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## Yields of the Field Experiments 1990

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

#### Rothamsted Research

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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. <b>INOCULANT</b> | Bacterial inoculants:             |
| B SUBT 1            | Bacillus subtilis, strain 1       |
| B SUBT 2            | " " " 2                           |
| 2. <b>FORMULAT</b>  | Formulations:                     |
| BROTH               | Liquid broth to seed              |
| SLURRY              | Slurry, pre-coated to seed        |
| 3. <b>SEEDRESS</b>  | 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 \*\*\*\*\*

<b>FORMULAT INOCLANT</b>	<b>BROTH</b>	<b>SLURRY</b>	<b>Mean</b>
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

<b>SEEDRESS INOCLANT</b>	<b>NONE</b>	<b>FE+LI+TH</b>	<b>Mean</b>
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

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

<b>INOCLANT</b>	<b>SEEDRESS FORMULAT</b>	<b>NONE</b>	<b>FE+LI+TH</b>
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

<b>EXTRA</b>	<b>BO SO</b>	<b>BO SFLT</b>	<b>Mean</b>
	2.41	2.83	2.62

GRAND MEAN 2.65

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

<b>INOCLANT</b>	<b>FORMULAT</b>	<b>SEEDRESS</b>	<b>INOCLANT FORMULAT</b>
0.090	0.090	0.090	0.127
<b>INOCLANT SEEDRESS</b>	<b>FORMULAT SEEDRESS</b>	<b>INOCLANT FORMULAT SEEDRESS</b>	<b>EXTRA</b>
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		