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# Yields of the Field Experiments 1987

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

### Rothamsted Research

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87/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 14th year, s. barley.

For previous years see 74-86/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 and at  
                              0.54 kg in 1986
2. FUNGCIDE[1]        Fungicide in autumn:  
    NONE                None  
    TRIADIM            Triadimefon at 0.25 kg in autumn 1981, 1982, 1984,  
                              1985 and 1986, 0.28 kg in autumn 1983
3. FUNGCIDE[2]        Fungicide in spring:  
    NONE                None  
    BENOMYL            Benomyl at 4 kg to seedbed
4. INSECTCDE          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 22 Sept, 1986 and 13 Oct respectively. Other treatments were applied on 19 Mar, 1987.

87/R/CS/140

Basal applications: Manures: (0:18:36) at 1060 kg, 'Nitro-Chalk' at 550 kg. Weedkillers: Bentazone at 0.80 kg, dichlorprop at 1.08 kg, and MCPA at 0.64 kg in 220 l applied with the fungicide. Fungicide: Tridemorph at 0.52 kg.

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

Cultivations, etc.: - PK applied: 16 Sept, 1986. Rotary cultivated: 13 Oct. Ploughed: 26 Nov. Spring-tine cultivated, seedbed treatments applied, rotary harrowed, seed sown and N applied: 19 Mar, 1987. Weedkillers and fungicide applied: 6 May. Combine harvested: 21 Aug.

GRAIN TONNES/HECTARE

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

FUNGICIDE[1]	NONE	TRIADIM	Mean
WEEDKLLR			
NONE	5.26	5.40	5.33
GLYPHOS	5.13	5.24	5.18
Mean	5.19	5.32	5.26
FUNGICIDE[2]	NONE	BENOMYL	Mean
WEEDKLLR			
NONE	5.42	5.24	5.33
GLYPHOS	5.26	5.10	5.18
Mean	5.34	5.17	5.26
FUNGICIDE[2]	NONE	BENOMYL	Mean
FUNGICIDE[1]			
NONE	5.35	5.04	5.19
TRIADIM	5.34	5.30	5.32
Mean	5.34	5.17	5.26
INSTCDE	NONE	CHLORFEN	Mean
WEEDKLLR			
NONE	5.31	5.35	5.33
GLYPHOS	5.26	5.10	5.18
Mean	5.29	5.23	5.26
INSTCDE	NONE	CHLORFEN	Mean
FUNGICIDE[1]			
NONE	5.31	5.08	5.19
TRIADIM	5.26	5.37	5.32
Mean	5.29	5.23	5.26

87/R/CS/140

GRAIN TONNES/HECTARE

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

INSC TCDE	NONE	CHLORFEN	Mean
FUNGCIDE[2]			
NONE	5.33	5.36	5.34
BENOMYL	5.24	5.09	5.17
Mean	5.29	5.23	5.26
NEMACIDE	NONE	ALDICARB	Mean
WEEDKLLR			
NONE	5.45	5.21	5.33
GLYPHOS	5.21	5.15	5.18
Mean	5.33	5.18	5.26
NEMACIDE	NONE	ALDICARB	Mean
FUNGCIDE[1]			
NONE	5.23	5.16	5.19
TRIADIM	5.42	5.21	5.32
Mean	5.33	5.18	5.26
NEMACIDE	NONE	ALDICARB	Mean
FUNGCIDE[2]			
NONE	5.46	5.23	5.34
BENOMYL	5.20	5.14	5.17
Mean	5.33	5.18	5.26
NEMACIDE	NONE	ALDICARB	Mean
INSC TCDE			
NONE	5.38	5.19	5.29
CHLORFEN	5.27	5.18	5.23
Mean	5.33	5.18	5.26
WEEDKLLR	FUNGCIDE[2]	NONE	BENOMYL
NONE	FUNGCIDE[1]		
	NONE	5.41	5.11
	TRIADIM	5.44	5.36
GLYPHOS	NONE	5.29	4.96
	TRIADIM	5.23	5.24
WEEDKLLR	INSC TCDE	NONE	CHLORFEN
NONE	FUNGCIDE[1]		
	NONE	5.22	5.30
	TRIADIM	5.40	5.40
GLYPHOS	NONE	5.39	4.86
	TRIADIM	5.13	5.34

87/R/CS/140

GRAIN TONNES/HECTARE

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

	INSCTCDE	NONE	CHLORFEN
WEEDKLLR	FUNGCIDE[2]		
NONE	NONE	5.40	5.45
	BENOMYL	5.22	5.26
GLYPHOS	NONE	5.26	5.27
	BENOMYL	5.27	4.93
	INSCTCDE	NONE	CHLORFEN
FUNGCIDE[1]	FUNGCIDE[2]		
NONE	NONE	5.39	5.31
	BENOMYL	5.23	4.85
TRIADIM	NONE	5.26	5.41
	BENOMYL	5.26	5.34
	NEMACIDE	NONE	ALDICARB
WEEDKLLR	FUNGCIDE[1]		
NONE	NONE	5.34	5.19
	TRIADIM	5.56	5.24
GLYPHOS	NONE	5.13	5.13
	TRIADIM	5.29	5.18
	NEMACIDE	NONE	ALDICARB
WEEDKLLR	FUNGCIDE[2]		
NONE	NONE	5.55	5.29
	BENOMYL	5.34	5.14
GLYPHOS	NONE	5.36	5.17
	BENOMYL	5.06	5.14
	NEMACIDE	NONE	ALDICARB
FUNGCIDE[1]	FUNGCIDE[2]		
NONE	NONE	5.50	5.20
	BENOMYL	4.96	5.11
TRIADIM	NONE	5.41	5.26
	BENOMYL	5.43	5.17
	NEMACIDE	NONE	ALDICARB
WEEDKLLR	INSCTCDE		
NONE	NONE	5.42	5.20
	CHLORFEN	5.47	5.23
GLYPHOS	NONE	5.35	5.18
	CHLORFEN	5.07	5.13
	NEMACIDE	NONE	ALDICARB
FUNGCIDE[1]	INSCTCDE		
NONE	NONE	5.35	5.26
	CHLORFEN	5.11	5.05
TRIADIM	NONE	5.42	5.11
	CHLORFEN	5.43	5.32

87/R/CS/140

GRAIN TONNES/HECTARE

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

FUNGCIDE[2]	NEMACIDE	NONE	ALDICARB
NONE	INSCTCDE		
	NONE	5.43	5.23
	CHLORFEN	5.49	5.23
BENOMYL	NONE	5.34	5.15
	CHLORFEN	5.06	5.13

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

Margins of two factor tables	0.151
Two factor tables	0.214
Three factor tables	0.303

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

Stratum	d.f.	s.e.	cv%
WP	6	0.428	8.1

GRAIN MEAN DM% 87.6

PLOT AREA HARVESTED 0.00075