ROTHAMSTED RESEARCH

Yields of the Field Experiments 1991

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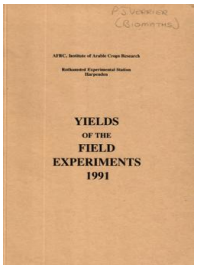

91/R/RAW/4 N, S and Glucosinolates - W. Oilseed Rape

Rothamsted Research

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91/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 - Pastures.

Sponsors: J.E. Fieldsend, J. Spink, J.E. Leach, H. Stevenson.

Design: 4 replicates of 3 x 3 x 3 in blocks of 9 plots.

Whole plot dimensions: 3.0 x 21.0.

Treatments: All combinations of:

1. **VARIETY** Varieties:

ARIANA	Ariana
FALCON	Falcon
LIBRAVO	Libravo

2. **N** Nitrogen fertilizer (kg N) as 'Nitram' on 12 Mar, 1991:

0
150
250

3. **S** Sulphur (kg S) as calcium sulphate on 13 Mar:

0
50
100

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

Basal applications: Manure: Magnesian limestone at 5.0 t. Weedkiller: Metazachlor at 0.75 kg in 200 l. Fungicide: Prochloraz at 0.40 kg in 300 l. Insecticide: Deltamethrin at 6.2 g in 200 l. Irrigation: 25 mm applied on two occasions.

Seed: Varieties, dressed fenpropimorph, gamma-HCH and thiram, sown at 120 seeds per square metre.

Cultivations, etc.:- Magnesian limestone applied: 31 July, 1990. Ploughed: 3 Aug. Rotary harrowed: 28 Aug. Rotary harrowed, seed sown: 29 Aug. Weedkiller applied: 30 Aug. Irrigation applied: 13 and 27 Sept. Deltamethrin applied: 15 Oct. Fungicide applied: 23 Apr, 1991. Combine harvested: 8 Aug. Previous crops: W. wheat 1989, w. barley 1990.

NOTE: Crop samples were taken on five occasions throughout the season and a further five during seed development, to measure nitrogen, sulphur and glucosinolate content.

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91/R/RAW/4

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

N	0	150	250	Mean
VARIETY				
ARIANA	2.94	3.80	3.67	3.47
FALCON	2.87	3.53	3.85	3.42
LIBRAVO	2.88	3.52	3.06	3.15
Mean	2.90	3.61	3.53	3.35

S	0	50	100	Mean
VARIETY				
ARIANA	3.53	3.39	3.49	3.47
FALCON	3.34	3.48	3.43	3.42
LIBRAVO	3.04	3.27	3.15	3.15
Mean	3.30	3.38	3.35	3.35

S	0	50	100	Mean
N				
0	2.99	2.82	2.88	2.90
150	3.47	3.69	3.68	3.61
250	3.44	3.64	3.50	3.53
Mean	3.30	3.38	3.35	3.35

	S	0	50	100
VARIETY	**N**			
ARIANA	0	3.11	2.81	2.90
	150	3.73	3.71	3.94
	250	3.73	3.66	3.61
FALCON	0	3.00	2.74	2.88
	150	3.06	3.76	3.76
	250	3.97	3.94	3.63
LIBRAVO	0	2.86	2.91	2.85
	150	3.63	3.58	3.35
	250	2.63	3.31	3.25

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

VARIETY	**N**	**S**	**VARIETY N**
0.067	0.067	0.067	0.116

VARIETY S	**N S**	**VARIETY N S**
0.116	0.116	0.211

Except when comparing means with the same level(s) of

VARIETY	0.207
N	0.207
S	0.207
VARIETY.N	0.214
VARIETY.S	0.214
N.S	0.214

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
REP.BLOCK.WP	70	0.283	8.5

GRAIN MEAN DM% 82.8

SUB PLOT AREA HARVESTED 0.00345

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