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## Yields of the Field Experiments 1992

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### 92/R/RAW/4 N, S and Glucosinolates - W. Oilseed Rape

#### Rothamsted Research

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92/R/RAW/4

WINTER OILSEED RAPE

N, S AND GLUCOSINOLATES

**Object:** To study the separate and combined effects of rates of nitrogen and sulphur on the quality and yield of three varieties of w. oilseed rape - Hoosfield Old 4-Course.

**Sponsors:** J.Fieldsand, M. Powell.

**Design:** 4 randomised blocks of 3 x 3 x 3 plots.

**Whole plot dimensions:** 3.0 x 19.0.

**Treatments:** All combinations of:-

1. **VARIETY**                      Varieties:  
  
    ARIANA                      Ariana  
    FALCON                      Falcon  
    TAPIDOR                      Tapidor
  
2.   **N**                              Rates of nitrogen (kg N) in spring:  
  
    0  
    150  
    250
  
3.   **S**                              Rates of sulphur (kg S) in spring:  
  
    0  
    50  
    100

**NOTE:** Sulphur was applied as gypsum (17.5% S).

**Experimental diary:**

- 20-Aug-91 : B : Straw chopped.
- 25-Aug-91 : B : Ploughed.
- 26-Aug-91 : B : Rolled.
- 02-Sep-91 : B : Rotary harrowed twice, rolled.
- 03-Sep-91 : T : **VARIETY** ARIANA: Rotary harrowed, Ariana, dressed, drilled at 6.7 kg.
- 03-Sep-91 : T : **VARIETY** FALCON: Rotary harrowed, Falcon, dressed, drilled at 7.4 kg.
- 03-Sep-91 : T : **VARIETY** TAPIDOR: Rotary harrowed, Tapidor, dressed, drilled at 6.3 kg.
- 03-Sep-91 : B : Rolled.
- 05-Sep-91 : B : Butisan S at 1.5 l in 200 l.
- 24-Oct-91 : B : Pilot at 75 ml with Actipron at 2.0 l in 200 l.
- 19-Feb-92 : T : **N** 150: 34.5% N at 145 kg.
- : T : **N** 250: 34.5% N at 145 kg.
- 05-Mar-92 : T : **S** 50: Gypsum at 284 kg.
- : T : **S** 100: Gypsum at 568 kg.

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**Experimental diary:**

09-Apr-92 : T : N 150: 34.5% N at 290 kg.  
 : T : N 250: 34.5% N at 580 kg.  
 28-Jul-92 : B : Combine harvested.

Previous crops: Linseed, s. beans 1990, w. wheat 1991.

- NOTES:** (1) To allow for differing thousand seed weights of varieties sown, seed rates varied in order to achieve similar numbers of seeds sown per square metre.  
 (2) Soil and crop samples were taken throughout the growing season to measure levels of nitrogen and sulphur. Crop samples were analysed for glucosinolate content. Thousand seed weight was measured throughout seed development period.

**GRAIN (AT 90% DRY MATTER) TONNES/HECTARE**

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

	N	0	150	250	Mean
<b>VARIETY</b>					
ARIANA		1.29	3.09	3.39	2.59
FALCON		1.33	3.10	3.57	2.67
TAPIDOR		1.24	3.02	3.46	2.57
Mean		1.29	3.07	3.48	2.61
	S	0	50	100	Mean
<b>VARIETY</b>					
ARIANA		2.58	2.62	2.57	2.59
FALCON		2.62	2.71	2.67	2.67
TAPIDOR		2.60	2.49	2.63	2.57
Mean		2.60	2.61	2.62	2.61
	S	0	50	100	Mean
<b>N</b>					
0		1.21	1.30	1.34	1.29
150		3.20	3.06	2.95	3.07
250		3.39	3.45	3.58	3.48
Mean		2.60	2.61	2.62	2.61
	S	0	50	100	
<b>VARIETY</b>	<b>N</b>				
ARIANA	0	1.21	1.41	1.25	
	150	3.27	3.06	2.94	
	250	3.27	3.38	3.52	
FALCON	0	1.25	1.37	1.37	
	150	3.12	3.15	3.04	
	250	3.50	3.62	3.61	
TAPIDOR	0	1.18	1.13	1.41	
	150	3.22	2.97	2.86	
	250	3.41	3.36	3.62	

92/R/RAW/4

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

VARIETY	N	S	VARIETY
0.058	0.058	0.058	N 0.100
VARIETY	N	VARIETY	N
S	S	N	S
0.100	0.100	0.174	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	78	0.245	9.4
GRAIN MEAN DM%	86.6		
SUB PLOT AREA HARVESTED	0.00299		