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92/R/RAS/1 Weed Competition and Spring Rape - S. Oilseed Rape

Rothamsted Research

Rothamsted Research (1993) *92/R/RAS/1 Weed Competition and Spring Rape - S. Oilseed Rape* ; Yields Of The Field Experiments 1992, pp 135 - 137 - DOI:

<https://doi.org/10.23637/ERADOC-1-47>

92/R/RAS/1

SPRING OILSEED RAPE

WEED COMPETITION AND SPRING RAPE

Object: To study the relative competitive effects of two weed species and oats at different fertilizer nitrogen levels on the growth and yield of s. oilseed rape - Sawyers I E.

Sponsor: P.J.W. Lutman.

Design: 3 randomised blocks of 20 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. **SPECIES** Weed species:

CHICKWD	Chickweed (<i>Stellaria media</i>)
CHARLOCK	Charlock (<i>Sinapis arvensis</i>)

2. **DENSITY** Weed density (plants per square metre):

	CHICKWEED	CHARLOCK
D0	0	0
D1	128	8
D2	235	18
D3	672	24
D4	1220	62

plus all combinations of:

1. **DENSITYN** Density of chickweed (plants per square metre):

ND1	0
ND2	1194

2. **N** Nitrogen fertilizer (kg N):

50
100
150
200

plus 2 extra plots

OAT RATE Density of cultivated oats (*Avena sativa*) (plants per square metre):

OT1	79
OT2	240

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- NOTES:** (1) Target weed densities (number of plants per square metre):
 SPECIES CHICKWD: 0, 150, 300, 600 and 1200.
 SPECIES CHARLOCK: 0, 30, 60, 120 and 240.
 DENSITYN: 0 and 600.
- (2) Target weed sowing densities (number of seeds sown per square metre):
 OAT RATE: 120 and 480.

Experimental diary:

- 06-Sep-91 : B : Straw chopped.
31-Oct-91 : B : Ploughed (start).
26-Nov-91 : B : Ploughed (finish).
21-Feb-92 : B : PK as (0:18:36) at 940 kg.
09-Apr-92 : T : N 50: 34.5% N at 145 kg.
 : T : N 100: 34.5% N at 290 kg.
 : T : N 150: 34.5% N at 435 kg.
 : T : N 200: 34.5% N at 580 kg.
09-Apr-92 : B : Spring-tine cultivated twice.
10-Apr-92 : B : Rotary harrowed, Puma, dressed Lindex-Plus FS, drilled
 at 6.2 kg.
10-Apr-92 : T : **OAT RATE** 120: Dula, broadcast at 120 seeds per square
 metre.
10-Apr-92 : T : **OAT RATE** 480: Dula, broadcast at 480 seeds per square
 metre.
26-Jun-92 : B : Ripcord at 0.30 l in 260 l.
25-Aug-92 : T : Hand harvested (start).
29-Aug-92 : T : Hand harvested (finish).

Previous crops: W. wheat 1990, s. beans 1991.

NOTE: Crop and weed counts were made and dry weight samples were taken at intervals during the growing season.

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

DENSITY SPECIES	D0	D1	D2	D3	D4	Mean
CHICKWD	3.02	3.04	3.15	2.99	3.21	3.08
CHARLOCK	3.26	3.04	2.77	2.52	2.10	2.74
Mean	3.14	3.04	2.96	2.75	2.65	2.91
N	50	100	150	200	Mean	
DENSITYN						
ND1	2.92	2.89	3.21	3.32	3.09	
ND2	2.75	3.12	3.01	3.13	3.00	
Mean	2.84	3.00	3.11	3.23	3.05	
OAT RATE						
OT1	1.31					
OT2	0.38					
Mean	0.84					

GRAND MEAN 2.76

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

SPECIES	DENSITY	DENSITN	N
0.080	0.127	0.090	0.127
OAT RATE	SPECIES	DENSITN	N
0.179	0.179	0.179	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	38	0.219	8.0

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00020