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## Yields of the Field Experiments 1997

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### 97/R/RAW/1 Growth of Weeds and Rape - W. Oilseed Rape

#### Rothamsted Research

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97/R/RAW/1

# WINTER OILSEED RAPE

## GROWTH OF WEEDS AND RAPE

**Object:** To investigate factors influencing the vigour of w. rape grown in competition with chickweed and volunteer barley - Bones Close

**Sponsors:** P.J.W. Lutman.

**Design:** 2 randomised blocks of 30 plots.

**Whole plot dimensions:** 3.0 x 15.0.

### Treatments:

1. **BARL DEN** Barley (Gleam dressed Raxil S) density, mean plants per m<sup>2</sup>:

|    |     |
|----|-----|
| B0 | 0   |
| B1 | 66  |
| B2 | 160 |
| B3 | 280 |
| B4 | 448 |
| B5 | 461 |
| B6 | 567 |

2. **CHCK DEN** Chickweed (*Stellaria media*) density, mean plants per m<sup>2</sup>:

|    |      |
|----|------|
| C0 | 0    |
| C1 | 119  |
| C2 | 327  |
| C3 | 598  |
| C4 | 734  |
| C5 | 1536 |
| C6 | 2118 |

**NOTE:** Target weed populations and combinations were as follows:

Target weed populations: Plants per m<sup>2</sup>.

|                  |        | <u>Barley</u> |    |     |     |     |     |     |
|------------------|--------|---------------|----|-----|-----|-----|-----|-----|
|                  |        | 0             | 50 | 100 | 200 | 300 | 400 | 500 |
|                  | 0 (x2) | x             |    | x   | x   | x   | x   | x   |
|                  | 100    | x             | x  | x   | x   | x   |     |     |
|                  | 200    | x             | x  | x   | x   | x   |     |     |
| <u>Chickweed</u> | 400    | x             | x  | x   | x   | x   |     |     |
|                  | 600    | x             | x  | x   | x   | x   |     |     |
|                  | 500    | x             |    |     |     |     |     |     |
|                  | 1200   | x             |    |     |     |     |     |     |

97/R/RAW/1

**Experimental diary:**

09-Sep-96 : B : Chalk at 2.5 t.  
09-Sep-96 : B : Ploughed and furrow pressed.  
10-Sep-96 : B : Harrowed.  
11-Sep-96 : T : Chickweed and barley broadcast by hand. Rotary harrowed, Apex, dressed Vitavax RS, drilled at 120 seeds per m<sup>2</sup>.  
12-Sep-96 : B : Rolled.  
17-Oct-96 : B : Irrigated 25 mm.  
14-Nov-96 : B : Tigress at 1.75 l in 200 l.  
21-Nov-96 : T : **BARL DEN 0**, **CHCK DEN 0**: Katamaran at 2.5 l in 220 l.  
05-Dec-96 : T : **CHCK DEN 0**: Galtak 50 SC at 1.5 l in 200 l.  
28-Feb-97 : B : 34.5% N at 175 kg.  
11-Mar-97 : T : **CHCK DEN 0**: Galtak 50 SC at 1.5 l in 220 l.  
26-Mar-97 : B : 34.5% N at 350 kg.  
09-Apr-97 : B : Barclay Eyetak at 1.1 l with Fastac at 200 ml in 300 l.  
21-Jul-97 : B : Reglone at 3.0 l with Vassgro Non-ionic at 392 ml in 400 l.  
28-Jul-97 : B : Combine harvested.

Previous crops: W. wheat 1995, s. wheat 1996.

- NOTE:**
- (1) The crop failed on 12 plots and one plot (treatment **BARL DEN B6**, **CHCK DEN C0**) yield was lost because of a combine error. The blocks were removed as a covariate to avoid estimating missing values. For treatment combinations lost see note after SED table in the analysis.
  - (2) Assessments of weed emergence were made in autumn. Crop and weed biomass was measured in December, May and June. Visual assessments of ground cover were made in December and plant heights were measured in March.

97/R/RAW/1

CLEANED GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

| CHCK DEN | C0   | C1   | C2   | C3   | C4   | C5   | C6   |
|----------|------|------|------|------|------|------|------|
| BARL DEN |      |      |      |      |      |      |      |
| B0       | 3.97 | 3.80 | 3.76 | 3.40 | 3.10 | 2.84 | 2.86 |
| B1       | 2.91 | 2.68 | 2.81 | 2.60 | 2.38 |      |      |
| B2       | 2.15 | 3.40 | 2.71 | 2.28 | 2.42 |      |      |
| B3       | 2.06 | 1.62 | 1.63 | 1.37 | 1.99 |      |      |
| B4       | 1.41 | 2.17 | 1.83 | 1.46 | 1.00 |      |      |
| B5       | 1.55 |      |      |      |      |      |      |
| B6       | 0.74 |      |      |      |      |      |      |

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

BARL DEN

CHCK DEN

0.397 min.rep

0.362 max-min

BARL DEN

CHCK DEN

min.rep Any of the remainder

max-min B0.C0 v any of the remainder

**NOTE:** SED applies only to the following treatment combinations:-  
B0.C0, B0.C2, B0.C5, B0.C6, B1.C1, B1.C2, B1.C3, B1.C4, B2.C2,  
B2.C3, B2.C4, B3.C0, B3.C3, B3.C4, B4.C0, B4.C1 and B4.C3.

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

| Stratum        | d.f. | s.e.  | cv%  |
|----------------|------|-------|------|
| BLOCK.WP       | 17   | 0.397 | 16.5 |
| GRAIN MEAN DM% | 88.0 |       |      |