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85/R/B/2

WINTER BARLEY

CONTROL OF BYDV

Object: To study the effects of insecticides and alarm pheromone derivatives and their interaction with control of autumn volunteers systems on the incidence of BYDV - Scout N.

Sponsors: D.C. Griffiths, G.R. Cayley, J.H. Stevenson, J.A. Pickett, R.T. Plumb.

Design: 2 whole plots divided into 3 replicates of 6 sub-plots.

Whole plot dimensions: 21.0 x 96.0.

Treatments: All combinations of:-

Whole plots

- | | |
|-------------|---|
| 1. VOLNTEER | Control of volunteers prior to ploughing shortly before sowing: |
| KILLED | Maximum control of all green plant matter |
| PRESENT | Volunteer germination and survival encouraged |

Sub plots

- | | |
|-------------|---|
| 2. SPRY INS | Sprays of insecticides and pheromone derivatives: |
| NONE | None |
| CYP EL | Cypermethrin applied electrostatically |
| CYP HY | Cypermethrin applied hydraulically |
| PHA O EL | Pheromone 'A' in oil applied electrostatically |
| PHA W EL | Pheromone 'A' in water applied electrostatically |
| PHB W EL | Pheromone 'B' in water applied electrostatically |

- NOTES: (1) Paraquat was applied at 0.60 kg ion in 500 l on 22 Aug, 1984, to VOLNTEER KILLED plots.
- (2) Electrostatic application was by a 'Jumbo' sprayer. This has spinning cone nozzles, spray was charged at 30 kv and applied in 9.2 l.
- (3) Hydraulic application was made in 200 l on 26 Oct.
- (4) Cypermethrin was applied at 0.025 kg on 26 Oct, 1984 and pheromones at 1.0 kg on 2 Oct, 1984 repeated on 12 Oct and 26 Oct.

Basal applications: Manures: (0:18:36) at 340 kg. 'Nitro-Chalk' (26% N) at 620 kg. Weedkillers: Isoproturon at 1.5 kg, clopyralid at 0.05 kg, bromoxynil octanoate at 0.24 kg and mecoprop (as 'CMPP' at 3.0 l) applied with the fungicides in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg. Desiccant: Diquat at 0.80 kg ion with a wetting agent ('Agral' at 0.5 l) in 500 l.

Seed: Panda, sown at 150 kg.

85/R/B/2

Cultivations, etc.:— Heavy spring-tine cultivated: 31 July, 1984.
Disced: 2 Aug. PK applied: 8 Aug. Ploughed: 12 Sept. Disced:
14 Sept. Rotary harrowed, seed sown: 18 Sept. N applied,
weedkillers and fungicides applied: 9 Apr, 1985. Desiccant with
wetting agent applied: 24 July. Combine harvested: 6 Aug. Previous
crops: W. barley 1983 and 1984.

NOTE: Aphid and virus counts were taken and beneficial insects assessed.

GRAIN TONNES/HECTARE

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

SPRY INS VOLNTEER	NONE	CYP EL	CYP HY PHA O EL PHA W EL PHB W EL	MEAN			
KILLED	6.97	8.01	7.22	7.19	7.41	6.96	7.29
PRESENT	5.97	7.37	7.16	7.27	7.16	6.18	6.85
MEAN	6.47	7.69	7.19	7.23	7.28	6.57	7.07

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

TABLE	SPRY INS	VOLNTEER* SPRY INS
SED	0.264	0.373

* WITHIN THE SAME LEVEL OF VOLNTEER ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP	20	0.457	6.5

GRAIN MEAN DM% 80.1

SUB PLOT AREA HARVESTED 0.00163