

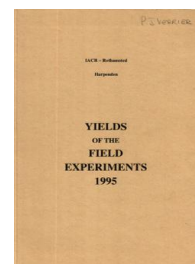
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## Yields of the Field Experiments 1995

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### 95/W/WW/1 Variety, Sulphur and Nitrogen - W. Wheat

#### Rothamsted Research

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95/W/WW/1

# WINTER WHEAT

## VARIETY, SULPHUR AND NITROGEN

**Object:** To measure yield and quality response to sulphur fertilizer on two varieties of wheat - Woburn, Great Hill II/III.

**Sponsors:** S.P. McGrath, F. Zhao.

**Design:** 3 blocks of (2 x 6) + 6 plots

**Plot dimensions:** 3.0 x 10.0.

**Treatments:** All combinations of:-

1. **NITROGEN** Nitrogen fertilizer (kg N) as 27% N at GS 32 in addition to a basal dressing of 180 kg N:

N1	None
N2	50

2. **SULPHUR** Sulphur fertilizer (kg S) as gypsum (17.5% S) at GS 23:

S0	0
S1	20
S2	40
S3	60
S4	80
S5	100

plus 6 extra plots

3. **EXTRA** Variety, timing (growth stage (GS)) and rates of nitrogen fertilizer as urea (kg N), sulphur as ammonium sulphate or gypsum (kg S):

	Variety	N as urea	S as (NH <sub>4</sub> )SO <sub>4</sub>	S as gypsum	Timing (GS)
EUS0	Hereward	50.0	0	0	65
EUS1	Hereward	32.5	20	0	65
EUS2	Hereward	17.0	40	0	65
EUS3	Hereward	32.5	20	20	65 (gypsum at GS 23)
RNS0	Riband	0	0	0	-
RNS2	Riband	0	0	40	23

**NOTE:** All treatments were sown to variety Hereward, except RNS0 and RNS2 which were sown to Riband.

### Experimental diary:

24-Sep-94 : B : Ploughed.  
29-Sep-94 : B : Rolled.  
30-Sep-94 : B : Rotary harrowed.

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**Experimental diary:**

05-Oct-94 : **T** : Hereward and Riband, dressed Cerevax, drilled at 300 seeds m<sup>2</sup>.  
01-Dec-94 : **B** : Panther at 2.0 l with Fastac at 100 ml in 200 l.  
09-Mar-95 : **T** : Sulphur treatments applied as gypsum.  
09-Mar-95 : **B** : 27% N at 148 kg.  
21-Apr-95 : **B** : 34.5% N at 406 kg.  
28-Apr-95 : **B** : Halo at 2.0 l in 200 l.  
04-May-95 : **T** : **NITROGEN** N2: 27% N at 185 kg.  
02-Jun-95 : **B** : Cyclone at 1.0 l with Mallard at 0.5 l in 300 l.  
30-Jun-95 : **B** : Pirimicarb 50 DG at 280 g in 300 l.  
02-Jul-95 : **T** : **EXTRA** EUS0, EUS1, EUS2, EUS3: Half of ammonium sulphate and urea treatments applied.  
10-Jul-95 : **T** : **EXTRA** EUS0, EUS1, EUS2, EUS3: Half of ammonium sulphate and urea treatments applied.  
08-Aug-95 : **B** : Combine harvested.

**NOTES:** (1) Samples of grain and straw were taken for chemical analysis and grain was tested for baking quality. Sequential crop samples were taken from April to August to measure sulphur content. Soil was also sampled for sulphur content.  
(2) One plot with treatment **EXTRA** EUS2 was badly damaged by rabbits. An estimated value was used in the analysis.

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**GRAIN TONNES/HECTARE**

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

<b>SULPHUR</b>	S0	S1	S2	S3	S4	S5	Mean
<b>NITROGEN</b>							
N1	3.85	4.73	4.40	4.54	3.86	4.83	4.37
N2	3.59	4.43	4.71	4.55	3.97	5.03	4.38
Mean	3.72	4.58	4.56	4.55	3.92	4.93	4.38
<b>EXTRA</b>	EUS0	EUS1	EUS2	EUS3	RNS0	RNS2	Mean
	4.80	4.56	4.12	4.40	4.89	5.29	4.68

Grand mean 4.48

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

<b>SULPHUR</b>	<b>NITROGEN</b>	<b>SULPHUR NITROGEN &amp; EXTRA</b>
0.307	0.177	0.435

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	33	0.532	11.9

GRAIN MEAN DM% 90.3

PLOT AREA HARVESTED 0.00176