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# Yields of the Field Experiments 1991

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

### Rothamsted Research

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91/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 18th year, s. barley.

For previous years see 74-90/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 to 1990.
2. **FUNGICIDE[1]** Fungicide in autumn:  
NONE None  
TRIADIM Triadimefon at 0.25 kg in autumn 1981, 1982, 1984 to 1990, 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 28 Sept, 1990. Other treatments were applied on 8 Apr, 1991.

**Basal applications:** Manures: Muriate of potash at 520 kg. Magnesiam limestone at 2.9 t. 'Nitram' at 440 kg. Weedkiller: Fluroxypyr at 0.15 kg in 200 l.

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

91/R/CS/140

Cultivations, etc.:— K applied: 14 Sept, 1990. Magnesian limestone applied: 4 Oct. Ploughed: 5 Dec. N applied, heavy spring-tine cultivated, rotary harrowed: 8 Apr, 1991. Seed sown, rolled: 9 Apr. Weedkiller applied: 16 June. Combine harvested: 21 Aug.

**GRAIN TONNES/HECTARE**

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

<b>FUNGCIDE [1]</b>	NONE	TRIADIM	Mean
<b>WEEDKLLR</b>			
NONE	6.07	6.07	6.07
GLYPHOS	6.11	6.09	6.10
Mean	6.09	6.08	6.08
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>WEEDKLLR</b>			
NONE	6.01	6.13	6.07
GLYPHOS	6.07	6.13	6.10
Mean	6.04	6.13	6.08
<b>FUNGCIDE [2]</b>	NONE	BENOMYL	Mean
<b>FUNGCIDE [1]</b>			
NONE	6.04	6.14	6.09
TRIADIM	6.04	6.12	6.08
Mean	6.04	6.13	6.08
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>WEEDKLLR</b>			
NONE	5.97	6.17	6.07
GLYPHOS	5.95	6.25	6.10
Mean	5.96	6.21	6.08
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [1]</b>			
NONE	6.02	6.16	6.09
TRIADIM	5.90	6.26	6.08
Mean	5.96	6.21	6.08
<b>INSTCDE</b>	NONE	CHLORFEN	Mean
<b>FUNGCIDE [2]</b>			
NONE	5.90	6.18	6.04
BENOMYL	6.02	6.24	6.13
Mean	5.96	6.21	6.08
<b>NEMACIDE</b>	NONE	ALDICARB	Mean
<b>WEEDKLLR</b>			
NONE	6.00	6.14	6.07
GLYPHOS	6.14	6.06	6.10
Mean	6.07	6.10	6.08

91/R/CS/140

GRAIN TONNES/HECTARE

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

NEMACIDE	NONE	ALDICARB	Mean
<b>FUNGCIDE [1]</b>			
NONE	6.01	6.17	6.09
TRIADIM	6.13	6.03	6.08
Mean	6.07	6.10	6.08

NEMACIDE	NONE	ALDICARB	Mean
<b>FUNGCIDE [2]</b>			
NONE	6.09	5.99	6.04
BENOMYL	6.05	6.21	6.13
Mean	6.07	6.10	6.08

NEMACIDE	NONE	ALDICARB	Mean
<b>INSCDCDE</b>			
NONE	5.95	5.96	5.96
CHLORFEN	6.19	6.23	6.21
Mean	6.07	6.10	6.08

<b>FUNGCIDE [1]</b>	NONE		TRIADIM	
<b>WEEDKLLR FUNGCIDE [2]</b>	NONE	BENOMYL	NONE	BENOMYL
NONE	5.98	6.16	6.05	6.09
GLYPHOS	6.10	6.13	6.03	6.14

<b>FUNGCIDE [1]</b>	NONE		TRIADIM	
<b>WEEDKLLR INSCDCDE</b>	NONE	CHLORFEN	NONE	CHLORFEN
NONE	6.05	6.09	5.89	6.26
GLYPHOS	5.99	6.24	5.91	6.26

<b>FUNGCIDE [2]</b>	NONE		BENOMYL	
<b>WEEDKLLR INSCDCDE</b>	NONE	CHLORFEN	NONE	CHLORFEN
NONE	5.85	6.18	6.08	6.17
GLYPHOS	5.95	6.19	5.95	6.32

<b>FUNGCIDE [2]</b>	NONE		BENOMYL	
<b>FUNGCIDE [1] INSCDCDE</b>	NONE	CHLORFEN	NONE	CHLORFEN
NONE	6.02	6.06	6.02	6.27
TRIADIM	5.78	6.30	6.02	6.22

<b>FUNGCIDE [1]</b>	NONE		TRIADIM	
<b>WEEDKLLR NEMACIDE</b>	NONE	ALDICARB	NONE	ALDICARB
NONE	5.92	6.21	6.08	6.06
GLYPHOS	6.10	6.13	6.18	5.99

<b>FUNGCIDE [2]</b>	NONE		BENOMYL	
<b>WEEDKLLR NEMACIDE</b>	NONE	ALDICARB	NONE	ALDICARB
NONE	6.00	6.02	6.00	6.25
GLYPHOS	6.18	5.95	6.10	6.17

91/R/CS/140

GRAIN TONNES/HECTARE

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

FUNGICIDE [2]		NONE		BENOMYL	
FUNGICIDE [1]	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		6.06	6.02	5.97	6.31
TRIADIM		6.13	5.95	6.13	6.10

  

WEEDKLLR		INSCTCDE		CHLORFEN	
	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		5.88	6.05	6.12	6.22
GLYPHOS		6.02	5.88	6.26	6.24

  

FUNGICIDE [1]		INSCTCDE		CHLORFEN	
	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		5.98	6.06	6.05	6.28
TRIADIM		5.93	5.87	6.33	6.19

  

FUNGICIDE [2]		INSCTCDE		CHLORFEN	
	NEMACIDE	NONE	ALDICARB	NONE	ALDICARB
NONE		5.93	5.87	6.25	6.11
BENOMYL		5.97	6.06	6.13	6.36

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

Margins of two factor tables	0.129
Two factor tables	0.182
Three factor tables	0.257

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

Stratum	d.f.	s.e.	cv%
WP	6	0.364	6.0

GRAIN MEAN DM% 88.8

PLOT AREA HARVESTED 0.00069