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87/R/RA/4 Growth Regulators and Fungicides - W. Oilseed Rape

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Rothamsted Research (1988) *87/R/RA/4 Growth Regulators and Fungicides - W. Oilseed Rape* ;
Yields Of The Field Experiments 1987, pp 220 - 223 - DOI:

<https://doi.org/10.23637/ERADOC-1-37>

87/R/RA/4

WINTER OILSEED RAPE

GROWTH REGULATORS AND FUNGICIDES

Object: To study the effects of a range of materials on the control of fungi and on the growth and the yield of w. oilseed rape - Black Horse I.

Sponsor: C.J. Rawlinson.

Design: Single replicate of 3 x 4 x 2 x 2.

Whole plot dimensions: 3.0 x 20.0.

Treatments: All combinations of:-

Whole plots

- | | |
|--------------|---|
| 1. FUNGICIDE | Fungicides: |
| NONE | None |
| PROCHLOR | Prochloraz at 0.50 kg |
| PROPICON | Propiconazole at 0.12 kg |
| 2. GRTH REG | Growth regulators: |
| NONE | None |
| MEPIQUAT | Mepiquat chloride at 0.915 kg + 2-chlorethyl-phosphonic acid at 0.465 kg |
| TRIAPENT | Triapenthenol (as 'U.K.244a' at 0.70 kg) with a wetting agent ('Cittowett' at 0.10 l) |
| BAS11100 | 'BAS 11100W' at 3.0 l |
| 3. VARIETY | Varieties: |
| ARIANA | |
| PRIMOR | |
| 4. APP TIME | Times of application: |
| AUTUMN | Autumn, on 27 Nov, 1986 |
| SPRING | Spring, on 15 Apr, 1987 |

NOTE: Treatment sprays were applied in 220 l.

Basal applications: Manures: (0:18:36) at 690 kg. 'Nitram' at 140 kg, and later at 800 kg. Weedkillers: Sodium trichloroacetate at 16 kg in 200 l. Metazachlor at 1.2 kg with fluazifop-P-butyl at 0.19 kg and a wetting agent ('Agral' at 0.20 l) in 200 l. Insecticides: Deltamethrin at 0.0062 kg in 200 l. Azinphos methyl at 0.40 kg and demeton-S-methyl sulphone at 0.12 kg in 300 l. Bird repellent: 'Hoppit' at 3.0 l in 220 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Enhance' at 0.50 l) in 500 l.

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Seed: Varieties, sown at 8.0 kg.

Cultivations, etc.: - Spring-tine cultivated: 8 Aug, 1986. PK applied: 11 Aug. Sodium trichloroacetate applied, N applied: 13 Aug. Seed sown: 2 Sept. Remaining weedkillers applied: 4 Oct. Deltamethrin applied: 11 Oct. Bird repellent applied: 12 Dec. Second N applied: 17 Feb, 1987. Remaining insecticides applied: 28 Apr. Desiccant with wetting agent applied: 28 July. Combine harvested: 3 Aug. Previous crops: W. wheat 1985, w. barley 1986.

NOTE: Plant heights and diseases were assessed throughout the season. Flowering dates were noted and plant population counts made at harvest. Growth analysis and plant structure measurements were made just before harvest, stubble stem population counts were made immediately after harvest. Components of yield were measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

GRTH REG	NONE	MEPIQUAT	TRIAPENT	BAS11100	Mean
FUNGIDE					
NONE	2.71	2.84	3.10	2.75	2.85
PROCHLOR	3.19	2.98	3.24	3.20	3.15
PROPICON	2.82	2.78	3.17	3.04	2.95
Mean	2.90	2.86	3.17	2.99	2.98
VARIETY	ARIANA	PRIMOR	Mean		
FUNGIDE					
NONE	3.24	2.45	2.85		
PROCHLOR	3.54	2.76	3.15		
PROPICON	3.25	2.66	2.95		
Mean	3.34	2.62	2.98		
VARIETY	ARIANA	PRIMOR	Mean		
GRTH REG					
NONE	3.36	2.45	2.90		
MEPIQUAT	3.30	2.43	2.86		
TRIAPENT	3.41	2.93	3.17		
BAS11100	3.30	2.69	2.99		
Mean	3.34	2.62	2.98		
APP TIME	AUTUMN	SPRING	Mean		
FUNGIDE					
NONE	2.83	2.86	2.85		
PROCHLOR	3.19	3.11	3.15		
PROPICON	2.96	2.95	2.95		
Mean	2.99	2.97	2.98		

