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## Yields of the Field Experiments 1995

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### 95/R/BES/4 Weed Competition and Spring Beans - S. Beans

#### Rothamsted Research

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95/R/BES/4

SPRING BEANS

WEED COMPETITION AND SPRING BEANS

**Object:** To study the effects of three weeds, oats (*Avena sativa*), charlock (*Sinapsis arvensis*) and chickweed (*Stellaria media*), on the growth and yield of spring beans - Webbs.

**Sponsor:** P.J.W. Lutman.

**Design:** 3 randomised blocks of 20 plots.

**Whole plot dimensions:** 3.0 x 10.0.

**Treatments:**

**WEED** Weed species and density, average number of established plants per m<sup>2</sup>:

O1	Oats, 18.2
O2	Oats, 44.8
O3	Oats, 85.3
O4	Oats, 167.7
CE1	Charlock, 0
CE2	Charlock, 0
CE3	Charlock, 22.7
CE4	Charlock, 32.3
CL1	Charlock, 0
CL2	Charlock, 0
CL3	Charlock, 18.9
CL4	Charlock, 37.8
CW1	Chickweed, 39.3
CW2	Chickweed, 68.8
CW3	Chickweed, 152.1
CW4	Chickweed, 309.6
-	None (quadrupled)

**NOTES:** (1) Weeds sown same day as the beans, except CL1-CL4 sown 13 days later.

(2) Oats were cv. Dula dressed Rappor Plus.

(3) Target weed densities, plants per m<sup>2</sup>:

Oats		Charlock		Chickweed			
O1	40	CE1	50	CL1	50	CW1	100
O2	120	CE2	100	CL2	100	CW2	200
O3	240	CE3	200	CL3	200	CW3	400
O4	480	CE4	400	CL4	400	CW4	800

Target sowing date of CL1-CL4 was 10 days after beans.

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**Experimental diary:**

15-Aug-94 : B : Straw baled and removed.  
06-Sep-94 : B : PK as (0:20:32) at 1317 kg.  
11-Nov-94 : B : Stubble topped.  
21-Nov-94 : B : Ploughed.  
21-Mar-95 : B : Spring-tine cultivated.  
23-Mar-95 : **T** : **WEED** O1, O2, O3, O4, CE1, CE2, CE3, CE4, CW1, CW2, CW3,  
CW4: Weed seeds broadcast.  
          : B : Rotary harrowed, Alfred, undressed, drilled at 50 seeds  
          per m<sup>2</sup>.  
05-Apr-95 : **T** : **WEED** CL1, CL2, CL3, CL4: Charlock seed broadcast.  
02-May-95 : B : Decis at 300 ml in 200 l.  
06-Jul-95 : B : Bravo 500 at 3.0 l with Pirimicarb 50 DG at 280 g in  
          220 l.  
29-Aug-95 : B : Combine harvested.

**NOTES:** (1) Weeds failed to establish for **WEED** CE1, CE2, CL1 and CL2 and  
have been omitted from the analysis.  
(2) Weed populations were assessed during April and May. Samples  
of weeds and crop were taken on seven occasions from May to  
August to measure relative rates of growth. Visual and  
photographic assessments of ground cover were made during May  
and June.

95/R/BES/4

GRAIN TONNES/HECTARE

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

WEED	
O1	2.46
O2	2.04
O3	1.92
O4	1.04
CE3	2.84
CE4	2.33
CL3	3.17
CL4	2.58
CW1	3.11
CW2	2.56
CW3	3.23
CW4	2.75
-	3.09

Mean 2.65

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

WEED	
0.417	min.rep
0.208	max.rep

WEED

max-min - v any of the remainder  
min.rep Any of the remainder

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	33	0.511	19.3

GRAIN MEAN DM% not measured

PLOT AREA HARVESTED 0.00020