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93/R/BEW/2 Weed Competition - Beans and Weeds - W. Beans

Rothamsted Research

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93/R/BEW/2

WINTER BEANS

WEED COMPETITION - BEANS AND WEEDS

Object: To investigate the effects of two weed species on each other and on the growth and yield of winter beans - Bylands.

Sponsors: P.J.W. Lutman, R.C. Van Acker.

Design: 3 blocks of 5 x 5 plots.

Whole plot dimensions: 3.0 x 15.0.

Treatments:

1. **BRLY DEN** Barley density (established plants per square metre):

B0	0
B1	13
B2	30
B3	72
B4	154

2. **CHCK DEN** Chickweed density (established plants per square metre):

C0	0
C1	9
C2	40
C3	186
C4	307

NOTES: (1) Target weed densities (established plants per square metre):

BRLY DEN: 0, 50, 100, 200, 400

CHCK DEN: 0, 50, 200, 600, 1200

(2) Barley and chickweed seeds were sown on restricted areas of each plot as follows:

BRLY DEN central 2m, **CHCK DEN** central 2.5m.

Experimental diary:

29-Sep-92 : B : Ploughed.

30-Oct-92 : B : Spring-tine cultivated.

: T : **BRLY DEN:** B1, B2, B3, B4: Puffin, dressed Cerevax, broadcast by machine.

: T : **CHCK DEN** C1, C2, C3, C4: Chickweed broadcast by hand.

31-Oct-92 : B : Rotary harrowed, Punch, undressed, drilled at 25 seeds per square metre.

17-Dec-92 : B : Draza at 5.5 kg.

10-Jun-93 : B : Pombardier at 2.0 l and Derosal WDG at 0.62 g in 300 l.

01-Sep-93 : B : Harvested by hand.

Previous crops: W. wheat 1991 and 1992.

93/R/BEW/2

NOTE: Leaf area was measured and ground cover assessed for each species on two occasions. Dry weights of all species and number of bean stems per square metre were determined on four occasions. On the fourth occasion components of yield of both barley and beans were measured.

GRAIN TONNES/HECTARE

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

CHCK DEN BRLY DEN	C0	C1	C2	C3	C4	Mean
B0	5.38	4.92	5.07	5.35	5.19	5.18
B1	5.08	5.08	4.41	5.28	5.13	5.00
B2	4.45	5.30	4.49	4.58	4.39	4.64
B3	4.58	4.95	5.43	4.57	4.91	4.89
B4	4.95	4.95	5.09	4.62	3.68	4.66
Mean	4.89	5.04	4.90	4.88	4.66	4.87

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

BRLY DEN	CHCK DEN	BRLY DEN CHCK DEN
0.169	0.169	0.379

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	48	0.464	9.5

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00010