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77/R/PE/1 and 77/W/PE/1 Control of Pathogens - Peas

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77/R/PE/1 and 77/W/PE/1

PEAS

CONTROL OF PATHOGENS

Object: To study the effects of a range of pesticides on the incidence of pathogens and on the yield of leafless peas - Rothamsted (R), Long Hoos V 1 and Woburn (W) Far Field I.

Sponsors: A.J. Cockbain, K.E. Fletcher, J. McEwen, G.A. Salt, C. Wall, A.G. Whitehead.

Design: 3 blocks of 2 x 2 x 2. Randomisation restricted.

Whole plot dimensions: 4.19 x 5.49.

Treatments: All combinations of:-

- | | |
|--------------|--|
| 1. NEMACIDE | Nematicide: |
| NONE | None |
| ALDICARB | Aldicarb at 10 kg to the seedbed |
| 2. INSECTIDE | Insecticide: |
| NONE | None |
| TRIAZOPH | Triazophos at 0.34 l in 680 l |
| 3. FUNGICIDE | Fungicide: |
| NONE | None |
| BEN+ZIN | Benomyl at 0.56 + zineb at 1.6 kg in 340 l |

Basal applications: Manures: Chalk at 2.9 t to Long Hoos V 1 (R) only. (0:14:28) at 880 kg to Long Hoos V 1 (R). (0:14:28) at 340 kg to Far Field I (W).

Weedkillers: Trietazine plus simazine ('Remtal' at 2.2 kg Long Hoos V 1 (R), at 1.7 kg Far Field I (W)), both in 330 l.

Seed: BS4, dressed thiram, sown at 220 kg Long Hoos V 1 (R), sown at 270 kg Far Field I (W).

Cultivations, etc.: Long Hoos V 1 (R): Chalk applied: 8 Sept, 1976. Deep-tine cultivated: 13 Sept. PK applied: 8 Nov. Ploughed: 8 Nov-14 Dec. Power harrowed: 6 Apr, 1977. Treatment nematicide applied and all plots power harrowed: 7 Apr. Seed sown: 8 Apr. Weedkillers applied: 15 Apr. Treatment insecticide applied: 7 July. Treatment insecticide repeated and fungicides applied: 22 July. Harvested by hand: 6 Sept. Previous crops: Potatoes 1975, spring wheat 1976.

Far Field I (W): Heavy spring-tine cultivated: 19 Aug, 1976. Ploughed twice: 6 Sept, 15 Feb, 1977. Spring-tine cultivated: 30 Mar. Treatment nematicide applied, PK applied, all plots power harrowed and seed sown: 4 Apr. Weedkillers applied: 13 Apr. Treatment insecticide applied: 6 July. Treatment insecticide repeated and fungicides applied: 22 July. Harvested by hand: 5 Sept. Previous crops: Potatoes 1975, wheat 1976.

NOTE: Pea moth was monitored throughout the season at both sites and pea moth damage was assessed. Observations were made on diseases and pests throughout the season.

77/R/PE/1 LONG HOOS V I(R)

GRAIN TONNES/HECTARE

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

INSCTCDE	NONE	TRIAZOPH	MEAN
NEMACIDE			
NONE	3.27	3.48	3.38
ALDICARB	3.56	3.59	3.57
MEAN	3.41	3.54	3.47

FUNGCIDE	NONE	BEN+ZIN	MEAN
NEMACIDE			
NONE	3.35	3.41	3.38
ALDICARB	3.53	3.62	3.57
MEAN	3.44	3.51	3.47

FUNGCIDE	NONE	BEN+ZIN	MEAN
INSCTCDE			
NONE	3.41	3.42	3.41
TRIAZOPH	3.47	3.60	3.54
MEAN	3.44	3.51	3.47

INSCTCDE	NONE	TRIAZOPH		
FUNGCIDE	NONE	BEN+ZIN	NONE	BEN+ZIN
NEMACIDE				
NONE	3.31	3.23	3.39	3.58
ALDICARB	3.51	3.60	3.55	3.63

