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# Yields of the Field Experiments 1983

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## 83/R/CS/140 Chemical Reference Plots - S. Barley

### Rothamsted Research

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83/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, R. MacDonald.

The tenth year, s. barley.

For previous years see 74-82/R/CS/140.

Design: Single replicate of 32 plots.

Whole plot dimensions: 4.06 x 4.57.

Treatments, applied cumulatively except as stated:

All combinations of:-

- |                |   |
|----------------|---|
| 1. WEEDKLLR    | Weedkiller in autumn:   |
| NONE           | None  |
| GLYPHOS        | Glyphosate at 1.5 kg to stubble of 1979, 1980, 1981 and 1982 s. barley.                         |
| 2. FUNGCIDE(1) | Fungicide in autumn:  |
| NONE           | None  |
| TRIADIM        | Triadimefon at 0.25 kg in autumn 1981 and 1982 cumulative to chlortoluron in 1974 and 1976 only |
| 3. FUNGCIDE(2) | Fungicide in spring:  |
| NONE           | None  |
| BENOMYL        | Benomyl at 4 kg to the seedbed  |
| 4. INSCTCDE    | Insecticide:  |
| NONE           | None  |
| CHLORFEN       | Chlorfenvinphos at 2 kg to the seedbed  |
| 5. NEMACIDE    | Nematicide:   |
| NONE           | None  |
| ALDICARB       | Aldicarb at 6 kg to the seedbed as granules   |

NOTE: Glyphosate and triadimefon were applied in 340 1 on 2 Sept, 1982. Other treatments were applied on 9 Mar, 1983.

Basal applications: Manures: Chalk at 2.9 t. Muriate of potash at 520 kg. 'Nitro-Chalk' at 460 kg. Weedkillers: Dicamba with mecoprop and MCPA (as 'Banlene Plus' at 4.9 l) in 340 1.

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

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Cultivations, etc.:- Muriate of potash applied: 16 Sept, 1982. Chalk applied: 28 Sept. Ploughed: 29 Nov. N applied, spring-tine cultivated, power harrowed, seed sown: 9 Mar, 1983. Weedkillers applied: 16 May. Combine harvested: 9 Aug.

NOTE: Mildew and aphids were assessed twice during the season. Soil was analysed for benomyl residues.

GRAIN TONNES/HECTARE

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

FUNGCIDE (1)	NONE	TRIADIM	MEAN
WEEDKLLR			
NONE	4.41	4.27	4.34
GLYPHOS	4.48	4.50	4.49
MEAN	4.44	4.39	4.41
FUNGCIDE (2)	NONE	BENOMYL	MEAN
WEEDKLLR			
NONE	4.18	4.50	4.34
GLYPHOS	4.47	4.51	4.49
MEAN	4.32	4.50	4.41
FUNGCIDE (2)	NONE	BENOMYL	MEAN
FUNGCIDE (1)			
NONE	4.37	4.51	4.44
TRIADIM	4.28	4.50	4.39
MEAN	4.32	4.50	4.41
INSCTCDE	NONE	CHLORFEN	MEAN
WEEDKLLR			
NONE	4.31	4.36	4.34
GLYPHOS	4.45	4.53	4.49
MEAN	4.38	4.45	4.41
INSCTCDE	NONE	CHLORFEN	MEAN
FUNGCIDE (1)			
NONE	4.40	4.48	4.44
TRIADIM	4.36	4.41	4.39
MEAN	4.38	4.45	4.41
INSCTCDE	NONE	CHLORFEN	MEAN
FUNGCIDE (2)			
NONE	4.33	4.32	4.32
BENOMYL	4.43	4.58	4.50
MEAN	4.38	4.45	4.41

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GRAIN TONNES/HECTARE

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

NEMACIDE	NONE	ALDICARB	MEAN	
WEEDKLLR				
NONE	4.17	4.51	4.34	
GLYPHOS	4.32	4.65	4.49	
MEAN	4.25	4.58	4.41	
NEMACIDE	NONE	ALDICARB	MEAN	
FUNGCIDE (1)				
NONE	4.25	4.63	4.44	
TRIADIM	4.24	4.53	4.39	
MEAN	4.25	4.58	4.41	
NEMACIDE	NONE	ALDICARB	MEAN	
FUNGCIDE (2)				
NONE	4.18	4.47	4.32	
BENOMYL	4.32	4.69	4.50	
MEAN	4.25	4.58	4.41	
NEMACIDE	NONE	ALDICARB	MEAN	
INSCTCDE				
NONE	4.30	4.47	4.38	
CHLORFEN	4.20	4.69	4.45	
MEAN	4.25	4.58	4.41	
FUNGCIDE (1)	NONE		TRIADIM	
FUNGCIDE (2)	NONE	BENOMYL	NONE	BENOMYL
WEEDKLLR				
NONE	4.22	4.60	4.14	4.40
GLYPHOS	4.53	4.43	4.42	4.59
FUNGCIDE (1)	NONE		TRIADIM	
INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
WEEDKLLR				
NONE	4.37	4.45	4.26	4.28
GLYPHOS	4.43	4.52	4.46	4.54
FUNGCIDE (2)	NONE		BENOMYL	
INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
WEEDKLLR				
NONE	4.23	4.12	4.39	4.61
GLYPHOS	4.43	4.51	4.47	4.55
FUNGCIDE (2)	NONE		BENOMYL	
INSCTCDE	NONE	CHLORFEN	NONE	CHLORFEN
FUNGCIDE (1)				
NONE	4.44	4.30	4.36	4.66
TRIADIM	4.22	4.33	4.50	4.49

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GRAIN TONNES/HECTARE

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

FUNGCIDE (1)	NONE		TRIADIM	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
WEEDKLLR				
NONE	4.17	4.65	4.18	4.36
GLYPHOS	4.34	4.61	4.31	4.70
FUNGCIDE (2)	NONE		BENOMYL	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
WEEDKLLR				
NONE	3.99	4.36	4.35	4.65
GLYPHOS	4.37	4.57	4.28	4.73
FUNGCIDE (2)	NONE		BENOMYL	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
FUNGCIDE (1)				
NONE	4.21	4.54	4.30	4.72
TRIADIM	4.15	4.40	4.33	4.66
INSCTCDE	NONE		CHLORFEN	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
WEEDKLLR				
NONE	4.17	4.45	4.17	4.56
GLYPHOS	4.42	4.48	4.23	4.83
INSCTCDE	NONE		CHLORFEN	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
FUNGCIDE (1)				
NONE	4.29	4.51	4.22	4.75
TRIADIM	4.30	4.42	4.19	4.64
INSCTCDE	NONE		CHLORFEN	
NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
FUNGCIDE (2)				
NONE	4.16	4.50	4.20	4.44
BENOMYL	4.43	4.43	4.20	4.95

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

MARGINS OF TWO FACTOR TABLES	0.073
TWO FACTOR TABLES	0.103
THREE FACTOR TABLES	0.146

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

STRATUM	DF	SE	CV%
WP	6	0.207	4.7

GRAIN MEAN DM% 87.0

PLOT AREA HARVESTED 0.00075