

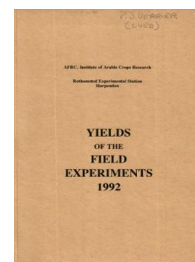
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Yields of the Field Experiments 1992

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92/R/BN/7 Barnfield - Ley

Rothamsted Research

Rothamsted Research (1993) *92/R/BN/7 Barnfield - Ley* ; Yields Of The Field Experiments 1992, pp 30 - 33 - DOI: <https://doi.org/10.23637/ERADOC-1-47>

92/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 the ninth year of grass/clover. The 18th year of grass on the rest of the experiment.

For previous years see 'Details' 1967 and 1973 and 74-91/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
0	0

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 1992 (kg N per cut) as 'Nitram', 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

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

Plus one plot **MANURE** KMG 100

92/R/BN/7

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

MANURE Fertilizers and organic manures as for grass 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:

All sections:

13-Nov-91 : T : P applied.
 14-Nov-91 : T : K applied.
 10-Jun-92 : B : First cut.
 10-Nov-92 : B : Second cut.

Grass (Sections 3, 4, 5 and 6 only):

13-Mar-92 : T : N applied.
 18-Jun-92 : T : N applied.

NOTE: Herbage samples were taken for chemical analysis.

GRASS

1ST CUT (10/6/92) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	6.52	6.33	4.93	5.38	5.79
DPK	6.95	7.04	7.58	6.23	6.95
PKMG	5.50	6.82	5.51	6.09	5.98
P	2.74	2.13	1.55	1.25	1.92
PK	6.30	5.66	6.02	5.49	5.87
PMG	3.09	2.35	2.07	1.13	2.16
0	2.60	2.54	1.78	1.60	2.13
Mean	4.82	4.70	4.20	3.88	4.40

MANURE KMG 100 6.41

Grand mean 4.47

1ST CUT MEAN DM% 24.6

92/R/BN/7

GRASS

2ND CUT (10/11/92) DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	5.54	5.26	5.43	6.17	5.60
DPK	5.02	5.33	4.67	5.38	5.10
PKMG	4.10	5.01	5.01	4.54	4.66
P	1.75	1.28	2.45	1.86	1.83
PK	3.87	4.83	5.03	4.00	4.43
PMG	2.38	0.85	1.74	2.58	1.89
0	1.95	1.66	2.21	2.64	2.12
Mean	3.52	3.46	3.79	3.88	3.66

MANURE KMG 100 5.28

Grand mean 3.72

2ND CUT MEAN DM% 19.8

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

N PERCUT MANURE	75	100	125	150	Mean
D	12.06	11.59	10.36	11.55	11.39
DPK	11.98	12.36	12.25	11.61	12.05
PKMG	9.60	11.83	10.52	10.63	10.65
P	4.49	3.41	4.00	3.11	3.75
PK	10.18	10.49	11.05	9.48	10.30
PMG	5.48	3.20	3.81	3.71	4.05
0	4.55	4.19	3.99	4.24	4.24
Mean	8.33	8.15	8.00	7.76	8.06

MANURE KMG 100 11.69

Grand mean 8.19

TOTAL OF 2 CUTS MEAN DM% 22.2

PLOT AREA HARVESTED 0.00155

92/R/BN/7

GRASS/CLOVER

1ST CUT (10/6/92) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	3.31	3.81	3.32	2.84	3.10	3.06	2.29	3.10

1ST CUT MEAN DM% 13.9

2ND CUT (10/11/92) DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	2.53	2.28	1.27	2.10	1.88	1.67	1.39	1.87

2ND CUT MEAN DM% 13.0

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

MANURE	D	DPK	PKMG	P	PK	PMG	0	Mean
	5.83	6.09	4.59	4.94	4.97	4.73	3.69	4.98

TOTAL OF 2 CUTS MEAN DM% 13.4

PLOT AREA HARVESTED 0.00568