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83/R/WW/6 All Purpose Electrostatic Spraying - W. Wheat

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83/R/WW/6

WINTER WHEAT

ALL PURPOSE ELECTROSTATIC SPRAYING

Object: To compare the efficiency of a range of sprays when applied with electrostatic or hydraulic sprayers - Bylands.

Sponsors: D.C. Griffiths, A.J. Arnold, G.R. Cayley, P. Etheridge, J.F. Jenkyn, F.T. Phillips, B. Pye, G.C. Scott.

Design: 4 randomised blocks of 5 plots.

Whole plot dimensions: 8.0 x 30.0.

Treatments:

SPRAYER	Sprayers:
CNVNTL A	Conventional hydraulic sprayer for all sprays
CNVNTL W	Conventional hydraulic sprayer, only weedkillers applied
ELECT CA	Electrostatic sprayer, charged particles, for all sprays
ELECT UA	Electrostatic sprayer, uncharged particles, for all sprays
EL UW CR	Electrostatic sprayer, uncharged particles to spray weedkillers, charged particles, for all remaining sprays.

NOTE: Details of treatments are shown below:

Date	Chemical	kg per ha	Volume, l per ha	
			Electrostatic	Hydraulic
1 Oct, 1982	Isoproturon +)	1.4	7.0	380
	Trifluralin)	1.4		
20 Nov	Permethrin	0.05	5.6	380
9 Apr, 1983	Mecoprop +)	1.68	6.25	380
	Ioxynil +)	0.2		
	Benazolin)	0.2		
15 Apr	Prochloraz +)	0.4	6.25	380
	Carbendazim)	0.15		
29 Apr	Chlormequat chloride	1.68	6.25	380
16 June	Propiconazole	0.12	8.33	380
7 July	Dimethoate	0.44	8.33	380

Basal applications: Manures: (5:14:30) at 340 kg. 'Nitro-Chalk' at 280 kg followed by 630 kg.

Seed: Aquila, sown at 200 kg.

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Cultivations, etc.: - Discd: 9 Sept, 1982. Heavy spring-tine cultivated: 14 Sept. NPK applied: 18 Sept. Seed sown: 24 Sept. First N applied: 15 Mar, 1983. Second N applied: 13 Apr. Combine harvested: 14 Aug. Previous crops: S. barley 1981, w. wheat 1982.

NOTE: Weed counts were made in December, February and July. Straw length, percentage eyespot infection and aphids were assessed in July. Samples for chemical analysis were taken immediately after each spray application.

GRAIN TONNES/HECTARE

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

SPRAYER	CNVNTL A	CNVNTL W	ELECT CA	ELECT UA	EL UW CR	MEAN
	7.96	6.74	7.72	7.65	7.93	7.60

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

TABLE	SPRAYER
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SED	0.373

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.528	6.9
GRAIN MEAN DM%	87.0		
PLOT AREA HARVESTED	0.00828		