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

Rothamsted Research

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93/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 - Bones Close.

Sponsors: J. Fieldsend, H. Hutchings.

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

Whole plot dimensions: 3.0 x 21.0.

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:

27-Jul-92 : B : Shallow cultivated with Bomford Dynadrive.
28-Jul-92 : B : Rolled.
18-Aug-92 : B : Sting CT at 2.0 l in 200 l.
20-Aug-92 : B : Ploughed, furrow pressed.
29-Aug-92 : T : **VARIETY** ARIANA, FALCON, TAPIDOR: Rotary harrowed. All varieties, dressed Lindex-Plus FS, drilled at 120 seeds per square metre.
 : B : Rolled.
22-Oct-92 : B : Benazalox at 0.75 l and Butisan S at 1.5 l in 200 l.
22-Feb-93 : T : N 150, 250: 34.5% N at 145 kg.
24-Feb-93 : T : S 50: Gypsum at 284 kg.
 : T : S 100: Gypsum at 568 kg.
15-Mar-93 : T : N 150: 34.5% N at 290 kg.
 : T : N 250: 34.5% N at 580 kg.
19-Jul-93 : B : Stefes Diquat at 3.0 l with Vassgro Spreader at 0.40 l in 400 l.
26-Jul-93 : B : Combine harvested.

93/R/RAW/4

Previous crops: W. barley 1991 and 1992.

NOTE: Seed samples were analysed for glucosinolate content.

GRAIN (AT 90% DM) TONNES/HECTARE

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

N	0	150	250	Mean
VARIETY				
ARIANA	3.10	3.23	3.09	3.14
FALCON	3.43	3.66	3.78	3.62
TAPIDOR	3.15	3.48	3.40	3.34
Mean	3.23	3.46	3.42	3.37
S	0	50	100	Mean
VARIETY				
ARIANA	3.13	3.08	3.22	3.14
FALCON	3.52	3.67	3.68	3.62
TAPIDOR	3.24	3.43	3.37	3.34
Mean	3.30	3.39	3.42	3.37
S	0	50	100	Mean
N				
0	3.21	3.23	3.24	3.23
150	3.36	3.52	3.49	3.46
250	3.31	3.43	3.53	3.42
Mean	3.30	3.39	3.42	3.37
VARIETY	S	0	50	100
ARIANA	N			
	0	3.19	2.89	3.23
	150	3.17	3.34	3.19
	250	3.02	3.00	3.24
FALCON	0	3.34	3.42	3.52
	150	3.52	3.80	3.67
	250	3.69	3.79	3.85
TAPIDOR	0	3.11	3.37	2.97
	150	3.39	3.43	3.62
	250	3.23	3.48	3.50

93/R/RAW/4

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

VARIETY	N	S	VARIETY
			N
0.065	0.065	0.065	0.113

VARIETY	N	VARIETY
S	S	N
		S
0.113	0.113	0.196

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

Stratum	d.f.	s.e.	cv%
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BLOCK.WP	78	0.277	8.2
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GRAIN MEAN DM% 87.1

PLOT AREA HARVESTED 0.00483