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84/R/WW/4 Weedkiller Rates - W. Wheat

Rothamsted Research

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84/R/WW/4

WINTER WHEAT

WEEDKILLER RATES

Object: To study the effects of weedkillers applied at different rates by electrostatic or hydraulic sprayers - Stackyard.

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

Design: 4 randomised blocks of 8 plots.

Whole plot dimensions: 3.0 x 30.0.

Treatments: All combinations of:-

1. SPRAYERS Spraying machine:

HYDRAUL	Conventional hydraulic sprayer
ELECTRO	Electrostatic sprayer
2. RATES Rates of isoproturon + mecroprop:

STANDARD	Standard rate mecroprop at 2.0 l, isoproturon at 2.43 l on 15 Nov, 1983
HALF	Half above rate
QUARTER	Quarter above rate

plus one extra treatment:

EXTRA

NONE No weedkiller

- NOTES: (1) The conventional hydraulic sprayer was tractor mounted and applied the weedkillers in 200 l.
(2) The electrostatic sprayer was also tractor mounted and had spinning cones charged at 30 kv and applied the weedkillers in 10 l.

Basal applications: Manures: 'Nitro-Chalk' at 750 kg. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 250 l. Maneb at 1.6 kg, carbendazim at 0.15 kg and tridemorph at 0.38 kg with captafol at 1.2 kg in 250 l. Insecticide: Pirimicarb at 0.14 kg in 200 l.

Seed: Avalon, sown at 170 kg.

Cultivations, etc.: - Ploughed: 31 Aug, 1983. Spring-tine cultivated twice, rotary harrowed, seed sown: 20 Sept. N applied: 9 Apr, 1984. Prochloraz and carbendazim applied: 25 Apr. Maneb, carbendazim, tridemorph and captafol applied: 12 June. Insecticide applied: 26 June. Combine harvested: 21 Aug. Previous crops: W. wheat 1982, w. beans 1983.

NOTE: Samples of volunteer beans, winter wheat crop, and weeds were taken immediately after spraying for analysis of weedkiller deposits. Weed counts were made in November 1983, and January, February and May 1984.

84/R/WW/4

GRAIN TONNES/HECTARE

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

	RATES	STANDARD	HALF	QUARTER	MEAN
SPRAYERS					
HYDRAUL	12.19		11.45	11.18	11.61
ELECTRO	11.77		11.14	10.80	11.24
MEAN		11.98	11.30	10.99	11.42
NONE		9.48			
GRAND MEAN		11.15			

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

TABLE	SPRAYERS	RATES	SPRAYERS RATES & NONE
SED	0.185	0.227	0.321

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

STRATUM	DF	SE	CV%
BLOCK.WP	18	0.453	4.1
GRAIN MEAN DM%	87.5		
PLOT AREA HARVESTED	0.00828		