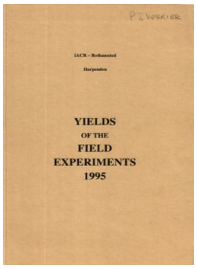
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1995

Full Table of Content



Winter and Spring Beans

Rothamsted Research

Rothamsted Research (1996) *Winter and Spring Beans ;* Yields Of The Field Experiments 1995, pp 125 - 131 **- DOI: https://doi.org/10.23637/ERADOC-1-50**

95/R/BEW/1

WINTER BEANS

PHEROMONE-BAITED TRAP CROP

Object: To use pheromone-baited winter beans as a trap crop to attract spring migrant pea and bean weevils - Long Hoos I/II.

Sponsors: L.E. Smart, B.J. Pye.

Design: 5 x 5 quasi-complete Latin square.

Whole plot dimensions: 6.0 x 6.0.

Treatments:

PHEROMON	Pheromone and insecticide:
-	None
P	Pheromone
PI1	Pheromone with insecticide applied once
PI2	Pheromone with insecticide applied twice
PI3	Pheromone with insecticide applied thrice

Experimental diary:

26-Sep-94 : B : Ploughed and furrow pressed.
21-Oct-94 : B : Spring-tine cultivated, Punch, recleaned, drilled at 25 seeds per m^2.
07-Feb-95 : **T** : **PHEROMON** P, PI1, PI2, PI3: Pheromone applied.
04-Apr-95 : B : Bombardier at 2.0 l in 200 l.
06-Apr-95 : **T** : **PHEROMON** PI1, PI2, PI3: Decis at 300 ml in 200 l.
19-Apr-95 : **T** : **PHEROMON** PI2, PI3: Decis at 300 ml in 200 l.
05-May-95 : **T** : **PHEROMON** PI3: Decis at 300 ml in 200 l.
01-Aug-95 : B : Combine harvested.

Previous crops: W. wheat 1993, s. wheat 1994.

NOTES: (1) From April pheromones were applied from dispensers placed at the plot centres.
(2) Assessments of adult feeding damage were made between February and May.

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95/R/BEW/1

GRAIN TONNES/HECTARE

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

PHEROMON	
-	2.02
P	2.09
PI1	2.02
PI2	2.10
PI3	2.32
Mean	2.11

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

PHEROMON
0.124

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

Stratum	d.f.	s.e.	cv%
ROW.COL	12	0.196	9.3

GRAIN MEAN DM% 88.0

PLOT AREA HARVESTED 0.00276

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95/W/BES/1

SPRING BEANS

BEAN FLOWER COLOUR AND PHEROMONES

Object: To compare the incidence of *Sitona lineatus* in purple and white flowered beans with and without insecticide and pheromone - Woburn, Horsepool Lane Close I.

Sponsors: L.E. Smart, M.M. Blight.

Design: 6 x 6 quasi-complete Latin square.

Whole plot dimensions: 6.0 x 6.0.

Treatments:

1. **VARIETY**

A	Alfred
C	Caspar

2. **INSPHER** Insecticide or pheromone:

-	None
I	Insecticide (deltamethrin)
P	Pheromone

Experimental diary:

23-Mar-95 : B : Heavy spring-tine cultivated.
30-Mar-95 : B : Rotary harrowed.
: **T** : **VARIETY** A: Alfred drilled at 60 seeds per m^2.
: **T** : **VARIETY** C: Caspar drilled at 60 seeds per m^2.
06-Apr-95 : B : Opogard 500 SC at 3.4 l in 200 l.
02-May-95 : **T** : **INSPHER** I: Decis at 300 ml in 200 l.
15-May-95 : **T** : **INSPHER** I: Decis at 300 ml in 200 l.
16-Aug-95 : B : Combine harvested.

Previous crops: W. wheat 1993, w.rye 1994.

NOTES: (1) From late April, pheromone was released from a point source hung above the crop at the plot centre.
(2) Assessments were made of weevil larval numbers in root nodules at the end of May and of damage to leaves by adult weevils in April and May.

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95/W/BES/1

GRAIN TONNES/HECTARE

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

INSPHER	-	I	P	Mean
VARIETY				
A	2.62	2.36	2.49	2.49
C	2.24	2.11	2.40	2.25
Mean	2.43	2.23	2.45	2.37

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

VARIETY	INSPHER	VARIETY INSPHER
0.057	0.070	0.099

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

Stratum	d.f.	s.e.	cv%
ROW.COL	20	0.172	7.3

GRAIN MEAN DM% 86.9

PLOT AREA HARVESTED 0.00264

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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^2:
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^2:

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	C14	400	CW4	800

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

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95/R/BES/4

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^2.
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.

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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

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