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Yields of the Field Experiments 1990

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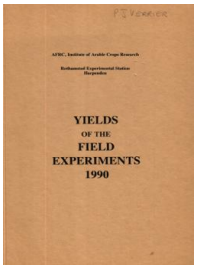

90/R/RA/1 Varieties, Seed Rates, Fungicides and Growth Regulator - W. Oilseed Rape

Rothamsted Research

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90/R/RA/1

WINTER OILSEED RAPE

VARIETIES, SEED RATES, FUNGICIDES AND GROWTH REGULATOR

Object: To study the separate and combined effects of seed rates, fungicides and a growth regulator on the yield of four low-glucosinolate varieties - Bylands/Black Horse I.

Sponsors: C.J. Rawlinson, V.J. Church, D.P. Yeoman.

Design: 2 replicates of 4 x 2 x 2 x 2 arranged in 4 blocks of 16 plots.

Whole plot dimensions: 3.0 x 21.0.

Treatments: All combinations of:-

1. **VARIETY**	Varieties:
CAPRCORN	Capricorn
COBRA	Cobra
LIBRAVO	Libravo
TAPIDOR	Tapidor
2. **SEEDRATE**	Seed rates:
4 KG	
8 KG	
3. **FUNGCIDE**	Fungicides:
NONE	None
PRO+IPRO	Prochloraz at 0.50 kg in 200 l on 7 Dec, 1989 and 28 Mar, 1990 + iprodione at 0.50 kg in 260 l on 23 May
4. **GROWREG**	Growth regulator:
NONE	None
TRIAPEN	Triapenthanol at 0.70 kg in 300 l on 28 Mar, 1990

Basal applications: Manures: (0:17:34) at 980 kg. 'Nitram' at 140 kg, later at 290 kg and a third time at 290 kg. Weedkillers: Diquat at 0.24 kg ion and paraquat at 0.36 kg ion in 180 l. Metazachlor at 0.75 kg in 200 l. Fluazifop-P-butyl at 0.19 kg with a wetting agent, 'Enhance' at 0.20 l, in 200 l. Benazolin at 0.30 kg and clopyralid at 0.05 kg in 200 l. Insecticides: Deltamethrin at 6.2 g in 200 l on two occasions. Triazophos at 0.42 kg in 260 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent, 'Enhance' at 0.52 l, in 520 l (to two blocks only).

Cultivations, etc.:- PK applied: 18 July, 1989. Rotary cultivated: 19 July. Cultivated by rotary grubber: 2 Aug. Diquat and paraquat applied: 21 Aug. First N applied, rotary harrowed: 30 Aug. Seed sown: 31 Aug. Metazachlor applied: 4 Sept. Fluazifop-P-butyl with wetting agent applied: 17 Oct. First deltamethrin applied: 7 Nov. Second deltamethrin applied: 9 Nov. Second N applied: 16 Feb, 1990. Benazolin and clopyralid applied: 22 Feb. Third N applied: 14 Mar.

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90/R/RA/1

Cultivations, etc.:-

Triazophos applied: 23 May. Desiccant with wetting agent applied (**FUNGCIDE** NONE and **GROWREG** NONE plots of two blocks only): 12 July, and the remaining plots of these blocks: 17 July. Combine harvested (**FUNGCIDE** NONE and **GROWREG** NONE plots in the two blocks given desiccant and wetting agent): 19 July, remaining plots in these blocks: 23 July. Other two blocks (except for **VARIETY** TAPIDOR) combine harvested: 2 Aug. **VARIETY** TAPIDOR, on these blocks, combine harvested: 11 Aug. Previous crops: W. wheat 1988, w. barley 1989.

