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# Yields of the Field Experiments 1980

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## 80/R/CS/140 Chemical Reference Plots

### Rothamsted Research

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80/R/CS/140

CHEMICAL REFERENCE PLOTS

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

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

The sixth year, s. barley.

For previous years see 74-79/R/CS/140.

Design: Single replicate of 32 plots.

Whole plot dimensions: 4.06 x 4.57.

Treatments, applied cumulatively 1974-79 except WEEDKLLR(1) - 1974 and 76 only and WEEDKLLR(2) - 1980 only:

All combinations of:-

- |                |  |
|----------------|--|
| 1. FUNGCIDE    | Fungicide:   |
| NONE           | None   |
| BENOMYL        | Benomyl at 4 kg to the seedbed                                     |
| 2. INSTCDE     | Insecticide:   |
| NONE           | None   |
| CHLORFEN       | Chlorfenvinphos at 2 kg to the seedbed                             |
| 3. NEMACIDE    | Nematicide:  |
| NONE           | None   |
| ALDICARB       | Aldicarb at 6 kg to the seedbed as granules                        |
| 4. WEEDKLLR(1) | Weedkiller in spring:  |
| NONE           | None   |
| CHLORTOL       | Chlortoluron at 2 kg soon after sowing, applied 1974 and 1976 only |
| 5. WEEDKLLR(2) | Weedkiller in autumn:  |
| NONE           | None   |
| GLYPHOS        | Glyphosate at 1.5 kg to stubble of 1979 s. barley.                 |

NOTE: Glyphosate was applied on 13 Sept, 1979. Other treatments were applied on 5 Mar, 1980.

Basal applications: 'Nitro-Chalk' at 450 kg. Weedkillers: Dicamba with mecoprop and MCPA (as 'Tetralex Plus' at 5.6 l in 340 l).  
Fungicide: Tridemorph at 0.53 kg in 340 l.

Seed: Georgie, seed not dressed, sown at 160 kg.

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Cultivations, etc.:- Ploughed: 29 Oct, 1979. N applied, spring-tine cultivated: 4 Mar, 1980. Spring-tine cultivated, power harrowed, seed sown: 5 Mar. Weedkillers applied: 11 May. Fungicide applied: 4 June. Combine harvested: 19 Aug.

NOTE: Mildew and aphids were assessed during the season.

GRAIN TONNES/HECTARE

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

INSCTCDE	NONE	CHLORFEN	MEAN
FUNGCIDE			
NONE	4.68	4.78	4.73
BENOMYL	4.79	4.68	4.73
MEAN	4.74	4.73	4.73
NEMACIDE	NONE	ALDICARB	MEAN
FUNGCIDE			
NONE	4.63	4.84	4.73
BENOMYL	4.77	4.69	4.73
MEAN	4.70	4.76	4.73
NEMACIDE	NONE	ALDICARB	MEAN
INSCTCDE			
NONE	4.74	4.73	4.74
CHLORFEN	4.66	4.80	4.73
MEAN	4.70	4.76	4.73
WEEDKLLR(1)	NONE	CHLORTOL	MEAN
FUNGCIDE			
NONE	4.68	4.78	4.73
BENOMYL	4.62	4.85	4.73
MEAN	4.65	4.82	4.73
WEEDKLLR(1)	NONE	CHLORTOL	MEAN
INSCTCDE			
NONE	4.69	4.78	4.74
CHLORFEN	4.61	4.85	4.73
MEAN	4.65	4.82	4.73
WEEDKLLR(1)	NONE	CHLORTOL	MEAN
NEMACIDE			
NONE	4.53	4.87	4.70
ALDICARB	4.77	4.76	4.76
MEAN	4.65	4.82	4.73

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GRAIN TONNES/HECTARE

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

WEEDKLLR(2)	NONE	GLYPHOS	MEAN	
FUNGCIDE				
NONE	4.66	4.80	4.73	
BENOMYL	4.65	4.82	4.73	
MEAN	4.65	4.81	4.73	
WEEDKLLR(2)	NONE	GLYPHOS	MEAN	
INSCTCDE				
NONE	4.67	4.80	4.74	
CHLORFEN	4.64	4.82	4.73	
MEAN	4.65	4.81	4.73	
WEEDKLLR(2)	NONE	GLYPHOS	MEAN	
NEMACIDE				
NONE	4.64	4.77	4.70	
ALDICARB	4.67	4.86	4.76	
MEAN	4.65	4.81	4.73	
WEEDKLLR(2)	NONE	GLYPHOS	MEAN	
WEEDKLLR(1)				
NONE	4.60	4.70	4.65	
CHLORTOL	4.71	4.92	4.82	
MEAN	4.65	4.81	4.73	
INSCTCDE	NONE	ALDICARB	CHLORFEN	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
FUNGCIDE				
NONE	4.64	4.73	4.62	4.95
BENOMYL	4.85	4.73	4.70	4.65
INSCTCDE	NONE	CHLORTOL	CHLORFEN	
WEEDKLLR(1)	NONE	CHLORTOL	NONE	CHLORTOL
FUNGCIDE				
NONE	4.67	4.70	4.70	4.87
BENOMYL	4.71	4.87	4.52	4.83
NEMACIDE	NONE	CHLORTOL	ALDICARB	
WEEDKLLR(1)	NONE	CHLORTOL	NONE	CHLORTOL
FUNGCIDE				
NONE	4.50	4.75	4.86	4.82
BENOMYL	4.56	4.99	4.67	4.71
NEMACIDE	NONE	CHLORTOL	ALDICARB	
WEEDKLLR(1)	NONE	CHLORTOL	NONE	CHLORTOL
INSCTCDE				
NONE	4.66	4.83	4.72	4.74
CHLORFEN	4.41	4.91	4.81	4.79

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GRAIN TONNES/HECTARE

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

INSCTCDE	NONE		CHLORFEN	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
FUNGCIDE				
NONE	4.64	4.73	4.69	4.88
BENOMYL	4.70	4.87	4.59	4.76
NEMACIDE	NONE		ALDICARB	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
FUNGCIDE				
NONE	4.55	4.71	4.78	4.90
BENOMYL	4.73	4.82	4.57	4.81
NEMACIDE	NONE		ALDICARB	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
INSCTCDE				
NONE	4.72	4.77	4.62	4.83
CHLORFEN	4.55	4.76	4.72	4.88
WEEDKLLR(1)	NONE		CHLORTOL	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
FUNGCIDE				
NONE	4.58	4.78	4.74	4.82
BENOMYL	4.61	4.62	4.68	5.01
WEEDKLLR(1)	NONE		CHLORTOL	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
INSCTCDE				
NONE	4.68	4.70	4.66	4.90
CHLORFEN	4.51	4.71	4.76	4.93
WEEDKLLR(1)	NONE		CHLORTOL	
WEEDKLLR(2)	NONE	GLYPHOS	NONE	GLYPHOS
NEMACIDE				
NONE	4.44	4.62	4.83	4.91
ALDICARB	4.75	4.79	4.60	4.92

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

ONE FACTOR TABLES	0.101
TWO FACTOR TABLES	0.143
THREE FACTOR TABLES	0.202

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

STRATUM	DF	SE	CV%
WP	6	0.286	6.0
GRAIN MEAN DM%	82.5		
PLOT AREA HARVESTED	0.00075		