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84/R/WW/12 Persistence of Aphicides - W. Wheat

Rothamsted Research

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84/R/WW/12

WINTER WHEAT

PERSISTENCE OF APHICIDES

Object: To examine the persistence of aphicides applied at two growth stages and their effect on the yield of winter wheat - Bones Close.

Sponsors: N. Carter.

Design: 4 randomised blocks of 12 plots.

Whole plot dimensions: 3.0 x 13.0.

Treatments: All combinations of:-

1. APHICIDE Aphicides:

DELTAMET	Deltamethrin at 0.012 kg
DEMETON	Demeton-S-methyl at 0.24 kg
PIRIM ST	Pirimicarb (standard formulation) at 0.14 kg
PIRIM NF	Pirimicarb (new formulation) at 0.14 kg
PIRIM EN	Pirimicarb (encapsulated) at 0.14 kg

2. APH TIME Timing of aphicides:

GS 45	Booting, growth stage 45 on 4 June, 1984, repeated on 12 June
GS 65	Flowering, growth stage 65 on 25 June

Plus one extra treatment:

EXTRA	
NONE	No aphicide (duplicated)

NOTE: Aphicide treatments were applied in 220 l on 4 June and in 200 l on 12 June and 25 June.

Basal applications:

Manures: (5:14:30) at 340 kg. 'Nitro-Chalk' at 560 kg. Weedkillers: Isoproturon at 2.5 kg with mecoprop (as 'CMPP' at 3.6 l) in 250 l. Fungicides: Propiconazole on two occasions, at 0.25 kg in 250 l on the first occasion, at 0.12 kg in 200 l on the second.

Seed: Stetson, sown at 170 kg.

Cultivations, etc.:-

Ploughed: 23 Aug, 1983. Spring-tine cultivated: 20 Sept. NPK applied: 28 Sept. Rotary harrowed, seed sown: 17 Oct. Weedkillers applied: 1 Dec. N applied: 10 Apr, 1984. Fungicide applied: 4 June, 29 June. Combine harvested: 20 Aug. Previous crops: W. barley 1982, w. rape 1983.

NOTE: Aphicide persistence was bioassayed, using *Sitobion avenae*, on the day after spraying and at weekly intervals for three weeks thereafter. Naturally occurring aphids were counted during this period.

84/R/WW/12

GRAIN TONNES/HECTARE

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

APHICIDE	DELTAMET	DEMETON	PIRIM ST	PIRIM NF	PIRIM EN	MEAN
APH TIME						
GS 45	11.41	11.57	10.85	11.32	11.47	11.32
GS 65	11.35	11.33	11.39	11.48	11.51	11.41
MEAN	11.38	11.45	11.12	11.40	11.49	11.37
NONE	10.89					
GRAND MEAN	11.29					

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

TABLE	APH TIME	APHICIDE	APH TIME APHICIDE
SED	0.082	0.130	0.184

SED FOR COMPARING EXTRA NONE WITH ANY ITEM IN
APHICIDE. APH TIME TABLE IS 0.159

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

STRATUM	DF	SE	CV%
BLOCK.WP	34	0.260	2.3

GRAIN MEAN DM% 87.8

PLOT AREA HARVESTED 0.00359