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Yields of the Field Experiments 1994

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94/R/CS/140 Chemical Reference Plots - S. Barley

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94/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 21st year, s. barley.

For previous years see 74-93/R/CS/140.

Design: Single replicate of 32 plots.

Whole plot dimensions: 4.06 x 4.57.

Treatments: Applied cumulatively every year until 1993, none in 1994.

All combinations of:-

1. **WEEDKLLR** Weedkiller in autumn:
(NONE) None
(GLYPHOS) Glyphosate to barley stubble each autumn
2. **FUNGICIDE[1]** Fungicide in autumn:
(NONE) None
(TRIADIM) Triadimefon in autumn
3. **FUNGICIDE[2]** Fungicide in spring:
(NONE) None
(BENOMYL) Benomyl to the seedbed
4. **INSCTCDE** Insecticide:
(NONE) None
(CHLORFEN) Chlorfenvinphos to the seedbed
5. **NEMACIDE** Nematicide:
(NONE) None
(ALDICARB) Aldicarb to the seedbed

Experimental diary:

- 03-Nov-93 : B : Ploughed.
17-Mar-94 : B : Spring-tine cultivated, rotary harrowed, Alexis undressed, drilled at 350 seeds per m², rolled.
19-Apr-94 : B : 34.5% N at 428 kg.
02-Jun-94 : B : Oxytril CM at 1.5 l with Duplosan New System CMPP at 2.0 l in 200 l.
08-Aug-94 : B : Combine harvested.

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NOTE: Samples of topsoil were taken from representative plots in August 1994 for the estimation of pesticide residues. The influence of treatment history on the breakdown rates of the chemicals was examined in these samples.

GRAIN TONNES/HECTARE

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

| FUNGCIDE [1] | (NONE) | (TRIADIM) | Mean |
|-----------------|--------|-----------|------|
| WEEDKLLR | | | |
| (NONE) | 5.29 | 5.35 | 5.32 |
| (GLYPHOS) | 5.19 | 5.25 | 5.22 |
| Mean | 5.24 | 5.30 | 5.27 |

| FUNGCIDE [2] | (NONE) | (BENOMYL) | Mean |
|-----------------|--------|-----------|------|
| WEEDKLLR | | | |
| (NONE) | 5.25 | 5.39 | 5.32 |
| (GLYPHOS) | 5.08 | 5.36 | 5.22 |
| Mean | 5.16 | 5.37 | 5.27 |

| FUNGCIDE [2] | (NONE) | (BENOMYL) | Mean |
|---------------------|--------|-----------|------|
| FUNGCIDE [1] | | | |
| (NONE) | 5.24 | 5.24 | 5.24 |
| (TRIADIM) | 5.09 | 5.51 | 5.30 |
| Mean | 5.16 | 5.37 | 5.27 |

| INSTCDE | (NONE) | (CHLORFEN) | Mean |
|-----------------|--------|------------|------|
| WEEDKLLR | | | |
| (NONE) | 5.45 | 5.20 | 5.32 |
| (GLYPHOS) | 5.34 | 5.09 | 5.22 |
| Mean | 5.39 | 5.14 | 5.27 |

| INSTCDE | (NONE) | (CHLORFEN) | Mean |
|---------------------|--------|------------|------|
| FUNGCIDE [1] | | | |
| (NONE) | 5.24 | 5.23 | 5.24 |
| (TRIADIM) | 5.55 | 5.05 | 5.30 |
| Mean | 5.39 | 5.14 | 5.27 |

| INSTCDE | (NONE) | (CHLORFEN) | Mean |
|---------------------|--------|------------|------|
| FUNGCIDE [2] | | | |
| (NONE) | 5.24 | 5.09 | 5.16 |
| (BENOMYL) | 5.55 | 5.20 | 5.37 |
| Mean | 5.39 | 5.14 | 5.27 |

