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# Yields of the Field Experiments 1985

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## 85/S/CS/1 Factors Affecting Yield - W. Wheat

### Rothamsted Research

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85/S/CS/1

FACTORS AFFECTING YIELD

Object: To study the effects of a range of factors on the yield of w. wheat - Saxmundham.

Sponsors: F.V. Widdowson, A. Penny.

The 20th year, w. wheat.

For previous years see 66/C/30(t), 67/C/23(t), 68/C/39, 69-84/S/CS/1.

Design: The experiment was on two sites, one after beans and one after wheat. On each site the design was a single replicate of 8 whole plots split into 5 sub-plots.

Whole plot dimensions: 8.53 x 18.3.

Treatments: On each site, combinations of:-

Whole plots

1. VARIETY Varieties:

GALAHAD  
MOULIN

2. WINTER N Nitrogen fertilizer (kg N) as urea on 5 Mar, 1985 in addition to a basal application of 50 kg N as urea to the seedbed:

0  
60

3. PATHCONT Pest and pathogen control:

NONE None  
FULL Prochloraz at 0.40 kg with benomyl at 0.28 kg in 220 l on 23 Apr, 1985  
Propiconazole at 0.13 kg with captafol at 1.1 kg in 220 l on 29 May  
Carbendazim at 0.15 kg, maneb at 1.6 kg, tridemorph at 0.37 kg, captafol at 1.1 kg and pirimicarb at 0.14 kg in 220 l on 26 June

Sub plots

4. N RATE Total nitrogen fertilizer applied in spring (kg N) as 'Nitro-Chalk' (26% N) on 16 Apr:

After beans	After wheat
0	0
130	190
160	220
190	250
220	280

NOTE: All treatments were cumulative to those of 1984.

85/S/CS/1

Basal applications: Manures: (0:24:24) at 340 kg (wheat after wheat only). Weedkillers: Isoproturon at 2.5 kg in 220 l. Fluroxypyr at 0.20 kg in 220 l.

Seed: Varieties, sown at 400 seeds per square metre.

Cultivations, etc.: - PK applied (after wheat): 13 Sept, 1984. Ploughed between 13 Sept and 30 Oct date not recorded. Power harrowed, seed sown, seedbed N applied: 30 Oct. Isoproturon applied: 31 Oct. Fluroxypyr applied: 23 Apr, 1985. Combine harvested: 28 Aug.

NOTE: Mineral N content of soil to 90 cm depth and the nitrate content of the crop were assessed in autumn and spring. N content of grain was measured.

W. WHEAT AFTER W. BEANS

GRAIN TONNES/HECTARE

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

WINTER N	0	60	MEAN			
VARIETY						
GALAHAD	8.61	8.16	8.39			
MOULIN	6.26	6.50	6.38			
MEAN	7.44	7.33	7.38			
PATHCONT	NONE	FULL	MEAN			
VARIETY						
GALAHAD	7.76	9.02	8.39			
MOULIN	5.83	6.93	6.38			
MEAN	6.79	7.97	7.38			
PATHCONT	NONE	FULL	MEAN			
WINTER N						
0	6.98	7.90	7.44			
60	6.61	8.05	7.33			
MEAN	6.79	7.97	7.38			
N RATE	0	130	160	190	220	MEAN
VARIETY						
GALAHAD	6.40	8.90	9.06	8.91	8.67	8.39
MOULIN	5.07	6.78	6.79	6.72	6.52	6.38
MEAN	5.74	7.84	7.92	7.82	7.59	7.38
N RATE	0	130	160	190	220	MEAN
WINTER N						
0	5.07	7.85	8.24	8.06	7.97	7.44
60	6.41	7.84	7.61	7.58	7.21	7.33
MEAN	5.74	7.84	7.92	7.82	7.59	7.38

85/S/CS/1 W. WHEAT AFTER W. BEANS

GRAIN TONNES/HECTARE

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

N RATE	0	130	160	190	220	MEAN
PATHCONT						
NONE	5.40	7.40	7.05	7.12	7.01	6.79
FULL	6.08	8.28	8.80	8.52	8.18	7.97
MEAN	5.74	7.84	7.92	7.82	7.59	7.38

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

TABLE	N RATE	VARIETY* N RATE	WINTER N* N RATE	PATHCONT* N RATE
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SED	0.210	0.297	0.297	0.297

\* WITHIN THE SAME LEVEL OF VARIETY, WINTER N OR PATHCONT ONLY

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

STRATUM	DF	SE	CV%
WP.SP	16	0.420	5.7

GRAIN MEAN DM% 85.6

SUB PLOT AREA HARVESTED 0.00126

85/S/CS/1 W. WHEAT AFTER W. WHEAT

GRAIN TONNES/HECTARE

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

WINTER N	0	60	MEAN			
VARIETY						
GALAHAD	6.65	6.67	6.66			
MOULIN	5.13	5.31	5.22			
MEAN	5.89	5.99	5.94			
PATHCONT	NONE	FULL	MEAN			
VARIETY						
GALAHAD	6.04	7.28	6.66			
MOULIN	4.75	5.69	5.22			
MEAN	5.40	6.48	5.94			
PATHCONT	NONE	FULL	MEAN			
WINTER N						
0	5.60	6.18	5.89			
60	5.19	6.79	5.99			
MEAN	5.40	6.48	5.94			
N RATE	0	190	220	250	280	MEAN
VARIETY						
GALAHAD	2.73	8.15	7.61	7.40	7.40	6.66
MOULIN	2.71	6.02	5.99	5.70	5.68	5.22
MEAN	2.72	7.09	6.80	6.55	6.54	5.94
N RATE	0	190	220	250	280	MEAN
WINTER N						
0	1.88	6.98	7.12	6.66	6.82	5.89
60	3.55	7.19	6.48	6.44	6.27	5.99
MEAN	2.72	7.09	6.80	6.55	6.54	5.94
N RATE	0	190	220	250	280	MEAN
PATHCONT						
NONE	2.08	6.57	6.25	6.05	6.03	5.40
FULL	3.36	7.60	7.35	7.05	7.06	6.48
MEAN	2.72	7.09	6.80	6.55	6.54	5.94

85/S/CS/1 W. WHEAT AFTER W. WHEAT

GRAIN TONNES/HECTARE

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

TABLE	N RATE	VARIETY* N RATE	WINTER N* N RATE	PATHCONT* N RATE
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SED	0.272	0.384	0.384	0.384

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

STRATUM	DF	SE	CV%
WP.SP	16	0.543	9.1

GRAIN MEAN DM% 85.9

SUB PLOT AREA HARVESTED 0.00126