mean	8.34	8.04	8.12	8.39	8.22

MANURE KMG 100 9.39

Grand mean 8.26

TOTAL OF 2 CUTS MEAN DM% 21.8

PLOT AREA HARVESTED 0.00568

GRASS/CLOVER

1ST CUT (24/5/88) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	3.09	3.29	2.67	1.78	2.48	1.80	1.20	2.33

1ST CUT MEAN DM% 21.1

2ND CUT (21/11/88) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	4.47	3.70	2.58	2.48	2.26	2.12	1.43	2.72

2ND CUT MEAN DM% 22.3

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	7.56	6.99	5.25	4.26	4.74	3.92	2.63	5.05

TOTAL OF 2 CUTS MEAN DM% 21.7

PLOT AREA HARVESTED 0.00568