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

APP TIME	AUTUMN	SPRING	Mean		
GRTH REG					
NONE	2.88	2.93	2.90		
MEPIQUAT	2.95	2.78	2.86		
TRIAPENT	3.12	3.22	3.17		
BAS11100	3.02	2.97	2.99		
Mean	2.99	2.97	2.98		
APP TIME	AUTUMN	SPRING	Mean		
VARIETY					
ARIANA	3.39	3.29	3.34		
PRIMOR	2.60	2.65	2.62		
Mean	2.99	2.97	2.98		
FUNGICIDE	VARIETY	ARIANA	PRIMOR		
GRTH REG					
NONE	NONE	3.30	2.12		
	MEPIQUAT	3.24	2.44		
	TRIAPENT	3.41	2.78		
	BAS11100	3.01	2.48		
PROCHLOR	NONE	3.59	2.79		
	MEPIQUAT	3.47	2.49		
	TRIAPENT	3.55	2.93		
	BAS11100	3.54	2.85		
PROPICON	NONE	3.18	2.45		
	MEPIQUAT	3.19	2.37		
	TRIAPENT	3.28	3.07		
	BAS11100	3.34	2.74		
FUNGICIDE	APP TIME	AUTUMN	SPRING		
GRTH REG					
NONE	NONE	2.68	2.74		
	MEPIQUAT	2.81	2.86		
	TRIAPENT	3.04	3.15		
	BAS11100	2.79	2.70		
PROCHLOR	NONE	3.28	3.10		
	MEPIQUAT	3.23	2.72		
	TRIAPENT	3.13	3.35		
	BAS11100	3.14	3.26		
PROPICON	NONE	2.69	2.94		
	MEPIQUAT	2.81	2.75		
	TRIAPENT	3.19	3.16		
	BAS11100	3.13	2.94		
FUNGICIDE	VARIETY	ARIANA	PRIMOR		
APP TIME					
NONE	AUTUMN	SPRING	AUTUMN	SPRING	
	3.21	3.27	2.45	2.46	
PROCHLOR	3.56	3.51	2.82	2.70	
PROPICON	3.39	3.11	2.52	2.79	

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

GRTH REG	VARIETY	ARIANA		PRIMOR	
	APP TIME	AUTUMN	SPRING	AUTUMN	SPRING
NONE		3.24	3.47	2.52	2.38
MEPIQUAT		3.38	3.22	2.53	2.33
TRIAPENT		3.43	3.39	2.81	3.04
BAS11100		3.50	3.09	2.54	2.84

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

Table	FUNGCIDE	GRTH REG	VARIETY	APP TIME
s.e.d.	0.103	0.119	0.084	0.084

Table	FUNGCIDE	FUNGCIDE	GRTH REG	FUNGCIDE
s.e.d.	GRTH REG	VARIETY	VARIETY	APP TIME
	0.206	0.145	0.168	0.145

Table	GRTH REG	VARIETY	FUNGCIDE	FUNGCIDE
s.e.d.	APP TIME	APP TIME	GRTH REG	GRTH REG
			VARIETY	APP TIME
	0.168	0.119	0.291	0.291

Table	FUNGCIDE	GRTH REG
s.e.d.	VARIETY	VARIETY
	APP TIME	APP TIME
	0.206	0.237

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

Stratum	d.f.	s.e.	cv%
WP	6	0.291	9.7

GRAIN MEAN DM% 83.6

PLOT AREA HARVESTED 0.00460