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RESEARCH

## Yields of the Field Experiments 1975

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### 75/ R/C S/169 - Organic Matter & Responses to N - Grass

#### Rothamsted Research

Rothamsted Research (1976) 75/ R/C S/169 - *Organic Matter & Responses to N - Grass* ; Yields Of The Field Experiments 1975, pp 274 - 278 - DOI: <https://doi.org/10.23637/ERADOC-1-141>

75/R/CS/169

ORGANIC MATTER AND RESPONSES TO N

Object: To study the effects of different amounts of organic matter in the soil on the uptake of nitrogen fertiliser by grass - Highfield and Fosters Ley Arable (see also 75/R/RN/1&2).

Sponsors: A.E. Johnston, A. Penny.

The first year, grass.

Design: On each field: 2 blocks of 6 plots for each date of sowing grass.

Whole plot dimensions: 3.50 x 8.23.

Treatments: All combinations of:-

1. Fields:

Highfield (old grass until 1949)  
Fosters (old arable until 1949)

2. Date of sowing grass:

SCW DATE

1949	1949
1973 (grass 1949-1963, arable 1964-1972)	1973

3. Nitrogen fertiliser (kg N) per cut:

N

None (2 plots per block)	0
25	25
50	50
75	75
100	100

Basal applications: Manures: (0:14:28) at 540 kg.

Cultivations, etc.: - PK applied: 15 Jan, 1975. N applied: 25 Apr, 9 June, 11 Aug. Cut: 3 June, 6 Aug, 27 Oct.

75/R/CS/169

GRASS

1ST CUT (3/6/75) DRY MATTER TONNES/HECTARE

\*\*\* TABLES OF MEANS \*\*\*

SOW DATE	1949		1973		MEAN	
	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS
N						
0	4.31	3.23	4.89	4.41	4.60	3.82
25	4.82	3.86	5.88	5.49	5.35	4.68
50	4.95	3.89	6.30	5.47	5.63	4.68
75	5.15	4.48	6.42	5.93	5.79	5.21
100	4.88	4.72	7.09	6.22	5.98	5.47
MEAN	4.74	3.90	5.91	5.32	5.33	4.61

HIGHFIELD ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.213(1)	0.246(3)
	0.246(2)	0.301(1)
		0.348(2)

NOTE (FOR ALL CUTS)

(1) NO V REMAINDER

(2) REMAINDER

(3) NO ONLY

\* WITHIN SAME LEVEL OF SOW DATE ONLY

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.348	6.5

FOSTERS ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.271(1)	0.313(3)
	0.313(2)	0.383(1)
		0.442(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.442	9.6

HIGHFIELD 1ST CUT MEAN DM% 21.4

FOSTERS 1ST CUT MEAN DM% 23.8

75/R/CS/169

GRASS

2ND CUT (6/8/75) DRY MATTER TONNES/HECTARE

\*\*\* TABLES OF MEANS \*\*\*

SOW DATE	1949		1973		MEAN	
	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS
N						
0	0.70	0.52	0.62	0.22	0.66	0.37
25	1.09	0.81	1.09	0.42	1.09	0.62
50	1.57	1.06	1.31	0.80	1.44	0.93
75	1.46	1.33	1.85	0.77	1.66	1.05
100	1.25	1.89	1.47	1.37	1.36	1.63
MEAN	1.13	1.02	1.16	0.63	1.14	0.83

HIGHFIELD ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.138(1)	0.160(3)
	0.160(2)	0.195(1)
		0.226(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.226	19.7

FOSTERS ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.195(1)	0.225(3)
	0.225(2)	0.276(1)
		0.318(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.318	38.5

HIGHFIELD 2ND CUT MEAN DM% 36.3

FOSTERS 2ND CUT MEAN DM% 38.6

75/R/CS/169

GRASS

3RD CUT (27/10/75) DRY MATTER TONNES/HECTARE

\*\*\* TABLES OF MEANS \*\*\*

SOW DATE	1949		1973		MEAN	
	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS
N						
0	0.19	0.05	0.09	0.03	0.14	0.04
25	0.57	0.23	0.34	0.08	0.45	0.16
50	0.77	0.37	0.45	0.21	0.61	0.29
75	0.92	0.44	0.79	0.25	0.86	0.35
100	0.74	0.32	0.38	0.22	0.56	0.27
MEAN	0.56	0.24	0.36	0.14	0.46	0.19

HIGHFIELD ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.061(1)	0.071(3)
	0.071(2)	0.087(1)
		0.100(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.100	21.8

FOSTERS ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.070(1)	0.080(3)
	0.080(2)	0.099(1)
		0.114(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.114	59.6

HIGHFIELD 3RD CUT MEAN DM% 28.1

FOSTERS 3RD CUT MEAN DM% 30.3

75/R/CS/169

GRASS

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

\*\*\* TABLES OF MEANS \*\*\*

SOW DATE N	1949		1973		MEAN	
	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS	HIGHFIELD	FOSTERS
0	5.20	3.80	5.61	4.66	5.40	4.23
25	6.48	4.90	7.31	6.00	6.89	5.45
50	7.29	5.32	8.05	6.48	7.67	5.90
75	7.53	6.25	9.06	6.96	8.30	6.60
100	6.87	6.93	8.94	7.81	7.91	7.37
MEAN	6.43	5.17	7.43	6.09	6.93	5.63

HIGHFIELD ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.256(1)	0.296(3)
	0.296(2)	0.362(1)
		0.418(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.418	6.0

FOSTERS ONLY

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	N	SOW DATE*
		N
SED	0.428(1)	0.494(3)
	0.494(2)	0.605(1)
		0.699(2)

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP.SP	12	0.699	12.4

HIGHFIELD TOTAL OF 3 CUTS MEAN DM% 28.6

FOSTERS TOTAL OF 3 CUTS MEAN DM% 30.9

SUB PLOT AREA HARVESTED 0.00075