ROTHAMSTED RESEARCH

Yields of the Field Experiments 1991

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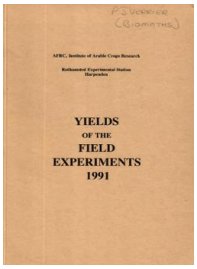

91/R/M/1 Crops and Weed Competition - S. Barley, S. Beans, Peas, Linseed, S. Oilseed Rape - Mixed Crops

Rothamsted Research

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91/R/M/1

S. BARLEY, S. BEANS, LINSEED, PEAS, S. RAPE

CROPS AND WEED COMPETITION

Object: To study the effects of a range of populations of spring oats on the growth and yield of s. barley, s. beans, linseed, peas and s. rape and the effects of these crops on the spring oats - Summerdells I.

Sponsor: P.J.W. Lutman.

Design: 6 plots, each divided into 3 blocks of 6 sub plots.

Whole plot dimensions: 54.0 x 10.0.

Treatments: All combinations of:

Whole plots

1. **CROP**	Crops:
S BARLEY	S. barley
S BEANS	S. beans
FALLOW	Fallow
LINSEED	Linseed
PEAS	Peas
S RAPE	S. oilseed rape

Sub plots

2. **OAT RATE**	Rates of broadcasting Dula s. oats (seeds per square metre):
0	
10	
40	
120	
240	
480	

NOTE: To prevent damage from birds PEAS and S RAPE plots were netted from emergence to harvest.

Standard applications:-

All crops and fallow: Manure: FYM at 25 t.

S. barley: Manure: 'Nitram' at 350 kg. Weedkiller: Metsulfuron-methyl at 6.0 g with the fungicide in 200 l. Fungicide: Fenpropimorph at 0.38 kg.

S. beans: Weedkillers: Terbutryne at 0.98 kg and terbuthylazine at 0.42 kg in 200 l. Fungicide: Chlorothalonil at 1.5 kg in 200 l with the pirimicarb. Insecticides: Deltamethrin at 7.5 g in 200 l on two occasions. Pirimicarb at 0.14 kg.

Fallow: Weedkiller: Metsulfuron-methyl at 6.0 g with the fungicide in 200 l. Fungicide: Fenpropimorph at 0.38 kg.

Linseed: Manure: 'Nitram' at 220 kg. Weedkillers: Bromoxynil at 0.24 kg and clopyralid at 0.05 kg with bentazone at 0.96 kg in 200 l. Insecticide: Deltamethrin at 7.5 g in 200 l.

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Standard applications:-
Peas: Weedkillers: Terbutryne at 0.98 kg and terbuthylazine at 0.42 kg in 200 l. Insecticide: Deltamethrin at 7.5 g in 220 l.
S. rape: Manure: 'Nitram' at 350 kg. Weedkiller: Metazachlor at 0.75 kg in 200 l. Insecticide: Alpha-cypermethrin at 0.02 kg in 220 l.

Seed: S. barley: Doublet, sown at 160 kg.
S. beans: Troy, sown at 250 kg.
Linseed: Antares, dressed prochloraz, sown at 50 kg.
Peas: Solara, dressed thiram, sown at 260 kg.
S. rape: Topas, sown at 6.0 kg.

Cultivations, etc.:-
All plots: FYM applied: 17 Jan, 1991. Ploughed: 21 Jan. Spring-tine cultivated twice, oat treatments broadcast: 25 Mar. Rotary harrowed all plots, seed sown (except to fallow): 26 Mar.
S. barley: N applied: 15 Apr, 1991. Weedkiller and fungicide applied: 17 June. Combine harvested: 10 Sept.
S. beans: Weedkillers applied: 27 Mar, 1991. Deltamethrin applied: 20 May, 18 June. Pirimicarb with the fungicide applied: 10 July. Combine harvested: 10 Sept.
Fallow: Weedkiller with the fungicide applied: 17 June, 1991.
Linseed: N applied: 15 Apr, 1991. Deltamethrin applied: 7 May. Weedkillers applied: 6 June. Cut: 2 Oct.
Peas: Weedkillers applied: 27 Mar, 1991. Deltamethrin applied: 20 May. Cut: 2 Oct.
S. rape: Weedkiller applied: 3 Apr, 1991. N applied: 15 Apr. Insecticide applied: 18 June. Cut: 2 Oct. Previous crops: W. wheat 1989, w. beans 1990.

NOTES: (1) Samples were taken in June and July to assess the effects of spring oats on the growth of the crops. Components of yield were measured.
(2) Because of an error during the threshing of PEAS, the yields of two plots were lost, with **OAT RATE** 0 and 10. Estimated values were used in the analysis.

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91/R/M/1 SPRING BARLEY

GRAIN TONNES/HECTARE

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

OAT RATE	0	10	40	120	240	480	Mean
	5.64	6.03	4.12	4.52	3.38	2.38	4.34

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

OAT RATE
0.369

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.452	10.4

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00001

SPRING BEANS

GRAIN TONNES/HECTARE

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

OAT RATE	0	10	40	120	240	480	Mean
	5.02	5.20	4.60	2.90	2.12	1.32	3.53

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

OAT RATE
0.414

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.508	14.4

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00001

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91/R/M/1 LINSEED

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

OAT RATE	0	10	40	120	240	480	Mean
	2.96	2.43	1.81	0.84	0.32	0.16	1.42

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

OAT RATE
0.128

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.1565	11.0

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00001

PEAS

GRAIN TONNES/HECTARE

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

OAT RATE	0	10	40	120	240	480	Mean
	6.73	4.25	2.73	1.65	0.84	0.35	2.76

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

OAT RATE
0.310

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	8	0.3796	13.7

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00001

https://doi.org/10.23637/ERADOC-1-46

91/R/M/1 SPRING RAPE

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

OAT RATE	0	10	40	120	240	480	Mean
	2.61	2.62	2.34	1.91	0.95	0.50	1.82

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

OAT RATE
0.358

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.438	24.1

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00001

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