

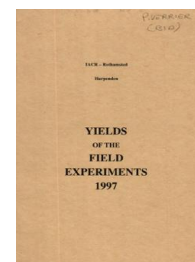
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97/R/BES/3 Mustard Competition in Beans - Spring Beans

Rothamsted Research

Rothamsted Research (1998) *97/R/BES/3 Mustard Competition in Beans - Spring Beans* ; Yields Of The Field Experiments 1997, pp 138 - 140 - DOI: <https://doi.org/10.23637/ERADOC-1-53>

97/R/BES/3

SPRING BEANS

MUSTARD COMPETITION IN BEANS

Object: To study the effects of time of weed (mustard and oats) emergence on the growth and yield of spring beans - Long Hoos I/II.

Sponsor: P.J.W. Lutman.

Design: 3 randomised blocks of 6 x 2 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

TREATMNT Weed density and time of sowing weeds:

M0	None (duplicated)
SE M1	Sown with crop, mustard density 1
SE M2	Sown with crop, mustard density 2
SE M3	Sown with crop, mustard density 3
SE M4	Sown with crop, mustard density 4
SL M1	Sown 10 days after crop, mustard density 1
SL M2	Sown 10 days after crop, mustard density 2
SL M3	Sown 10 days after crop, mustard density 3
SL M4	Sown 10 days after crop, mustard density 4
SE 0	Oats sown with crop
SL 0	Oats sown 10 days after crop

Plant densities:-

Average mustard plants per m²:

SE M1	0
M2	0
M3	24
M4	20
SL M1	31
M2	36
M3	57
M4	152

Average oat plants per m²:

SE 0	90
SL 0	48

NOTE: Plants in treatment SE M1 and SE M2 failed.

Experimental diary:

11-Dec-96 : B : Ploughed.
24-Mar-97 : T : **TREATMNT** SE; M1, M2, M3, M4: Mustard broadcast.
 : T : **TREATMNT** SE 0: Oats broadcast.
 : B : Heavy spring-tine cultivated, rotary harrowed twice,
 Alfred, undressed, drilled at 50 seeds per m².
06-Apr-97 : B : Irrigated 25 mm.

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Experimental diary:

10-Apr-97 : T : TREATMNT SL; M1, M2, M3, M4: Mustard broadcast.
 : T : TREATMNT SL 0: Oats broadcast.
12-Apr-97 : B : Cyperkill 10 at 300 ml with Vassgro Non-ionic at 200 ml
 in 200 l.
16-Apr-97 : B : Irrigated 15 mm.
22-Apr-97 : B : Cyperkill 10 at 300 ml with Vassgro Non-ionic at 50 ml
 in 200 l.
23-Apr-97 : B : Irrigated 30 mm.
30-Apr-97 : B : Cyperkill 10 at 300 ml with Vassgro Non-ionic at 50 ml
 in 200 l.
19-May-97 : B : Cyperkill 10 at 300 ml with Vassgro Non-ionic at 50 ml
 in 300 l.
29-May-97 : B : Cyperkill 10 at 250 ml with Vassgro Non-ionic at 50 ml
 in 300 l.
08-Jul-97 : B : Clayton Turret at 2.0 l with Folio 575 SC at 2.0 l in
 300 l.
21-Aug-97 : B : Hand harvested.

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

- NOTES:** (1) Treatment SE M1 and SE M2 failed and are omitted from the analysis. Samples were taken in June and July of crops and weeds for biomass production.
- (2) Emerging plants were counted in early April and again in May. Stems per plant, heights of beans and mustard plants, oats shoot number and weights were measured in June and July.

97/R/BES/3

GRAIN TONNES/HECTARE

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

TREATMNT	
M0	4.16
SE M3	2.77
SE M4	2.85
SL M1	2.99
SL M2	2.71
SL M3	2.44
SL M4	1.83
SE O	2.45
SL O	3.57
Mean	2.99

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

TREATMNT	
0.444	min.rep
0.385	max-min

TREATMNT	
max-min	M0 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	19	0.544	18.2
GRAIN MEAN DM%	86.4		
PLOT AREA HARVESTED	0.00020		