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73/R/CS/125 - Varieties B Aldicarb - Oats

Rothamsted Research

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73/R/CS/125

VARITIES AND ALDICARB

Object: To study the effects of previous cropping and aldicarb on yield and incidence of *Heterodera avenae* on three varieties of spring oats - Pennell's Piece.

Sponsor: T.D. Williams.

The first year, oats. The experiment is sited on what was previously the spring wheat series of the Cereal Disease Reference Plots (see 73/R/RN/9).

Design: 2 randomised blocks of 6 plots split into 2 breadthways for aldicarb and 3 lengthways for variety.

Whole plot dimensions: 4.27 x 17.1. Area harvested: 0.00091.

Treatments: All combinations of:-

Whole plots: 1. Previous crops:										PREVCROP
1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	
W	W	W	BE	O	W	W	W	BE	O	W/W/BE/O
W	W	BE	O	W	W	W	BE	O	W	W/BE/O/W
W	BE	O	W	W	W	BE	O	W	W	BE/O/W/W
BE	O	W	W	W	BE	O	W	W	W	O/W/W/W
O	W	W	W	BE	O	W	W	W	BE	W/W/W/BE
W	W	W	W	W	W	W	W	W	W	W/W/W/W

where W = spring wheat, BE = spring beans, O = spring oats

Sub plots: 2. Aldicarb (kg):	ALDICARB
None	0
5	5
3. Varieties:	VARIETY
Nelson, resistant to <i>Heterodera avenae</i>	Nelson
Mostyn, susceptible to <i>Heterodera avenae</i>	Mostyn
Weibull's W16840, resistant to <i>Heterodera avenae</i>	W16840

Basal applications: Manures: Ground chalk at 10 tonnes. (0:20:20) at 1300 kg. Weedkiller: MCPA, mecoprop and dicamba ('Tetralix Plus' at 7.0 l in 290 l).

73/R/CS/125

Seed: Sown at 190 kg.

Cultivations, etc.:— Ploughed: 12 Oct, 1972. Chalk applied: 30 Oct.
Ft applied: 20 Feb, 1973. Aldicarb applied and rotary cultivated:
13 Mar. Seed sown: 14 Mar. Weedkiller applied: 21 May. Combine
harvested: 22 Aug.

NOTE: Soil samples were taken for determination of initial eelworm
population on 27 Feb, 1973 and for final population on
30 Aug.

Standard errors per plot. Grain: tonnes/hectare.

Whole plot:	0.876 or 14.5% (5 d.f.)
Sub plot: ALDICARB:	0.828 or 13.7% (6 d.f.)
VARIETY:	0.476 or 7.9% (12 d.f.)
ALDICARB x	
VARIETY:	0.467 or 6.7% (12 d.f.)

73/R/CS/125

TABLE OF MEANS

GRAIN: TONNES/HECTARE

PREVCROP

	W/W/BE/O	W/BE/O/W	BE/O/W/W	O/W/W/W	W/W/W/BE	W/W/W/W	Mean
ALDICARB							
0	5.48	6.67	5.52	5.48	6.15	3.97	5.54
5	6.47	6.58	6.47	6.48	6.67	6.60	6.55
VARIETY							
Nelson	6.06	6.64	5.57	5.50	6.56	4.81	5.86
Mostyn	5.83	6.34	5.69	5.68	6.33	5.68	5.92
W16840	6.03	6.90	6.74	6.76	6.34	5.37	6.36
Mean	5.97	6.63	6.00	5.98	6.41	5.29	6.05

ALDICARB VARIETY	0			5		
	Nelson	Mostyn	W16840	Nelson	Mostyn	W16840
PREVCROP						
W/W/BE/O	5.93	5.12	5.38	6.20	6.54	6.67
W/BE/O/W	6.29	6.95	6.77	6.98	5.74	7.03
BE/O/W/W	4.80	5.35	6.41	6.33	6.03	7.07
O/W/W/W	4.93	5.49	6.02	6.07	5.86	7.51
W/W/W/BE	6.35	6.04	6.05	6.78	6.61	6.62
W/W/W/W	3.57	4.59	3.75	6.05	6.76	6.99

73/R/CS/125

STANDARD ERRORS OF DIFFERENCES

PREVCROP	ALDICARB	VARIETY	PREVCROP ALDICARB	PREVCROP VARIETY	PREVCROP ALDICARB VARIETY
0.876	0.338	0.194	1.054	0.959	1.147
Except when comparing means with same levels of					
PREVCROP			0.828	0.476	0.969
PREVCROP,ALDICARB					0.556
PREVCROP,VARIETY					0.892

Mean D.M. % 83.6