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GRAIN TONNES/HECTARE

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

| | | | | |
|------------------------------|--------|------------|--------|-----------|
| NEMACIDE | (NONE) | (ALDICARB) | Mean | |
| WEEDKLLR | | | | |
| (NONE) | 5.39 | 5.26 | 5.32 | |
| (GLYPHOS) | 5.25 | 5.18 | 5.22 | |
| Mean | 5.32 | 5.22 | 5.27 | |
| NEMACIDE | (NONE) | (ALDICARB) | Mean | |
| FUNGCIDE [1] | | | | |
| (NONE) | 5.31 | 5.17 | 5.24 | |
| (TRIADIM) | 5.32 | 5.28 | 5.30 | |
| Mean | 5.32 | 5.22 | 5.27 | |
| NEMACIDE | (NONE) | (ALDICARB) | Mean | |
| FUNGCIDE [2] | | | | |
| (NONE) | 5.20 | 5.13 | 5.16 | |
| (BENOMYL) | 5.43 | 5.31 | 5.37 | |
| Mean | 5.32 | 5.22 | 5.27 | |
| NEMACIDE | (NONE) | (ALDICARB) | Mean | |
| INSTCDE | | | | |
| (NONE) | 5.39 | 5.40 | 5.39 | |
| (CHLORFEN) | 5.24 | 5.05 | 5.14 | |
| Mean | 5.32 | 5.22 | 5.27 | |
| FUNGCIDE [1] | (NONE) | (TRIADIM) | | |
| WEEDKLLR FUNGCIDE [2] | (NONE) | (BENOMYL) | (NONE) | (BENOMYL) |
| (NONE) | 5.23 | 5.35 | 5.27 | 5.43 |
| (GLYPHOS) | 5.25 | 5.12 | 4.91 | 5.59 |
| FUNGCIDE [1] | (NONE) | (TRIADIM) | | |
| WEEDKLLR INSTCDE | (NONE) | (CS) | (NONE) | (CS) |
| (NONE) | 5.35 | 5.23 | 5.54 | 5.16 |
| (GLYPHOS) | 5.14 | 5.23 | 5.55 | 4.94 |
| FUNGCIDE [2] | (NONE) | (BENOMYL) | | |
| WEEDKLLR INSTCDE | (NONE) | (CS) | (NONE) | (CS) |
| (NONE) | 5.23 | 5.27 | 5.66 | 5.13 |
| (GLYPHOS) | 5.25 | 4.90 | 5.43 | 5.28 |
| FUNGCIDE [2] | (NONE) | (BENOMYL) | | |
| FUNGCIDE [1] INSTCDE | (NONE) | (CS) | (NONE) | (CS) |
| (NONE) | 5.13 | 5.35 | 5.36 | 5.12 |
| (TRIADIM) | 5.36 | 4.82 | 5.73 | 5.29 |

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GRAIN TONNES/HECTARE

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

| FUNGICIDE [1] | | (NONE) | (AL) | (TRIADIM) | (NONE) | (AL) |
|---------------|----------|--------|------|-----------|--------|------|
| WEEDKLLR | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.38 | 5.20 | 5.39 | | 5.31 |
| (GLYPHOS) | | 5.24 | 5.13 | 5.25 | | 5.24 |

| FUNGICIDE [2] | | (NONE) | (AL) | (BENOMYL) | (NONE) | (AL) |
|---------------|----------|--------|------|-----------|--------|------|
| WEEDKLLR | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.30 | 5.20 | 5.47 | | 5.31 |
| (GLYPHOS) | | 5.10 | 5.05 | 5.39 | | 5.32 |

| FUNGICIDE [2] | | (NONE) | (AL) | (BENOMYL) | (NONE) | (AL) |
|---------------|----------|--------|------|-----------|--------|------|
| FUNGICIDE [1] | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.31 | 5.17 | 5.31 | | 5.16 |
| (TRIADIM) | | 5.09 | 5.09 | 5.55 | | 5.47 |

| INSCTCDE | | (NONE) | (AL) | (CHLORFEN) | (NONE) | (AL) |
|-----------|----------|--------|------|------------|--------|------|
| WEEDKLLR | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.46 | 5.43 | 5.32 | | 5.08 |
| (GLYPHOS) | | 5.33 | 5.36 | 5.17 | | 5.01 |

| INSCTCDE | | (NONE) | (AL) | (CHLORFEN) | (NONE) | (AL) |
|---------------|----------|--------|------|------------|--------|------|
| FUNGICIDE [1] | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.27 | 5.21 | 5.35 | | 5.12 |
| (TRIADIM) | | 5.51 | 5.58 | 5.14 | | 4.97 |

| INSCTCDE | | (NONE) | (AL) | (CHLORFEN) | (NONE) | (AL) |
|---------------|----------|--------|------|------------|--------|------|
| FUNGICIDE [2] | NEMACIDE | (NONE) | (AL) | (NONE) | (AL) | (AL) |
| (NONE) | | 5.20 | 5.28 | 5.20 | | 4.97 |
| (BENOMYL) | | 5.58 | 5.51 | 5.28 | | 5.12 |

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

| | |
|------------------------------|-------|
| Margins of two factor tables | 0.109 |
| Two factor tables | 0.154 |
| Three factor tables | 0.218 |

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

| Stratum | d.f. | s.e. | cv% |
|---------|------|-------|-----|
| WP | 6 | 0.308 | 5.8 |

GRAIN MEAN DM% 87.9

PLOT AREA HARVESTED 0.00069