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

Rothamsted Research

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94/R/BES/4

SPRING BEANS

WEED COMPETITION AND SPRING BEANS

Object: To study the effect of time of emergence on the competition between beans and oats and to correlate assessments of competition and bean yields - Little Hoos.

Sponsor: P.J.W. Lutman.

Design: 3 randomised blocks of 2 x 5 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

1. **SOW DATE** Time of sowing oats:

S2	Same day as beans
S3	Ten days after sowing beans

2. **OAT DEN** Number of established oat plants per m²:

	S2	S3
D0	0	0
D1	23	17
D2	60	53
D3	127	84
D4	192	165

NOTE: Target oat densities, plants per m²: D0 0, D1 40, D2 120, D3 240, D4 480.

Experimental diary:

04-Nov-93 : B : Deep tine cultivated twice.
21-Mar-94 : B : Scythe at 2.0 l in 200 l.
26-Mar-94 : B : Oxytril CM at 1.5 l with Starane 2 at 1.0 l in 200 l.
31-Mar-94 : B : Heavy spring-tine cultivated.
19-Apr-94 : B : Spring-tine cultivated.
20-Apr-94 : B : Rotary harrowed.
 : T : **SOW DATE** S2: Oats broadcast by machine.
 : B : Rotary harrowed, Alfred drilled at 60 seeds per m².
28-Apr-94 : T : **SOW DATE** S3: Oats broadcast by machine.
 : B : Harrowed.
12-May-94 : B : Ripcord at 250 ml in 200 l.
02-Jun-94 : B : Basagran at 3.0 l in 200 l.
08-Jul-94 : B : Bombardier at 1.0 l with Rovral Flo at 1.5 l and
 Pirimicarb 50 DG at 0.28 kg in 200 l.
15-Aug-94 : B : Hand harvested.

Previous crops: S. barley 1992, potatoes 1993.

94/R/BES/4

NOTE: Dry weight, ground cover and leaf area of crop and weed were assessed throughout the summer with the main samples taken in June, July and August.

GRAIN TONNES/HECTARE

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

OAT DEN SOW DATE	D0	D1	D2	D3	D4	Mean
S2	2.42	1.83	1.41	1.03	0.42	1.42
S3	2.19	2.30	1.70	1.48	1.12	1.76
Mean	2.30	2.07	1.55	1.26	0.77	1.59

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

SOW DATE	OAT DEN	SOW DATE
		OAT DEN
0.150	0.238	0.336

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	18	0.411	25.9

MEAN DM% *

PLOT AREA HARVESTED 0.00010