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85/R/B/6 Electrostatic Spraying and Mildew - S. Barley

Rothamsted Research

Rothamsted Research (1986) *85/R/B/6 Electrostatic Spraying and Mildew - S. Barley* ; Yields Of The Field Experiments 1985, pp 249 - 251 - DOI: <https://doi.org/10.23637/ERADOC-1-19>

85/R/B/6

SPRING BARLEY

ELECTROSTATIC SPRAYING AND MILDEW

Object: To study the penetration of sprays and control of mildew with a range of sprayers - Bones Close.

Sponsors: G.R. Cayley, D.C. Griffiths, B.J. Pye, P. Etheridge, R.E. Goodchild.

Design: 3 randomised blocks of 26 plots.

Whole plot dimension: 3.0 x 13.0.

Treatments: All combinations of:-

1. SPRAYER Sprayers applying fenpropimorph:
 - EL JUMBO 'Jumbo' electrostatic sprayer
 - EL NEW 'New' electrostatic sprayer
 - HYDRAUL Hydraulic sprayer
 - ROT ATOM Rotary atomiser sprayer
2. RATE Rates of fenpropimorph:
 - THIRD One third standard rate, at 0.25 kg
 - STANDARD Standard rate, at 0.75 kg
3. TIMING Timing of fenpropimorph:
 - EARLY Early, on 23 May, 1985
 - LATE Late, on 17 June
 - EA + LA Early plus late as above

plus one extra treatment

EXTRA

NONE No fenpropimorph (duplicated)

- NOTES: (1) Atem, dressed triadimenol and fuberidazole was sown on the headlands and surrounds at 160 kg.
(2) The 'Jumbo' electrostatic sprayer has spinning cone nozzles, spray was charged at 30 kv, and applied in 8.6 l.
(3) The 'New' electrostatic sprayer has inductively-charged vertically-mounted rotary atomisers and spray was applied in 7.9 l.
(4) Hydraulic application was made in 200 l.
(5) The rotary atomiser sprayer has uncharged vertically mounted rotary atomisers and spray was applied in 7.9 l.

Basal applications: Manures: (0:18:36) at 690 kg. 'Nitro-Chalk' (27.5% N) at 450 kg. Weedkillers: Mecoprop at 1.6 kg and cyanazine at 0.24 kg in 500 l.

Seed: Georgie, sown at 160 kg.

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Cultivations, etc.: - PK applied: 25 Sept, 1984. Ploughed: 31 Oct.
 Spring-tine cultivated: 13 Mar, 1985. Rotary harrowed, seed sown:
 14 Mar. N applied: 19 Apr. Weedkillers applied: 10 May. Combine
 harvested: 21 Aug. Previous crops: Winter oilseed rape 1983,
 w. wheat 1984.

NOTE: Chemical deposits were observed after spraying and mildew
 assessments were made on two occasions.

GRAIN TONNES/HECTARE

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

RATE	THIRD	STANDARD	MEAN	
SPRAYER				
EL JUMBO	7.78	7.86	7.82	
EL NEW	7.29	7.56	7.42	
HYDRAUL	7.71	7.66	7.68	
ROT ATOM	7.49	7.78	7.64	
MEAN	7.57	7.72	7.64	
TIMING	EARLY	LATE	EA + LA	MEAN
SPRAYER				
EL JUMBO	7.96	7.26	8.24	7.82
EL NEW	7.38	7.15	7.73	7.42
HYDRAUL	7.80	7.15	8.11	7.68
ROT ATOM	7.54	7.30	8.07	7.64
MEAN	7.67	7.21	8.04	7.64
TIMING	EARLY	LATE	EA + LA	MEAN
RATE				
THIRD	7.61	7.14	7.95	7.57
STANDARD	7.73	7.28	8.13	7.72
MEAN	7.67	7.21	8.04	7.64
SPRAYER	TIMING	EARLY	LATE	EA + LA
EL JUMBO	RATE			
	THIRD	7.87	7.35	8.13
	STANDARD	8.05	7.16	8.36
EL NEW	THIRD	7.20	6.93	7.73
	STANDARD	7.56	7.37	7.74
HYDRAUL	THIRD	7.93	7.12	8.07
	STANDARD	7.67	7.17	8.15
ROT ATOM	THIRD	7.44	7.16	7.87
	STANDARD	7.65	7.43	8.27
NONE	6.10			
GRAND MEAN	7.52			

85/R/B/6

GRAIN TONNES/HECTARE

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

TABLE	SPRAYER	RATE	TIMING	SPRAYER RATE
SED	0.085	0.060	0.073	0.120
TABLE	SPRAYER TIMING	RATE TIMING	SPRAYER RATE TIMING	
SED	0.146	0.104	0.207	

SED FOR COMPARING NONE WITH ANY ITEM IN
SPRAYER.RATE.TIMING TABLE IS 0.179

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

STRATUM	DF	SE	CV%
BLOCK.WP	51	0.254	3.4

GRAIN MEAN DM% 77.1

PLOT AREA HARVESTED 0.00265