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Yields of the Field Experiments 1975

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

Rothamsted Research

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75/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 second year, barley.

For previous year see 74/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 to 1974 except WEEDKILLR - 1974 only:

All combinations of:-

1. Fungicide:	FUNGICIDE
None	NONE
Benomyl at 4 kg applied 22 Apr, 1975	BENOMYL
2. Insecticide:	INSECTICIDE
None	NONE
Chlorfenvinphos at 2 kg applied 22 Apr, 1975	CHLORFEN
3. Nematicide:	NEMACIDE
None	NONE
Aldicarb at 6 kg applied 22 Apr, 1975	ALDICARB
4. Weedkiller:	WEEDKILLR(74)
None	NONE
Chlortoluron at 2 kg applied 1974 only	CHLORTOL

Basal applications: Manures: (20:14:14) at 500 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Tetralix Plus' at 7.0 l in 340 l).

Seed: Julia - undressed, sown at 160 kg.

Cultivations, etc.: Ploughed: 19 Sept, 1974. Power harrowed, NPK applied, seed sown: 22 Apr, 1975. Weedkiller applied: 6 June. Combine harvested: 13 Aug.

- NOTES: (1) Mildew and aphid numbers were assessed in May, June and July, and barley yellow dwarf virus in July. Chemical residues in the soil were assessed throughout the season and aldicarb in the crop in July.
- (2) There was evidence of a linear trend across the site, and yields adjusted for this trend are presented.

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GRAIN TONNES/HECTARE

*** TABLES OF MEANS ***

INSCTCDE	NONE	CHLORFEN	MEAN
FUNGCIDE			
NONE	5.01	5.08	5.05
BENOMYL	5.22	5.39	5.31
MEAN	5.12	5.23	5.18

NEMACIDE	NONE	ALDICARB	MEAN
FUNGCIDE			
NONE	4.75	5.34	5.05
BENOMYL	4.96	5.66	5.31
MEAN	4.86	5.50	5.18

NEMACIDE	NONE	ALDICARB	MEAN
INSCTCDE			
NONE	4.88	5.35	5.12
CHLORFEN	4.83	5.64	5.23
MEAN	4.86	5.50	5.18

WEEDKLR(74)	NONE	CHLORTOL	MEAN
FUNGCIDE			
NONE	5.05	5.05	5.05
BENOMYL	5.13	5.49	5.31
MEAN	5.09	5.27	5.18

WEEDKLR(74)	NONE	CHLORTOL	MEAN
INSCTCDE			
NONE	5.07	5.17	5.12
CHLORFEN	5.10	5.37	5.23
MEAN	5.09	5.27	5.18

WEEDKLR(74)	NONE	CHLORTOL	MEAN
NEMACIDE			
NONE	4.77	4.94	4.86
ALDICARB	5.40	5.60	5.50
MEAN	5.09	5.27	5.18

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GRAIN TONNES/HECTARE

INSCTCDE	NONE		CHLORFEN		
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB	
FUNGCIDE					
NONE	4.70	5.33	4.81	5.35	
BENOMYL	5.06	5.38	4.85	5.93	
INSCTCDE	NONE		CHLORFEN		
WEEDKLLR(74)	NONE	CHLORTOL	NONE	CHLORTOL	
FUNGCIDE					
NONE	5.04	4.99	5.05	5.10	
BENOMYL	5.10	5.35	5.15	5.63	
NEMACIDE	NONE		ALDICARB		
WEEDKLLR(74)	NONE	CHLORTOL	NONE	CHLORTOL	
FUNGCIDE					
NONE	4.72	4.78	5.37	5.31	
BENOMYL	4.82	5.09	5.43	5.89	
NEMACIDE	NONE		ALDICARB		
WEEDKLLR(74)	NONE	CHLORTOL	NONE	CHLORTOL	
INSCTCDE					
NONE	4.86	4.91	5.28	5.43	
CHLORFEN	4.69	4.97	5.52	5.76	
NEMACIDE	NONE		ALDICARB		
WEEDKLLR(74)	NONE	CHLORTOL	NONE	CHLORTOL	
FUNGCIDE					
INSCTCDE					
NONE	NONE	4.75	4.65	5.32	5.33
CHLORFEN	NONE	4.69	4.92	5.41	5.28
BENOMYL	NONE	4.96	5.16	5.23	5.53
CHLORFEN	NONE	4.69	5.02	5.62	6.25

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

TABLE	FUNGCIDE	INSCTCDE	NEMACIDE	WEEDKLLR(74)
SED	0.129	0.135	0.128	0.133
TABLE	FUNGCIDE INSCTCDE	FUNGCIDE NEMACIDE	INSCTCDE NEMACIDE	FUNGCIDE WEEDKLLR(74)
SED	0.185	0.182	0.189	0.186
TABLE	INSCTCDE WEEDKLLR(74)	NEMACIDE WEEDKLLR(74)	FUNGCIDE INSCTCDE NEMACIDE	FUNGCIDE INSCTCDE WEEDKLLR(74)
SED	0.191	0.188	0.261	0.265
TABLE	FUNGCIDE NEMACIDE WEEDKLLR(74)	INSCTCDE NEMACIDE WEEDKLLR(74)	FUNGCIDE INSCTCDE NEMACIDE WEEDKLLR(74)	
SED	0.261	0.268	0.372	

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GRAIN TONNES/HECTARE

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

STRATUM	DF	SE	CV%
WP	15	0.362	7.0

GRAIN MEAN DM% 89.1

PLOT AREA HARVESTED 0.00075