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Yields of the Field Experiments 1981

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81/W/CS/35 Nematicides Dosage - W. Wheat, S. Barley

Rothamsted Research

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81/W/CS/35

NEMATICIDES DOSAGE

Object: To study the effects of rates and methods of applying nematicides on *Globodera rostochiensis* and yield of potatoes; residual effects are also studied - Woburn Stackyard AII.

Sponsor: A.G. Whitehead.

The tenth year, w. wheat, s. barley.

For previous years see 72/W/CS/35(t) and 73-80/W/CS/35.

Design: 2 series each of 4 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 6.10.

Treatments:-

The experiment has two series with the following cropping:-

	1968-71	72	73	74	75	76	77	78	79	80	81
Series II	P	P	P*	SB	B	B	P*	P	P	P*	B
Series III	P	P	P	P*	SB	B	P*	P	P	P*	W

Series I was damaged by soil erosion and has been excluded from the experiment since 1980.

P = Potatoes, SB = Sugar beet, B = S. barley, W = W. wheat

*Treatments applied to potatoes, following two crops test residual effects.

Treatments:

Series II, s. barley 1981, tests the residual effects of new sets of treatments applied for potatoes in 1979, ignoring those applied in earlier years. All combinations of:-

1. A NEM(79) Residual effects of nematicide applied autumn 1978:
 NONE None
 TELONE 'Telone' at 22.5 g
2. S NEM(79) Residual effects of nematicide applied spring 1979:
 ALDICARB
 OXAMYL
3. SNEMRATE Rates of spring nematicides (kg):
 2.5
 5.0
 7.5
 10.0

81/W/CS/35

plus two untreated plots per block

RATE

NONE

Series III, w. wheat 1981, tests the residual effects of new sets of treatments applied for potatoes in 1980, ignoring those applied in earlier years. All combinations (duplicated) of:-

1. S NEM(80) Spring nematicides:

ALDICARB
OXAMYL

2. SNEMRATE Rates of spring nematicides (kg):

2.5
5.0
7.5
10.0

plus two untreated plots per block

RATE

NONE

Standard applications:

- S. barley (Series II): Manures: (20:10:10) at 450 kg. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 280 l with the fungicide. Fungicide: Tridemorph at 0.53 kg.
W. wheat (Series III): Manures: Magnesian limestone at 5.0 t. (10:23:23) at 260 kg. N at 150 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 2.4 l).

Seed: S. barley: Triumph, dressed with ethirimol, sown at 160 kg.
W. wheat: Flanders, sown at 190 kg.

Cultivations, etc.:-

- S. barley (Series II): Ploughed: 10 Nov, 1980. NPK applied: 19 Feb, 1981. Spring-tine cultivated with crumbler attached: 26 Feb. Seed sown: 27 Feb. Weedkillers with fungicide applied: 15 May. Combine harvested: 17 Aug.
W. wheat (Series III): Magnesian limestone applied: 14 Oct, 1980. Heavy spring-tine cultivated, NPK applied, spring-tine cultivated with crumbler attached, seed sown: 15 Oct. N applied: 10 Apr, 1981. Weedkillers applied: 22 Apr. Combine harvested: 19 Aug.

NOTE: Because of soil erosion the yields of three plots of s. barley, Series II, were lost, one untreated plot and two with treatment combinations

A NEM(79)	Telone	None
S NEM(79)	Oxamyl	Aldicarb
SNEMRATE	2.5	2.5

Estimated values were used in the analysis.

81/W/CS/35

SERIES III WINTER WHEAT

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

	2.5	5.0	7.5	10.0	MEAN
SNEMRATE					
S NEM(80)					
ALDICARB	6.47	6.42	6.43	6.08	6.35
OXAMYL	6.06	6.04	6.59	6.19	6.22
MEAN	6.26	6.23	6.51	6.13	6.28

RATE NONE 5.71

GRAND MEAN 6.22

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	S NEM(80)	SNEMRATE	S NEM(80) SNEMRATE & RATE NONE
-----	-----	-----	-----
SED	0.161	0.228	0.322

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	60	0.645	10.4

MEAN DM% 83.9

PLOT AREA HARVESTED 0.00130

SERIES II SPRING BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

S NEM(79) A NEM(79)	ALDICARB	OXAMYL	MEAN		
NONE	5.39	5.45	5.42		
TELONE	5.58	5.65	5.62		
MEAN	5.48	5.55	5.52		
SNEMRATE A NEM(79)	2.5	5.0	7.5	10.0	MEAN
NONE	5.24	5.30	5.41	5.73	5.42
TELONE	5.36	5.49	5.80	5.80	5.62
MEAN	5.30	5.40	5.61	5.76	5.52

81/W/CS/35

SERIES II SPRING BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

	2.5	5.0	7.5	10.0	MEAN
SNEMRATE					
S NEM(79)					
ALDICARB	5.23	5.43	5.61	5.66	5.48
OXAMYL	5.37	5.37	5.61	5.86	5.55
MEAN	5.30	5.40	5.61	5.76	5.52
	2.5	5.0	7.5	10.0	
A NEM(79)					
NONE					
ALDICARB	5.12	5.51	5.26	5.66	5.66
OXAMYL	5.35	5.10	5.57	5.79	5.79
TELONE	5.34	5.35	5.96	5.66	5.66
OXAMYL	5.39	5.64	5.65	5.94	5.94

RATE NONE 5.22

GRAND MEAN 5.48

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	A NEM(79)	S NEM(79)	SNEMRATE	A NEM(79) S NEM(79)

SED	0.142	0.142	0.200	0.200
TABLE	A NEM(79)	S NEM(79)	A NEM(79)	
	SNEMRATE	SNEMRATE	S NEM(79)	
			SNEMRATE	

SED	0.283	0.283	0.400	

SED FOR RATE NONE V ANY MEAN IN
A NEM(79).S NEM(79).SNEMRATE TABLE IS 0.347

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	49	0.566	10.3

GRAIN MEAN DM% 86.4

PLOT AREA HARVESTED 0.00168