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## Yields of the Field Experiments 1988

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

#### Rothamsted Research

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88/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:** R.H. Bromilow, R. Macdonald.

The 15th year, s. barley.

For previous years see 74-87/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 1.4 kg to barley stubble each autumn from 1979 to 1984, at 0.72 kg in 1985, at 0.54 kg in 1986 and at 1.3 kg in 1987
  
2. **FUNGICIDE[1]** Fungicide in autumn:  

NONE	None
TRIADIM	Triadimefon at 0.25 kg in autumn 1981, 1982, 1984, 1985, 1986 and 1987, 0.28 kg in autumn 1983
  
3. **FUNGICIDE[2]** Fungicide in spring:  

NONE	None
BENOMYL	Benomyl at 4 kg to 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

**NOTE:** Glyphosate and triadimefon were applied in 220 l on 5 Oct, 1987 and 30 Oct respectively. Other treatments were applied on 7 Apr, 1988.

**Basal applications:** Manure: 'Nitro-Chalk' at 550 kg. Weedkillers: Bentazone at 0.80 kg, dichlorprop at 1.1 kg and MCPA at 0.64 kg in 220 l.

**Seed:** Doublet, seed not dressed, sown at 160 kg.

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Cultivations, etc.:- Ploughed: 27 Nov, 1987. N applied: 29 Feb, 1988.  
 Spring-tine cultivated, seedbed treatments applied, rotary harrowed  
 and seed sown: 7 Apr. Weedkillers applied: 5 May. Combine  
 harvested: 22 Aug.

**GRAIN TONNES/HECTARE**

\*\*\*\*\* Tables of means \*\*\*\*\*

<b>FUNGCIDE [1]</b>	NONE	TRIADIM	Mean
<b>WEEDKLLR</b>			
NONE	4.31	4.17	4.24
GLYPHOS	4.29	4.38	4.34
Mean	4.30	4.28	4.29
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>WEEDKLLR</b>			
NONE	4.25	4.24	4.24
GLYPHOS	4.31	4.36	4.34
Mean	4.28	4.30	4.29
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.24	4.37	4.30
TRIADIM	4.32	4.24	4.28
Mean	4.28	4.30	4.29
<b>INSCTCDE</b>	NONE	CHLORFEN	Mean
<b>WEEDKLLR</b>			
NONE	4.25	4.24	4.24
GLYPHOS	4.29	4.38	4.34
Mean	4.27	4.31	4.29
<b>INSCTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.24	4.37	4.30
TRIADIM	4.30	4.25	4.28
Mean	4.27	4.31	4.29
<b>INSCTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [2]</b>			
NONE	4.24	4.32	4.28
BENOMYL	4.30	4.30	4.30
Mean	4.27	4.31	4.29
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>WEEDKLLR</b>			
NONE	4.05	4.44	4.24
GLYPHOS	4.21	4.47	4.34
Mean	4.13	4.45	4.29

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GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>FUNGCIDE [1]</b>			
NONE	4.08	4.53	4.30
TRIADIM	4.18	4.38	4.28
Mean	4.13	4.45	4.29
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>FUNGCIDE [2]</b>			
NONE	4.16	4.40	4.28
BENOMYL	4.10	4.50	4.30
Mean	4.13	4.45	4.29
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>INSCTCDE</b>			
NONE	4.05	4.50	4.27
CHLORFEN	4.21	4.41	4.31
Mean	4.13	4.45	4.29
<b>WEEDKLLR</b>	<b>FUNGCIDE [2]</b>	NONE	BENOMYL
	<b>FUNGCIDE [1]</b>		
NONE	NONE	4.30	4.33
	TRIADIM	4.20	4.15
GLYPHOS	NONE	4.19	4.40
	TRIADIM	4.43	4.33
<b>WEEDKLLR</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
	<b>FUNGCIDE [1]</b>		
NONE	NONE	4.24	4.38
	TRIADIM	4.26	4.09
GLYPHOS	NONE	4.24	4.35
	TRIADIM	4.34	4.41
<b>WEEDKLLR</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
	<b>FUNGCIDE [2]</b>		
NONE	NONE	4.26	4.24
	BENOMYL	4.24	4.23
GLYPHOS	NONE	4.22	4.39
	BENOMYL	4.36	4.37
<b>FUNGCIDE [1]</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
	<b>FUNGCIDE [2]</b>		
NONE	NONE	4.13	4.36
	BENOMYL	4.36	4.37
TRIADIM	NONE	4.36	4.27
	BENOMYL	4.24	4.23

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GRAIN TONNES/HECTARE

\*\*\*\*\* Tables of means \*\*\*\*\*

	<b>NEMACIDE</b>	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>FUNGCIDE [1]</b>		
NONE	NONE	4.05	4.58
	TRIADIM	4.06	4.29
GLYPHOS	NONE	4.12	4.47
	TRIADIM	4.30	4.46
	<b>NEMACIDE</b>	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>FUNGCIDE [2]</b>		
NONE	NONE	4.05	4.46
	BENOMYL	4.06	4.41
GLYPHOS	NONE	4.27	4.35
	BENOMYL	4.15	4.58
	<b>NEMACIDE</b>	NONE	ALDICARB
<b>FUNGCIDE [1]</b>	<b>FUNGCIDE [2]</b>		
NONE	NONE	4.03	4.46
	BENOMYL	4.14	4.59
TRIADIM	NONE	4.28	4.35
	BENOMYL	4.07	4.40
	<b>NEMACIDE</b>	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>INSCTCDE</b>		
NONE	NONE	3.99	4.52
	CHLORFEN	4.12	4.36
GLYPHOS	NONE	4.11	4.47
	CHLORFEN	4.30	4.46
	<b>NEMACIDE</b>	NONE	ALDICARB
<b>FUNGCIDE [1]</b>	<b>INSCTCDE</b>		
NONE	NONE	3.94	4.54
	CHLORFEN	4.22	4.51
TRIADIM	NONE	4.16	4.45
	CHLORFEN	4.20	4.31
	<b>NEMACIDE</b>	NONE	ALDICARB
<b>FUNGCIDE [2]</b>	<b>INSCTCDE</b>		
NONE	NONE	4.02	4.47
	CHLORFEN	4.30	4.34
BENOMYL	NONE	4.08	4.52
	CHLORFEN	4.12	4.48

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GRAIN TONNES/HECTARE

\*\*\* Standard errors of differences of means \*\*\*

Margins of two factor tables 0.063  
Two factor tables 0.089  
Three factor tables 0.126

\*\*\*\*\* Stratum standard errors and coefficients of variation \*\*\*\*\*

Stratum	d.f.	s.e.	cv%
WP	6	0.178	4.1

GRAIN MEAN DM% 85.2

PLOT AREA HARVESTED 0.00075