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Yields of the Field Experiments 1977

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77/R/CS/140 Chemical Reference Plots - Barley

Rothamsted Research

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77/R/CS/140

CHEMICAL REFERENCE PLOTS

Object: To study the persistence in soil of four agricultural chemicals applied annually, singly and in combination and their effects on soil microflora and on yield of continuous barley - Long Hoos V 3.

Sponsors: G.G. Briggs, N. Walker, R. MacDonald.

The fourth year, barley.

For previous years see 74-76/R/CS/140.

Design: Two replicates of 2 x 2 x 2 x 2 fully randomised.

Whole plot dimensions: 4.06 x 4.57.

Treatments, applied cumulatively 1974-77 except WEEDKLLR - 1974 and 76 only:
All combinations of:-

1. FUNGCIDE Fungicide:

NONE	None
BENOMYL	Benomyl at 4 kg applied 10 Mar, 1977

2. INSCTCDE Insecticide:

NONE	None
CHLORFEN	Chlorfenvinphos at 2 kg applied 10 Mar

3. NEMACIDE Nematicide:

NONE	None
ALDICARB	Aldicarb at 6 kg applied 10 Mar

4. WEEDKLLR Weedkiller:

NONE	None
CHLORTOL	Chlortoluron at 2 kg applied 1974 and 1976 only

NOTE: Chemicals applied to the seedbed.

Basal applications: Manures: (0:14:28) at 880 kg, 'Nitro-Chalk' at 500 kg.
Weedkillers: Dicamba with mecoprop and MCPA ('Tetrallex Plus' at 5.6 l in 340 l).

Seed: Julia (undressed), sown at 160 kg.

Cultivations, etc.: - Deep-tine cultivated: 13 Sept, 1976. PK applied: 8 Nov.
Ploughed: 9 Nov-14 Dec. N applied, spring-tine cultivated: 9 Mar, 1977.
Power harrowed: 10 Mar. Seed sown: 11 Mar. Weedkillers applied: 23 May.
Combine harvested: 29 Aug.

NOTE: Mildew and aphids were assessed during the season.

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GRAIN TONNES/HECTARE

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

INSCTCDE	NONE	CHLORFEN	MEAN	
FUNGICIDE				
NONE	4.89	4.53	4.71	
BENOMYL	4.98	4.67	4.83	
MEAN	4.93	4.60	4.77	
NEMACIDE	NONE	ALDICARB	MEAN	
FUNGICIDE				
NONE	4.56	4.87	4.71	
BENOMYL	4.41	5.24	4.83	
MEAN	4.48	5.05	4.77	
NEMACIDE	NONE	ALDICARB	MEAN	
INSCTCDE				
NONE	4.72	5.15	4.93	
CHLORFEN	4.25	4.96	4.60	
MEAN	4.48	5.05	4.77	
WEEDKLLR	NONE	CHLORTOL	MEAN	
FUNGICIDE				
NONE	4.83	4.59	4.71	
BENOMYL	5.05	4.60	4.83	
MEAN	4.94	4.60	4.77	
WEEDKLLR	NONE	CHLORTOL	MEAN	
INSCTCDE				
NONE	4.93	4.94	4.93	
CHLORFEN	4.95	4.26	4.60	
MEAN	4.94	4.60	4.77	
WEEDKLLR	NONE	CHLORTOL	MEAN	
NEMACIDE				
NONE	4.78	4.18	4.48	
ALDICARB	5.09	5.01	5.05	
MEAN	4.94	4.60	4.77	
INSCTCDE	NONE	CHLORFEN		
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
FUNGICIDE				
NONE	4.77	5.01	4.34	4.72
BENOMYL	4.66	5.30	4.15	5.19
INSCTCDE	NONE	CHLORFEN		
WEEDKLLR	NONE	CHLORTOL	NONE	CHLORTOL
FUNGICIDE				
NONE	4.81	4.97	4.85	4.22
BENOMYL	5.05	4.91	5.05	4.29

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GRAIN TONNES/HECTARE

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

NEMACIDE	NONE		ALDICARB	
WEEDKLLR	NONE	CHLORTOL	NONE	CHLORTOL
FUNGCIDE				
NONE	4.79	4.32	4.87	4.86
BENOMYL	4.78	4.04	5.32	5.17

NEMACIDE	NONE		ALDICARB	
WEEDKLLR	NONE	CHLORTOL	NONE	CHLORTOL
INSCTCDE				
NONE	4.77	4.66	5.09	5.21
CHLORFEN	4.80	3.70	5.10	4.82

	NEMACIDE	NONE		ALDICARB	
	WEEDKLLR	NONE	CHLORTOL	NONE	CHLORTOL
FUNGCIDE	INSCTCDE				
NONE	NONE	4.78	4.75	4.84	5.18
	CHLORFEN	4.80	3.89	4.90	4.55
BENOMYL	NONE	4.75	4.58	5.34	5.25
	CHLORFEN	4.80	3.50	5.29	5.09

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

TABLE	FUNGCIDE	INSCTCDE	NEMACIDE	WEEDKLLR
SED	0.148	0.148	0.148	0.148

TABLE	FUNGCIDE	FUNGCIDE	INSCTCDE	FUNGCIDE
	INSCTCDE	NEMACIDE	NEMACIDE	WEEDKLLR
SED	0.209	0.209	0.209	0.209

TABLE	INSCTCDE	NEMACIDE	FUNGCIDE	FUNGCIDE
	WEEDKLLR	WEEDKLLR	INSCTCDE	INSCTCDE
			NEMACIDE	WEEDKLLR
SED	0.209	0.209	0.296	0.296

TABLE	FUNGCIDE	INSCTCDE	FUNGCIDE
	NEMACIDE	NEMACIDE	INSCTCDE
	WEEDKLLR	WEEDKLLR	NEMACIDE
			WEEDKLLR
SED	0.296	0.296	0.419

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

STRATUM	DF	SE	CV%
WP	16	0.419	8.8

GRAIN MEAN DM% 85.8

PLOT AREA HARVESTED 0.00075