

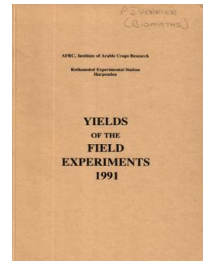
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91/R/RAW/1 Times of Applying Fungicides - W. Oilseed Rape

Rothamsted Research

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91/R/RAW/1

WINTER OILSEED RAPE

TIMES OF APPLYING FUNGICIDES

Object: To study the single and combined effects of prochloraz applied in autumn, spring and summer on the seed quality and yield of two varieties - Black Horse I N.

Sponsors: L. Figueroa, V.J. Church, B.D.L. Fitt.

Design: 2 randomised blocks of 8 plots split into 2 sub plots.

Whole plots dimensions: 9.0 x 22.5.

Treatments: All combinations of:-

Whole plots

- | | |
|--------------------|--------------------------------------|
| 1. AUTSPRAY | Autumn spray: |
| NONE | None |
| PROCHLOR | Prochloraz at 0.50 kg on 3 Dec, 1990 |
| 2. SPRSRAY | Spring spray: |
| NONE | None |
| PROCHLOR | Prochloraz at 0.50 kg on 8 Apr, 1991 |
| 3. SUMSPRAY | Summer spray: |
| NONE | None |
| PROCHLOR | Prochloraz at 0.50 kg on 17 June |

Sub plots

- | | |
|-------------------|------------|
| 4. VARIETY | Varieties: |
| CAPRCORN | Capricorn |
| FALCON | Falcon |

Basal applications: Manure: 'Nitram' at 320 kg on two occasions.
Weedkillers: Paraquat at 0.40 kg ion with a wetting agent, 'Vassgro' at 0.06 l, in 200 l. Metazachlor at 0.75 kg in 200 l. Insecticides: Deltamethrin at 6.2 g in 200 l. Alpha-cypermethrin at 0.02 kg in 200 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent, 'Vassgro' at 0.52 l, in 520 l.

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

Cultivations, etc.:- Burnt straw, heavy spring-tine cultivated: 31 July, 1990. Paraquat with wetting agent applied: 3 Sept. Cultivated by rotary grubber, rotary harrowed, seed sown: 4 Sept. Metazachlor applied: 2 Oct. Deltamethrin applied: 22 Oct. First N applied: 26 Feb, 1991. Second N applied: 22 Mar. Alphacypermethrin applied: 24 Apr. Desiccant with wetting agent applied: 1 Aug. Combine harvested: 6 Aug. Previous crops: W. wheat 1989, w. barley 1990.

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NOTE: Incidence of light leaf spot and other diseases were assessed monthly during the season. Airborne inoculum was monitored from January to March 1991 and plant numbers, before and after spray treatments, were recorded. Oil and glucosinolate content of harvested seed and components of yield were measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SPRSPRAY	NONE	PROCHLOR	Mean
AUTSPRAY			
NONE	3.42	3.64	3.53
PROCHLOR	3.66	3.93	3.79
Mean	3.54	3.78	3.66

SUMSPRAY	NONE	PROCHLOR	Mean
AUTSPRAY			
NONE	3.48	3.58	3.53
PROCHLOR	3.78	3.80	3.79
Mean	3.63	3.69	3.66

SUMSPRAY	NONE	PROCHLOR	Mean
SPRSPRAY			
NONE	3.53	3.55	3.54
PROCHLOR	3.73	3.83	3.78
Mean	3.63	3.69	3.66

VARIETY	CAPRCORN	FALCON	Mean
AUTSPRAY			
NONE	3.26	3.80	3.53
PROCHLOR	3.74	3.84	3.79
Mean	3.50	3.82	3.66

VARIETY	CAPRCORN	FALCON	Mean
SPRSPRAY			
NONE	3.36	3.71	3.54
PROCHLOR	3.64	3.93	3.78
Mean	3.50	3.82	3.66

VARIETY	CAPRCORN	FALCON	Mean
SUMSPRAY			
NONE	3.49	3.77	3.63
PROCHLOR	3.51	3.87	3.69
Mean	3.50	3.82	3.66

91/R/RAW/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

	SPRSPRAY	NONE	PROCHLOR		
AUTSPRAY	SUMSPRAY	NONE	PROCHLOR	NONE	PROCHLOR
NONE		3.39	3.45	3.57	3.71
PROCHLOR		3.66	3.65	3.90	3.96

	SPRSPRAY	NONE	PROCHLOR		
AUTSPRAY	VARIETY	CAPRCORN	FALCON	CAPRCORN	FALCON
NONE		3.11	3.73	3.40	3.88
PROCHLOR		3.62	3.70	3.87	3.99

	SUMSPRAY	NONE	PROCHLOR		
AUTSPRAY	VARIETY	CAPRCORN	FALCON	CAPRCORN	FALCON
NONE		3.22	3.74	3.30	3.86
PROCHLOR		3.76	3.80	3.72	3.88

	SUMSPRAY	NONE	PROCHLOR		
SPRSPRAY	VARIETY	CAPRCORN	FALCON	CAPRCORN	FALCON
NONE		3.39	3.66	3.34	3.76
PROCHLOR		3.59	3.88	3.68	3.98

		SUMSPRAY	NONE	PROCHLOR		
AUTSPRAY	SPRSPRAY	VARIETY	CAPRCORN	FALCON	CAPRCORN	FALCON
NONE	NONE		3.11	3.67	3.11	3.78
	PROCHLOR		3.33	3.81	3.48	3.95
PROCHLOR	NONE		3.68	3.65	3.56	3.75
	PROCHLOR		3.85	3.95	3.89	4.02

91/R/RAW/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

AUTSPRAY	SPRSPRAY	SUMSPRAY	VARIETY
0.071	0.071	0.071	0.042

AUTSPRAY	AUTSPRAY	SPRSPRAY	AUTSPRAY
SPRSPRAY	SUMSPRAY	SUMSPRAY	VARIETY
0.100	0.100	0.100	0.082

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

0.059

SPRSPRAY	SUMSPRAY	AUTSPRAY	AUTSPRAY
VARIETY	VARIETY	SPRSPRAY	SPRSPRAY
		SUMSPRAY	VARIETY
0.082	0.082	0.141	0.116

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

0.059

SUMSPRAY

0.059

AUTSPRAY.SPRSPRAY

0.083

AUTSPRAY	SPRSPRAY	AUTSPRAY
SUMSPRAY	SUMSPRAY	SPRSPRAY
VARIETY	VARIETY	SUMSPRAY
		VARIETY

0.116

0.116

0.164

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

0.083

SPRSPRAY.SUMSPRAY

0.083

AUTSPRAY.SPRSPRAY.SUMSPRAY

0.118

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	7	0.141	3.9
BLOCK.WP.SP	8	0.118	3.2

GRAIN MEAN DM% 79.4

SUB PLOT AREA HARVESTED (VARIES BETWEEN BLOCKS) 0.00518 or 0.00483