NOTE: Disease assessments were made on seven occasions from November - July. Adult cabbage stem flea beetle damage was assessed in October and April. Establishment counts were made in October and plant populations noted prior to harvest. Crop heights, pollen beetle and frost damage were assessed in May and plant vigour in March and June. Components of yield were measured in June. Glucosinolate and oil content of the seed were measured after harvest.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SEEDRATE	4 KG	8 KG	Mean
VARIETY			
CAPRCORN	2.50	2.69	2.59
COBRA	2.62	2.31	2.46
LIBRAVO	2.29	2.22	2.25
TAPIDOR	2.14	2.31	2.23
Mean	2.39	2.38	2.38

FUNGCIDE	NONE	PRO+IPRO	Mean
VARIETY			
CAPRCORN	2.52	2.66	2.59
COBRA	2.41	2.52	2.46
LIBRAVO	2.11	2.39	2.25
TAPIDOR	2.30	2.16	2.23
Mean	2.34	2.43	2.38

FUNGCIDE	NONE	PRO+IPRO	Mean
SEEDRATE			
4 KG	2.37	2.41	2.39
8 KG	2.31	2.46	2.38
Mean	2.34	2.43	2.38

GROWREG	NONE	TRIAPEN	Mean
VARIETY			
CAPRCORN	2.70	2.49	2.59
COBRA	2.38	2.55	2.46
LIBRAVO	2.15	2.36	2.25
TAPIDOR	2.15	2.31	2.23
Mean	2.34	2.43	2.38

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90/R/RA/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

GROWREG	NONE	TRIAPEN	Mean
SEEDRATE			
4 KG	2.32	2.46	2.39
8 KG	2.37	2.40	2.38
Mean	2.34	2.43	2.38

GROWREG	NONE	TRIAPEN	Mean
FUNGCIDE			
NONE	2.34	2.33	2.34
PRO+IPRO	2.34	2.53	2.43
Mean	2.34	2.43	2.38

	SEEDRATE	4 KG		8 KG	
VARIETY	FUNGCIDE	NONE	PRO+IPRO	NONE	PRO+IPRO
CAPRCORN		2.40	2.59	2.64	2.73
COBRA		2.71	2.53	2.11	2.51
LIBRAVO		2.07	2.50	2.15	2.29
TAPIDOR		2.27	2.01	2.32	2.30

	SEEDRATE	4 KG		8 KG	
VARIETY	GROWREG	NONE	TRIAPEN	NONE	TRIAPEN
CAPRCORN		2.64	2.36	2.75	2.62
COBRA		2.47	2.77	2.29	2.32
LIBRAVO		2.13	2.45	2.17	2.28
TAPIDOR		2.04	2.25	2.26	2.37

	FUNGCIDE	NONE		PRO+IPRO	
VARIETY	GROWREG	NONE	TRIAPEN	NONE	TRIAPEN
CAPRCORN		2.66	2.38	2.73	2.59
COBRA		2.21	2.61	2.55	2.48
LIBRAVO		2.06	2.16	2.23	2.56
TAPIDOR		2.44	2.15	1.85	2.47

	FUNGCIDE	NONE		PRO+IPRO	
SEEDRATE	GROWREG	NONE	TRIAPEN	NONE	TRIAPEN
4 KG		2.15	2.58	2.48	2.33
8 KG		2.54	2.08	2.20	2.72

		FUNGCIDE	NONE		PRO+IPRO	
VARIETY	SEEDRATE	GROWREG	NONE	TRIAPEN	NONE	TRIAPEN
CAPRCORN	4 KG		2.41	2.40	2.87	2.31
	8 KG		2.92	2.37	2.59	2.87
COBRA	4 KG		2.20	3.23	2.75	2.32
	8 KG		2.23	1.99	2.36	2.65
LIBRAVO	4 KG		1.83	2.31	2.42	2.58
	8 KG		2.29	2.01	2.04	2.54
TAPIDOR	4 KG		2.17	2.38	1.90	2.13
	8 KG		2.71	1.93	1.80	2.81

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

VARIETY	SEEDRATE	FUNGCIDE	GROWREG
0.158	0.112	0.112	0.112

VARIETY SEEDRATE	VARIETY FUNGCIDE	SEEDRATE FUNGCIDE	VARIETY GROWREG
0.223	0.223	0.158	0.223

SEEDRATE GROWREG	FUNGCIDE GROWREG	VARIETY SEEDRATE FUNGCIDE	VARIETY SEEDRATE GROWREG
0.158	0.158	0.316	0.316

VARIETY FUNGCIDE GROWREG	SEEDRATE FUNGCIDE GROWREG	VARIETY SEEDRATE FUNGCIDE GROWREG
0.316	0.223	0.447

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

Stratum	d.f.	s.e.	cv%
REP.WP	31	0.447	18.7

GRAIN MEAN DM% 89.2

PLOT AREA HARVESTED 0.00483

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