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83/R/BE/4 All Purpose Electrostatic Spraying - W. Beans

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83/R/BE/4

WINTER BEANS

ALL PURPOSE ELECTROSTATIC SPRAYING

Object: To study the effects of using an electrostatic sprayer for all spraying operations during the season on pests, diseases and weeds and on the yields of w. beans - Gt. Harpenden I.

Sponsors: D.C. Griffiths, A.J. Arnold, A. Bainbridge, G.R. Cayley, P. Etheridge, F.T. Phillips, B.J. 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 sprayer, only weedkiller 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 weedkiller, charged particles for all remaining sprays

NOTE: Details of treatments are shown below:

Date	Chemical	kg per ha	VOLUME, l per ha	
			Electrostatic	Hydraulic
28 Oct, 1982	Carbetamide	2.1	11.2	380
29 Mar, 1983	Benomyl	0.55	6.25	380
23 May	Permethrin &)	0.10	6.25	416 (hand sprayer)
	Carbendazim)	0.51		
23 June	Pirimicarb &)	0.15	8.3	380
	Propiconazole)	0.12		

The carbetamide was applied by electrostatic sprayer as two consecutive sprays.

Seed: Throws MS, sown at 280 kg.

Cultivations, etc.:- Ploughed: 10 Sept, 1982. Rotary harrowed, seed sown: 22 Sept. Combine harvested: 12 Aug, 1983. Previous crops: W. Wheat 1981 and 1982.

NOTE: (1) Weed counts were made in May. Sitona leaf notching was counted in June. Chocolate spot and aphids were assessed in June, rust in July.
(2) Samples for chemical analysis were taken immediately after spraying.

83/R/BE/4

GRAIN TONNES/HECTARE

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

SPRAYER	CNVNTL A	CNVNTL W	ELECT CA	ELECT UA	EL UW CR	MEAN
	3.74	2.95	3.46	3.43	3.51	3.42

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

TABLE	SPRAYER
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SED	0.086

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.122	3.6

GRAIN MEAN DM% 87.1

PLOT AREA HARVESTED 0.00960