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# Yields of the Field Experiments 1986

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## 86/R/WW/9 Electrostatic Sprayers and Weed Control - W. Wheat

### Rothamsted Research

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86/R/WW/9

WINTER WHEAT

ELECTROSTATIC SPRAYERS AND WEED CONTROL

Object: To compare the weed control obtained with electrostatic and standard hydraulic sprayers in winter wheat - Claycroft.

Sponsors: G.R. Cayley, D.C. Griffiths, B.J. Pye.

Design: 4 randomised blocks of 7 plots.

Whole plot dimensions: 3.0 x 15.0.

Treatments: All combinations of:-

- |             |                                     |
|-------------|-------------------------------------|
| 1. SPRAYERS | Sprayers:                           |
| ELEC 1      | Electrostatic sprayer 1             |
| ELEC 2      | Electrostatic sprayer 2             |
| HYDRAUL     | Hydraulic sprayer                   |
| 2. SPR TIME | Times of application of weedkiller: |
| PRE EM      | Pre-emergence on 14 Oct, 1985       |
| POST EM     | Post-emergence on 13 Nov            |

plus one extra treatment

EXTRA

NONE            None

- NOTES: (1) Electrostatic sprayer 1 was the 'Tecnomat' which has vertically mounted, inductively charged rotary atomisers and spray was applied in 6.4 l.
- (2) Electrostatic sprayer 2 was the 'Jumbo' which has spinning cone nozzles, spray was charged at 30 kv and was applied in 9.1 l.
- (3) Weedkillers used were isoproturon at 2.5 kg, chlorsulfuron at 0.015 kg and metsulfuron methyl at 0.005 kg.
- (4) The hydraulic sprays were applied in 200 l.

Basal applications: Manures: (0:18:36) at 690 kg. 'Nitram' at 600 kg. Weedkiller: Paraquat at 0.60 kg ion in 200 l. Fungicide: Propiconazole at 0.12 kg in 200 l. Desiccant: Glyphosate at 1.4 kg in 200 l.

Seed: Avalon, sown at 190 kg.

Cultivations, etc.:- PK applied: 5 Sept, 1985. Heavy spring-tine cultivated: 17 Sept. Paraquat applied: 10 Oct. Heavy spring-tine cultivated, disced, rotary harrowed, seed sown: 11 Oct. N applied: 28 Apr, 1986. Fungicide applied: 25 June. Desiccant applied: 12 Aug. Combine harvested: 30 Aug. Previous crops: W. wheat 1984, s. barley 1985.

NOTE: Broadleaved and grass weeds were counted at intervals during the growth of the crop.

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GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

SPR TIME SPRAYERS	PRE EM	POST EM	MEAN
ELECT 1	8.62	9.19	8.90
ELECT 2	9.15	9.45	9.30
HYDRAUL	8.53	8.98	8.76
MEAN	8.77	9.20	8.99
NONE	6.28		
GRAND MEAN	8.60		

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	SPRAYERS	SPR TIME	SPRAYERS SPR TIME & NONE
-----	-----	-----	-----
SED	0.333	0.272	0.471

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP	18	0.666	7.7
GRAIN MEAN	80.0		
PLOT AREA HARVESTED	0.00306		