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Yields of the Field Experiments 1989

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89/W/RN/4 Market Garden - Clover

Rothamsted Research

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89/W/RN/4

MARKET GARDEN

Object: The experiment compared the effects of fertilizers and organic manures applied annually in the period 1942 to 1967, on market garden crops. Residual effects of the organic manures were studied in arable crops from 1968 to 1973. From 1974 until 1982 the site was maintained in grass without yields. A new sequence of cropping started in 1983 to study further the residual effects of the organic manures, particularly the availability of metals from sewage sludge - Woburn Lansome I.

Sponsor: S.P. McGrath.

The 48th year, clover.

For previous years see 'Details' 1967 & 1973, 74-80/W/RN/4 and 83-88/W/RN/4.

Design: 2 series each of 4 blocks of 10 plots split, systematically, into 2.

Whole plot dimensions: 8.15 x 5.18.

Treatments:

To Series A, second year white clover after two-year white clover, all combinations of:-

Whole plots

1. **OM RESID** Residues of organic manures:

FYM	Farmyard manure until 1967
SEWAGE	Sewage sludge until 1961
SEW COM	Sewage sludge, composted with straw, until 1961
VEG COM	Vegetable compost until 1962, then farmyard manure until 1967

2. **OM RATE** Rates of organic manures (t per crop):

25	
50	
EXTRA	plus one extra treatment (duplicated):
NONE	No organic manures

Sub plots

3. **N RESID** Nitrogen (kg N) per cut in previous years:

0
100

89/W/RN/4

To Series B, second year white clover after four-year white clover,
all combinations of:-

Whole plots

1. **OM RESID** Residues of organic manures:
 - FYM Farmyard manure to whole plots until 1964, to half plots until 1967. Untreated half plots received a balancing dressing in 1974
 - SEWAGE Sewage sludge until 1961
 - SEW COM Sewage sludge, composted with straw, until 1961
 - VEG COM Vegetable compost until 1962, then farmyard manure until 1965

2. **OM RATE** Rates of organic manures (t per crop):
 - 25
 - 50

EXTRA plus one extra treatment (duplicated):

 - PEAT Peat at 31 t per crop to half plots 1965 to 1967. Untreated half plots received a balancing dressing in 1974.

Sub plots

3. **N RESID** Nitrogen (kg N) per cut in previous years:
 - 0
 - 100

Basal applications:

Series A and B: Manure: Magnesian limestone at 5.0 t.

Cultivations, etc.:- Magnesian limestone applied: 16 Dec, 1988. Cut: 2 June, 1989.

NOTE: Yields were taken only from the **N RESID** 0 plots.

89/W/RN/4 WHITE CLOVER SERIES A

1ST AND ONLY CUT (2/6/89) DRY MATTER TONNES/HECTARE

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

OM RESID OM RATE	FYM	SEWAGE	SEW COM	VEG COM	Mean
25	3.59	4.36	3.86	3.82	3.91
50	4.09	4.01	3.75	3.59	3.86
Mean	3.84	4.19	3.80	3.70	3.88

EXTRA NONE 4.17

Grand mean 3.94

*** Standard errors of differences of means ***

OM RESID	OM RATE	OM RESID OM RATE
0.188	0.133	0.265

SED for comparing EXTRA NONE with any item in
OM RESID.OM RATE table is 0.230

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	28	0.375	9.5

1ST CUT MEAN DM% 12.5

PLOT AREA HARVESTED 0.00052

89/W/RN/4 WHITE CLOVER SERIES B

1ST AND ONLY CUT (2/6/89) DRY MATTER TONNES/HECTARE

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

OM RESID OM RATE	FYM	SEWAGE	SEW COM	VEG COM	Mean
25	5.07	5.08	5.06	4.94	5.04
50	4.48	5.39	4.67	5.17	4.93
Mean	4.77	5.23	4.87	5.06	4.98

EXTRA PEAT 4.92

Grand mean 4.97

*** Standard errors of differences of means ***

OM RESID	OM RATE	OM RESID OM RATE
0.279	0.198	0.395

SED for comparing EXTRA PEAT with any item in
OM RESID.OM RATE table is 0.342

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	28	0.559	11.2

1ST CUT MEAN DM% 12.6

PLOT AREA HARVESTED 0.00052