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83/R/SW/1 Electrostatic Spraying and Mildew - Swedes

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83/R/SW/1

SWEDES

ELECTROSTATIC SPRAYING AND MILDEW

Object: To compare the effects of electrostatic and conventional sprayers on disease control and on yield of swedes - Pennell's Piece.

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

Design: 3 randomised blocks of 10 plots.

Whole plot dimensions: 3.05 x 13.7.

Treatments: All combinations of:-

1. SPRAYER Spraying machines:

CNVNTIAL	Conventional
ELECT NA	New electrostatic A
ELECT NB	New electrostatic B
ELECT O	Older electrostatic

2. NUARIMOL Rates of applying nuarimol fungicide(g):

40
80

plus one extra treatment not sprayed

EXTRA

NONE None (duplicated)

- NOTES: (1) The new electrostatic A sprayer had spinning-disc nozzles and applied spray in 6.95 l.
(2) The new electrostatic B and older electrostatic sprayers had spinning-cone nozzles, applied spray in 10.6 l, the former was mounted at an angle of 30° to the vertical, the latter vertical.
(3) Nuarimol was applied on 11 Aug, 1983 by all sprayers, in 350 l by the conventional sprayer.

Basal applications: Manures: Chalk at 5.0 t. (0:18:36) at 630 kg. 'Nitro-Chalk' at 380 kg. Weedkillers: Glyphosate at 1.4 kg in 250 l. Paraquat at 0.98 kg ion in 900 l. Trifluralin at 1.1 kg in 250 l. Insecticide: Pirimicarb at 0.075 kg to all treatments, applied in 380 l by conventional sprays to all treatments except one of the duplicate EXTRA : NONE treatments, by electrostatic sprayer in 8.3 l.

Seed: Doon Major, dressed gamma HCH with captan, sown at 2.0 kg.

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Cultivations, etc.:- Glyphosate applied: 28 Oct, 1982. Chalk applied: 29 Nov. Ploughed: 8 Dec. N and PK applied: 28 Apr, 1983. Paraquat applied: 14 May. Heavy spring-tine cultivated, trifluralin applied, rotary harrowed: 23 May. Seed sown: 25 May. Plants singled: 29 June. Insecticide applied: 25 July. Harvested: 10 Nov. Previous crops: Peas 1981, s. barley 1982.

NOTE: Samples for chemical analysis were taken immediately after spraying. Mildew assessments were made at intervals throughout the season.

TOTAL TUBERS TONNES/HECTARE

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

SPRAYER	CNVNTIAL	ELECT NA	ELECT NB	ELECT O	MEAN
NUARIMOL					
40	29.2	32.7	36.0	35.1	33.2
80	33.7	34.5	33.2	32.3	33.4
MEAN	31.5	33.6	34.6	33.7	33.3
NUARIMOL NONE	23.9				
GRAND MEAN	31.4				

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

TABLE	NUARIMOL	SPRAYER	NUARIMOL SPRAYER

SED	3.40	4.80	6.79

SED FOR COMPARING NUARIMOL NONE WITH A MEAN IN NUARIMOL.SPRAYER TABLE IS 5.88

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

STRATUM	DF	SE	CV%
BLOCK.WP	19	8.32	26.5
PLOT AREA HARVESTED	0.00084		