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# Yields of the Field Experiments 1979

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## 79/R/CS/140 Chemical Reference Plots - Barley

### Rothamsted Research

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79/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 sixth year, barley.

For previous years see 74-78/R/CS/140.

Design: 32 plots fully randomised.

Whole plot dimensions: 4.06 x 4.57.

Treatments, applied cumulatively 1974-79 except WEEDKLLR - 1974 and 76 only:  
All combinations of:-

- |                |   |
|----------------|---|
| 1. FUNGCIDE    | Fungicide:                                      |
| NONE           | None  |
| BENCMYL        | Benomyl at 4 kg                                 |
| 2. INSECTICIDE | Insecticide:                                    |
| NONE           | None  |
| CHLORFEN       | Chlorfenvinphos at 2 kg                         |
| 3. NEMACIDE    | Nematicide:                                     |
| NONE           | None  |
| ALDICARB       | Aldicarb at 6 kg                                |
| 4. WEEDKLLR    | Weedkiller:                                     |
| NONE           | None  |
| CHLORTOL       | Chlortoluron at 2 kg applied 1974 and 1976 only |

NOTE: Chemicals were applied to the seedbed on 6 Apr, 1979.

Basal applications: Manures: Chalk at 2.9 t, 'Nitro-Chalk' at 450 kg.  
Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 340 l.

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

Cultivations: Chalk applied: 31 Oct, 1978. Ploughed: 22 Jan, 1979. N applied: 5 Apr. Power harrowed, seed sown: 17 Apr. Weedkillers applied: 30 May. Combine harvested: 28 Aug.

- NOTES: (1) Observations were made on the incidence of aphids and mildew. Amounts of chlorfenvinphos and benomyl in plants were measured during the season.
- (2) The yields were adjusted for a fertility difference between the North and South halves of the experimental area.

79/R/CS/140

GRAIN TONNES/HECTARE

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

INSCTCDE	NONE	CHLORFEN	MEAN
FUNGICIDE			
NONE	4.70	4.62	4.66
BENOMYL	4.56	4.60	4.58
MEAN	4.63	4.61	4.62
NEMACIDE	NONE	ALDICARB	MEAN
FUNGICIDE			
NONE	4.53	4.79	4.66
BENOMYL	4.65	4.51	4.58
MEAN	4.59	4.65	4.62
NEMACIDE	NONE	ALDICARB	MEAN
INSCTCDE			
NONE	4.48	4.78	4.63
CHLORFEN	4.70	4.52	4.61
MEAN	4.59	4.65	4.62
WEEDKLLR	NONE	CHLORTOL	MEAN
FUNGICIDE			
NONE	4.59	4.72	4.66
BENOMYL	4.61	4.55	4.58
MEAN	4.60	4.64	4.62
WEEDKLLR	NONE	CHLORTOL	MEAN
INSCTCDE			
NONE	4.66	4.60	4.63
CHLORFEN	4.54	4.68	4.61
MEAN	4.60	4.64	4.62
WEEDKLLR	NONE	CHLORTOL	MEAN
NEMACIDE			
NONE	4.54	4.64	4.59
ALDICARB	4.66	4.64	4.65
MEAN	4.60	4.64	4.62
FUNGICIDE	NEMACIDE	NONE	ALDICARB
NONE	INSCTCDE		
	NONE	4.44	4.95
	CHLORFEN	4.61	4.62
BENOMYL	NONE	4.51	4.61
	CHLORFEN	4.78	4.41
FUNGICIDE	WEEDKLLR	NONE	CHLORTOL
NONE	INSCTCDE		
	NONE	4.76	4.64
	CHLORFEN	4.43	4.80
BENOMYL	NONE	4.57	4.55
	CHLORFEN	4.64	4.56

79/R/CS/140

GRAIN TONNES/HECTARE

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

FUNGCIDE	WEEDKLLR	NONE	CHLORTOL
NONE	NEMACIDE		
	NONE	4.55	4.50
	ALDICARB	4.64	4.94
BENQMYL	NONE	4.52	4.77
	ALDICARB	4.69	4.34

INSCTCDE	WEEDKLLR	NONE	CHLORTOL
NONE	NEMACIDE		
	NONE	4.57	4.38
	ALDICARB	4.75	4.81
CHLORFEN	NONE	4.50	4.89
	ALDICARB	4.57	4.46

FUNGCIDE	NEMACIDE	WEEDKLLR	INSCTCDE	NONE	CHLORTOL	ALDICARB	NONE	CHLORTOL
NONE	NONE			4.68	4.20	4.83	5.08	
	CHLORFEN			4.42	4.80	4.44	4.80	
BENQMYL	NONE			4.46	4.56	4.68	4.54	
	CHLORFEN			4.59	4.98	4.70	4.13	

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

TABLE	FUNGCIDE	INSCTCDE	NEMACIDE	WEEDKLLR
SED	0.165	0.172	0.162	0.165

TABLE	FUNGCIDE INSCTCDE	FUNGCIDE NEMACIDE	INSCTCDE NEMACIDE	FUNGCIDE WEEDKLLR
SED	0.237	0.232	0.239	0.237

TABLE	INSCTCDE WEEDKLLR	NEMACIDE WEEDKLLR	FUNGCIDE INSCTCDE NEMACIDE	FUNGCIDE INSCTCDE WEEDKLLR
SED	0.246	0.232	0.333	0.342

TABLE	FUNGCIDE NEMACIDE WEEDKLLR	INSCTCDE NEMACIDE WEEDKLLR	FUNGCIDE INSCTCDE NEMACIDE WEEDKLLR
SED	0.330	0.339	0.474

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

STRATUM	DF	SE	CV%
WP	15	0.459	9.9

GRAIN MEAN DM% 84.7

PLOT AREA HARVESTED 0.00075