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## Yields of the Field Experiments 1989

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

#### Rothamsted Research

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89/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, A.A. Evans, P.H. Nicholls.

The 16th year, s. barley.

For previous years see 74-88/R/CS/140.

**Design:** Single replicate of 32 plots.

**Whole plot dimensions:** 4.06 x 4.57.

Treatments, applied cumulatively every year 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, at 1.3 kg in 1987 and at 1.5 kg in 1988.
2. **FUNGCIDE[1]** Fungicide in autumn:  
NONE None  
TRIADIM Triadimefon at 0.25 kg in autumn 1981, 1982, 1984, 1985, 1986, 1987 and 1988, 0.28 kg in autumn 1983
3. **FUNGCIDE[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 1 on 10 Oct, 1988 and 24 Oct respectively. Other treatments were applied on 31 Mar, 1989.

**Basal applications:** Manure: 'Nitram' at 320 kg. Weedkillers: Bentazone at 0.80 kg, dichlorprop at 1.1 kg and MCPA at 0.64 kg in 220 1.

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

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Cultivations, etc.:- Ploughed: 25 Nov, 1988. N applied: 7 Mar, 1989.  
 Spring-tine cultivated, seedbed treatments applied, rotary harrowed,  
 seed sown, rolled: 31 Mar. Weedkillers applied: 9 May. Combine  
 harvested: 15 Aug.

**GRAIN TONNES/HECTARE**

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

FUNGCIDE [1]	NONE	TRIADIM	Mean
<b>WEEDKLLR</b>			
NONE	3.81	3.93	3.87
GLYPHOS	3.94	3.92	3.93
Mean	3.88	3.93	3.90

FUNGCIDE [2]	NONE	BENOMYL	Mean
<b>WEEDKLLR</b>			
NONE	3.85	3.89	3.87
GLYPHOS	3.90	3.97	3.93
Mean	3.87	3.93	3.90

FUNGCIDE [2]	NONE	BENOMYL	Mean
<b>FUNGCIDE [1]</b>			
NONE	3.83	3.93	3.88
TRIADIM	3.92	3.93	3.93
Mean	3.87	3.93	3.90

INSCTCDE	NONE	CHLORFEN	Mean
<b>WEEDKLLR</b>			
NONE	3.74	3.99	3.87
GLYPHOS	3.89	3.98	3.93
Mean	3.81	3.99	3.90

INSCTCDE	NONE	CHLORFEN	Mean
<b>FUNGCIDE [1]</b>			
NONE	3.72	4.03	3.88
TRIADIM	3.91	3.95	3.93
Mean	3.81	3.99	3.90

INSCTCDE	NONE	CHLORFEN	Mean
<b>FUNGCIDE [2]</b>			
NONE	3.80	3.94	3.87
BENOMYL	3.83	4.03	3.93
Mean	3.81	3.99	3.90

NEMACIDE	NONE	ALDICARB	Mean
<b>WEEDKLLR</b>			
NONE	3.63	4.10	3.87
GLYPHOS	3.73	4.14	3.93
Mean	3.68	4.12	3.90

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GRAIN TONNES/HECTARE

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

<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>FUNGCIDE [1]</b>			
NONE	3.61	4.14	3.88
TRIADIM	3.75	4.10	3.93
Mean	3.68	4.12	3.90
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>FUNGCIDE [2]</b>			
NONE	3.67	4.08	3.87
BENOMYL	3.69	4.17	3.93
Mean	3.68	4.12	3.90
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>INSCTCDE</b>			
NONE	3.58	4.05	3.81
CHLORFEN	3.78	4.20	3.99
Mean	3.68	4.12	3.90
<b>WEEDKLLR</b>	<b>FUNGCIDE [2]</b>	NONE	BENOMYL
NONE	NONE	3.83	3.79
	TRIADIM	3.87	3.98
GLYPHOS	NONE	3.82	4.06
	TRIADIM	3.97	3.88
<b>WEEDKLLR</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
NONE	NONE	3.63	3.99
	TRIADIM	3.85	4.00
GLYPHOS	NONE	3.81	4.07
	TRIADIM	3.96	3.89
<b>WEEDKLLR</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
NONE	NONE	3.74	3.96
	BENOMYL	3.75	4.02
GLYPHOS	NONE	3.87	3.92
	BENOMYL	3.90	4.04
<b>FUNGCIDE [1]</b>	<b>INSCTCDE</b>	NONE	CHLORFEN
NONE	NONE	3.71	3.94
	BENOMYL	3.73	4.12
TRIADIM	NONE	3.89	3.95
	BENOMYL	3.92	3.95

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GRAIN TONNES/HECTARE

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

		NEMACIDE	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>FUNGCIDE [1]</b>			
	NONE	NONE	3.67	3.95
		TRIADIM	3.60	4.25
GLYPHOS	NONE		3.56	4.33
	TRIADIM		3.89	3.96
		NEMACIDE	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>FUNGCIDE [2]</b>			
	NONE	NONE	3.61	4.09
		BENOMYL	3.66	4.11
GLYPHOS	NONE		3.73	4.06
	BENOMYL		3.72	4.22
		NEMACIDE	NONE	ALDICARB
<b>FUNGCIDE [1]</b>	<b>FUNGCIDE [2]</b>			
	NONE	NONE	3.61	4.04
		BENOMYL	3.61	4.24
TRIADIM	NONE		3.73	4.11
	BENOMYL		3.76	4.10
		NEMACIDE	NONE	ALDICARB
<b>WEEDKLLR</b>	<b>INSCTCDE</b>			
	NONE	NONE	3.51	3.98
		CHLORFEN	3.76	4.22
GLYPHOS	NONE		3.66	4.11
	CHLORFEN		3.79	4.17
		NEMACIDE	NONE	ALDICARB
<b>FUNGCIDE [1]</b>	<b>INSCTCDE</b>			
	NONE	NONE	3.55	3.89
		CHLORFEN	3.67	4.39
TRIADIM	NONE		3.61	4.20
	CHLORFEN		3.88	4.01
		NEMACIDE	NONE	ALDICARB
<b>FUNGCIDE [2]</b>	<b>INSCTCDE</b>			
	NONE	NONE	3.47	4.14
		CHLORFEN	3.87	4.01
BENOMYL	NONE		3.69	3.96
	CHLORFEN		3.68	4.38

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

Margins of two factor tables	0.144
Two factor tables	0.204
Three factor tables	0.289

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

Stratum	d.f.	s.e.	cv%
WP	6	0.409	10.5

GRAIN MEAN DM% 84.6 PLOT AREA HARVESTED 0.00093