

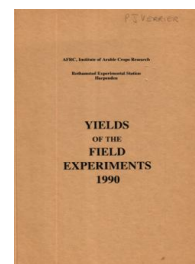
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90/R/RA/7 Bacterial Inoculants - W. Oilseed Rape

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90/R/RA/7

WINTER OILSEED RAPE

BACTERIAL INOCULANTS

Object: To study the effects of two bacterial inoculants on the growth and yield of w. oilseed rape - Little Hoos.

Sponsors: J. Tann, J.M. Day, P.H. Williams, I.J. Webster.

Design: 4 randomised blocks of 10 plots.

Whole plot dimensions: 4.0 x 10.0.

Treatments: All combinations of:-

- | | |
|---------------------|-----------------------------------|
| 1. INOCULANT | Bacterial inoculants: |
| B SUBT 1 | Bacillus subtilis, strain 1 |
| B SUBT 2 | " " " 2 |
| 2. FORMULAT | Formulations: |
| BROTH | Liquid broth to seed |
| SLURRY | Slurry, pre-coated to seed |
| 3. SEEDRESS | Seed dressings: |
| NONE | None |
| FE+LI+TH | Fenpropimorph, lindane and thiram |

plus two extra treatments:

EXTRA

- | | |
|---------|--|
| BO SO | No bacterial inoculant, no seed dressing |
| BO SFLT | No bacterial inoculant, seed dressed fenpropimorph, lindane and thiram |

- NOTES:** (1) Irrigation was applied at 17 mm on 10 Oct, 1989.
(2) The FORMULAT - BROTH treatment was applied as a bacterial culture in standard nutrient broth dripped into the seed furrow at planting.

Basal applications: Manures: 'Nitram' at 290 kg on two occasions.
Weedkillers: Paraquat at 0.60 kg ion in 200 l. Fluazifop-P-butyl at 0.12 kg with metazachlor at 1.2 kg and a wetting agent, 'Enhance' at 0.40 l, in 400 l.

Seed: Cobra, sown at 7.0 kg.

Cultivations, etc.:- Cultivated by rotary grubber: 27 July, 1989.
Paraquat applied: 18 Aug. Rotary harrowed: 22 Aug and 18 Sept. Seed sown: 19 Sept. Remaining weedkillers with wetting agent applied: 25 Oct. First N applied: 16 Feb, 1990. Second N applied: 14 Mar. Combine harvested: 25 July. Previous crops: S. wheat 1988, w. barley 1989.

90/R/RA/7

NOTE: Seedling emergence counts were made and vigour was assessed during the season. Dates of flowering were noted.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FORMULAT INOCLANT	BROTH	SLURRY	Mean
B SUBT 1	2.50	2.78	2.64
B SUBT 2	2.61	2.76	2.68
Mean	2.56	2.77	2.66

SEEDRESS INOCLANT	NONE	FE+LI+TH	Mean
B SUBT 1	2.75	2.53	2.64
B SUBT 2	2.77	2.60	2.68
Mean	2.76	2.56	2.66

SEEDRESS FORMULAT	NONE	FE+LI+TH	Mean
BROTH	2.61	2.50	2.56
SLURRY	2.91	2.63	2.77
Mean	2.76	2.56	2.66

INOCLANT	SEEDRESS FORMULAT	NONE	FE+LI+TH
B SUBT 1	BROTH	2.59	2.40
	SLURRY	2.91	2.65
B SUBT 2	BROTH	2.63	2.59
	SLURRY	2.91	2.60

EXTRA	BO SO	BO SFLT	Mean
	2.41	2.83	2.62

GRAND MEAN 2.65

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

INOCLANT	FORMULAT	SEEDRESS	INOCLANT FORMULAT
0.090	0.090	0.090	0.127
INOCLANT SEEDRESS	FORMULAT SEEDRESS	INOCLANT FORMULAT SEEDRESS	EXTRA
0.127	0.127	0.180	0.180

90/R/RA/7

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.255	9.6
MEAN DM%	87.0		
PLOT AREA HARVESTED	0.00230		