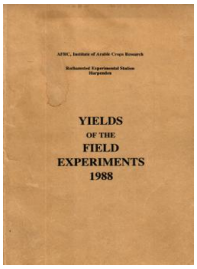
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1988

Full Table of Content



88/W/CS/34 Nematicides in Crop Sequence - Potatoes, W. Wheat, S. Barley

Rothamsted Research

Rothamsted Research (1989) *88/W/CS/34 Nematicides in Crop Sequence - Potatoes, W. Wheat, S. Barley ;* Yields Of The Field Experiments 1988, pp 81 - 84 **- DOI: https://doi.org/10.23637/ERADOC-1-43**

88/W/CS/34

NEMATICIDES IN CROP SEQUENCE

Object: To study the effects of a range of nematicides on the incidence of Globodera rostochiensis and the yield of potatoes. Residual effects of previous treatments are studied in wheat and barley - Woburn Great Hill II and III.

Sponsor: A.G. Whitehead.

The 18th year, potatoes, w. wheat, s. barley.

For previous years see 71/W/CS/34(t), 72/W/CS/34(t) and 73-87/W/CS/34.

Design: 4 series of 3 blocks of 10 plots.

Whole plot dimensions: 4.27 x 9.14.

Treatments: The experiment has four series with the following cropping:-

	1970	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88
Series I	P	P*	SB	B	P	P*	W	B	P	P*	B	B	P	P*	W	B	P	P	W
Series II	P	P	P*	SB	B	P	P*	W	B	P	P*	W	B	P	P*	B	B	P	P
Series III	B	P	P	P*	SB	B	P	P*	W	B	P	P*	W	B	P	P*	W	B	P
Series IV	B	P	P	P	P*	SB	B	P	P*	W	B	P	P*	W	B	P	P*	W	B

P = potatoes, SB = sugar beet, B = s. barley, W = w. wheat

* Treatments applied to potatoes, subsequent crops test residual effects. In 1987 and 1988 new treatments were not applied to Series I and Series II respectively and in 1988 yields were not taken from potatoes on Series II and III.

Treatments to w. wheat (Series I): All combinations of:-

1. **NEMACIDE[83]** Nematicides applied 1983:

   FMC65201
   FMC67825
   OXAMYL

2. **RATE** Rates of nematicide (kg a.i.):

   2.8
   5.6
   11.2

plus one untreated plot

RATE

0.0

https://doi.org/10.23637/ERADOC-1-43

88/W/CS/34

Treatments to s. barley (Series IV):

1. **NEMACIDE[86]** Residues of nematicides and rates (a.i.) applied 1986:

AL 3.3	Aldicarb at 3.3 kg
AL 6.6	Aldicarb at 6.6 kg
AL S 3.3	Aldicarb, slow release formulation at 3.3 kg
AL S 6.6	Aldicarb, slow release formulation at 6.6 kg
ETH 7.5	Ethoprophos at 7.5 kg
MB 5.0	'MB 41380' at 5.0 kg
MB 7.5	'MB 41380' at 7.5 kg
MB 10.0	'MB 41380' at 10.0 kg
OX 5.0	Oxamyl at 5.0 kg
NONE	None

Standard applications:

Potatoes (Series II and III): Manures: (10:10:15+4.5 Mg) at 2400 kg. Weedkiller: Linuron at 1.5 kg in 220 l. Fungicides: Mancozeb at 1.4 kg on five occasions, applied with the pirimicarb on the first, second and last occasions, in 220 l. Fentin hydroxide at 0.28 kg in 220 l. Insecticide: Pirimicarb at 0.14 kg on three occasions. Nematicide: Oxamyl at 5.0 kg, Series II only. Desiccant: Diquat at 0.80 kg ion in 400 l.

W. wheat (Series I): Manures: Chalk at 5.0 t. N at 40 kg and later at 117 kg, applied as 'Nitram'. Weedkillers: Isoproturon at 2.1 kg with mecoprop at 1.6 kg, bromoxynil at 0.20 kg and ioxynil at 0.20 kg in 220 l. Clopyralid at 0.07 kg and bromoxynil at 0.34 kg with mecoprop at 2.5 kg in 220 l. Fungicides: Propiconazole at 0.12 kg with carbendazim at 0.12 kg in 220 l.

S. barley (Series IV): Manures: Chalk at 5.0 t. (20:10:10) at 580 kg. Weedkillers: Clopyralid at 0.07 kg and bromoxynil at 0.34 kg with mecoprop at 2.5 kg in 220 l. Fungicides: Tridemorph at 0.52 kg in 220 l. Propiconazole at 0.12 kg with carbendazim at 0.12 kg in 220 l.

Seed: Potatoes: Pentland Crown.
W. wheat: Avalon, sown at 190 kg.
S. barley: Klaxon, sown at 150 kg.

Cultivations, etc.:-

Potatoes (Series II and III): Ploughed: 2 Mar, 1988. Heavy spring-tine cultivated: 5 Apr. NPK Mg applied: 7 Apr. Oxamyl applied; Series II only, rotary cultivated, potatoes planted: 21 Apr. Rotary ridged, linuron applied: 13 May. Mancozeb applied: 15 July and 1 Aug. Mancozeb with pirimicarb applied: 14 June, 5 July and 15 Aug. Fentin hydroxide applied: 30 Aug. Desiccant applied: 6 Sept. Haulm mechanically destroyed: 16 Sept. Lifted: 26 Sept.

W. wheat (Series I): Chalk applied, spring-tine cultivated twice, seed sown, spring-tine cultivated: 14 Oct, 1987. N applied: 8 Mar, 1988 and 5 May. Isoproturon, bromoxynil, ioxynil and mecoprop applied: 26 Apr. Clopyralid, bromoxynil and mecoprop applied: 6 May. Fungicides applied: 18 June. Combine harvested: 26 Aug.

https://doi.org/10.23637/ERADOC-1-43

88/W/CS/34

Cultivations, etc.:-
S. barley (Series IV): Chalk applied: 14 Oct, 1987. Ploughed, NPK applied, spike harrowed with crumbler attached, seed sown: 2 Mar, 1988. Weedkillers applied: 6 May. Tridemorph applied: 27 May. Propiconazole and carbendazim applied: 18 June. Combine harvested: 17 Aug.

W.WHEAT SERIES I

GRAIN TONNES/HECTARE

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

RATE	2.8	5.6	11.2	Mean
NEMACIDE[83]				
FMC65201	3.99	3.87	3.57	3.81
FMC67825	3.75	4.29	3.97	4.00
OXAMYL	4.03	3.72	4.09	3.95
Mean	3.92	3.96	3.87	3.92

RATE 0.0 3.41

Grand mean 3.87

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

NEMACIDE[83]	**RATE**	**NEMACIDE[83] RATE & RATE** 0.0
0.244	0.244	0.423

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	18	0.518	13.4

GRAIN MEAN DM% 85.0

PLOT AREA HARVESTED 0.00251

https://doi.org/10.23637/ERADOC-1-43

88/W/CS/34

S.BARLEY SERIES IV

GRAIN TONNES/HECTARE

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

NEMACIDE[86]

AL 3.3	5.14
AL 6.6	4.82
AL S 3.3	4.88
AL S 6.6	4.85
ETH 7.5	4.84
MB 5.0	4.73
MB 7.5	4.50
MB 10.0	4.46
OX 5.0	4.98
NONE	4.64
Mean	4.78

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

NEMACIDE[86]
0.382

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	18	0.468	9.8

GRAIN MEAN DM% 86.8

PLOT AREA HARVESTED 0.00251

https://doi.org/10.23637/ERADOC-1-43