

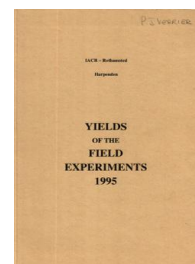
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Yields of the Field Experiments 1995

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95/R/BN/7 Barnfield - Ley

Rothamsted Research

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95/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, 11 years of grass/clover, 1st year of clover. 20 years of grass, 1st year of grass/clover on the rest of the experiment. All re-sown in 1995.

For previous years see 'Details' 1967 and 1973 and 74-94/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)
(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 1994 (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

95/R/BN/7

Treatments to 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.
(3) Only one cut was taken for yield, in the autumn. There was insufficient growth to justify a yield cut earlier in the season.

Experimental diary:

13-Sep-94 : B : Roundup at 5.0 l in 200 l.
03-Nov-94 : T : P applied.
07-Nov-94 : T : K applied.
16-Nov-94 : B : Ploughed.
06-Apr-95 : B : Rotary harrowed, spring-tine cultivated.
07-Apr-95 : T : Sections 3-6: Rotary harrowed, 33% Hercules perennial ryegrass, 33% Condessa tet ryegrass, 13% Bundy meadow fescue, 13% Motin Timothy and 7% Ensign white clover drilled at 30 kg.
: T : Sections 1-2: Rotary harrowed, Olwen white clover drilled at 6.6 kg.
: B : Rolled.
16-May-95 : B : Part irrigated 25 mm, started.
22-May-95 : B : Part irrigated 25 mm.
24-May-95 : B : Part irrigated 25 mm.
26-May-95 : B : Part irrigated 25 mm, finished.
21-Jun-95 : B : Topped.
05-Jul-95 : B : Legumex Extra at 7.0 l in 200 l.
13-Jul-95 : B : Part irrigated 25 mm, started.
14-Jul-95 : B : Part irrigated 25 mm.
16-Jul-95 : B : Part irrigated 25 mm.
17-Jul-95 : B : Part irrigated 25 mm.
18-Jul-95 : B : Part irrigated 25 mm, finished.
28-Jul-95 : T : Sections 3-6: Patch re-drilled grass mixture at 30 kg, to failed areas.
: B : Part irrigated 25 mm, started.
29-Jul-95 : B : Part irrigated 25 mm.
30-Jul-95 : B : Part irrigated 25 mm.
31-Jul-95 : B : Part irrigated 25 mm, finished.
04-Aug-95 : B : Part irrigated 25 mm, started.
05-Aug-95 : B : Part irrigated 25 mm.
06-Aug-95 : B : Part irrigated 25 mm.
12-Aug-95 : B : Part irrigated 25 mm, finished.
31-Aug-95 : B : Topped.
31-Oct-95 : B : Cut.
02-Nov-95 : B : Herbage baled and removed.

NOTE: Herbage samples were taken for chemical analysis.

95/R/BN/7

GRASS/CLOVER

1ST CUT (31/10/95) DRY MATTER TONNES/HECTARE

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

N PERCUT	(75)	(100)	(125)	(150)	Mean
MANURE					
(D)	2.17	2.37	2.40	2.87	2.45
(D)PK	2.46	2.62	2.84	2.97	2.72
PKMG	1.53	2.19	2.31	2.05	2.02
P	0.44	1.08	1.35	0.87	0.93
PK	1.53	1.43	2.19	2.61	1.94
PMG	0.89	0.75	1.12	0.66	0.85
0	0.31	0.43	0.29	0.08	0.28
Mean	1.33	1.55	1.79	1.73	1.60

MANURE KMG 100 2.11

Grand mean 1.62

1ST CUT MEAN DM% 19.6

PLOT AREA HARVESTED 0.00155

CLOVER

1ST CUT (31/10/95) DRY MATTER TONNES/HECTARE

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

MANURE	(D)	(D)PK	PKMG	P	PK	PMG	0	Mean
	1.43	2.14	0.60	0.53	0.40	0.42	0.90	0.92

1ST CUT MEAN DM% 16.3

PLOT AREA HARVESTED 0.00155