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

TABLE	NEMACIDE	INSCTCDE	FUNGCIDE	NEMACIDE INSCTCDE
SED	0.113	0.113	0.113	0.160

TABLE	NEMACIDE FUNGCIDE	INSCTCDE FUNGCIDE	NEMACIDE INSCTCDE FUNGCIDE
SED	0.160	0.160	0.226

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

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.277	8.0
GRAIN MEAN DM%	76.0		

77/R/PE/1 LONG HOOS V I(R)

STRAW TONNES/HECTARE

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

INSCTCDE	NONE	TRIAZOPH	MEAN
NEMACIDE			
NONE	4.69	5.06	4.87
ALDICARB	5.28	5.00	5.14
MEAN	4.99	5.03	5.01

FUNGCIDE	NONE	BEN+ZIN	MEAN
NEMACIDE			
NONE	4.70	5.05	4.87
ALDICARB	5.18	5.10	5.14
MEAN	4.94	5.07	5.01

FUNGCIDE	NONE	BEN+ZIN	MEAN
INSCTCDE			
NONE	4.82	5.15	4.99
TRIAZOPH	5.05	5.00	5.03
MEAN	4.94	5.07	5.01

INSCTCDE	NONE	TRIAZOPH		
FUNGCIDE	NONE	BEN+ZIN	NONE	BEN+ZIN
NEMACIDE				
NONE	4.24	5.15	5.16	4.96
ALDICARB	5.41	5.15	4.95	5.04

STRAW MEAN DM% 71.4

PLOT AREA HARVESTED 0.00091

77/W/PE/1 FARFIELD I(W)

GRAIN TONNES/HECTARE

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

INSTCDE	NONE	TRIAZOPH	MEAN
NEMACIDE			
NONE	2.81	3.08	2.95
ALDICARB	3.74	3.86	3.80
MEAN	3.28	3.47	3.37

FUNGCIDE	NONE	BEN+ZIN	MEAN
NEMACIDE			
NONE	2.95	2.94	2.95
ALDICARB	3.59	4.01	3.80
MEAN	3.27	3.48	3.37

FUNGCIDE	NONE	BEN+ZIN	MEAN
INSTCDE			
NONE	3.22	3.33	3.28
TRIAZOPH	3.32	3.62	3.47
MEAN	3.27	3.48	3.37

INSTCDE	NONE	TRIAZOPH		
FUNGCIDE	NONE	BEN+ZIN	NONE	BEN+ZIN
NEMACIDE				
NONE	2.85	2.76	3.04	3.12
ALDICARB	3.58	3.91	3.60	4.12

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

TABLE	NEMACIDE	INSTCDE	FUNGCIDE	NEMACIDE INSTCDE
SED	0.127	0.127	0.127	0.180

TABLE	NEMACIDE FUNGCIDE	INSTCDE FUNGCIDE	NEMACIDE INSTCDE FUNGCIDE
SED	0.180	0.160	0.254

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

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.312	9.2
GRAIN MEAN DM%	80.4		

77/W/PE/1 FARFIELD I(W)

STRAW TONNES/HECTARE

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

INSCTCDE	NONE	TRIAZOPH	MEAN
NEMACIDE			
NONE	2.48	2.68	2.58
ALDICARB	3.01	2.90	2.96
MEAN	2.74	2.79	2.77

FUNGCIDE	NONE	BEN+ZIN	MEAN
NEMACIDE			
NONE	2.64	2.52	2.58
ALDICARB	2.86	3.05	2.96
MEAN	2.75	2.78	2.77

FUNGCIDE	NONE	BEN+ZIN	MEAN
INSCTCDE			
NONE	2.70	2.78	2.74
TRIAZOPH	2.80	2.78	2.79
MEAN	2.75	2.78	2.77

INSCTCDE	NONE	TRIAZOPH		
FUNGCIDE	NONE	BEN+ZIN	NONE	BEN+ZIN
NEMACIDE				
NONE	2.48	2.48	2.80	2.56
ALDICARB	2.93	3.09	2.80	3.00

STRAW MEAN DM% 85.5

PLOT AREA HARVESTED 0.00091