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81/R/WW/7 Integrated Pest Control - W. Wheat

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81/R/WW/7

WINTER WHEAT

INTEGRATED PEST CONTROL

Object: To study the effects of chemical and biological treatments on the incidence of pests and beneficial insects and on the yield of w. wheat - Gt. Harpenden I.

Sponsors: W. Powell, R. Bardner, C.A. Edwards, G.J.W. Dean, A.M. Dewar, N. Wilding, J.R. Lofty, K.E. Fletcher, R.T. Plumb.

Design: 3 randomised blocks of 5 plots.

Whole plot dimensions: 13.7 x 19.2.

Treatments:

TREATMNT	Chemical & biological treatments:
NONE	None (duplicated)
BENOMYL	Benomyl at 0.56 kg in 360 l on 7 April, 1981
DIMETHOA	Dimethoate at 0.34 l in 600 l on 22 June
PIRIMICA	Pirimicarb at 0.14 kg in 600 l on 22 June

NOTES: (1) Polythene barriers, 45 cm above ground level and 15 cm below ground level, were erected around each plot on 5 May, 1981, and remained until harvest.

(2) A planned biological control treatment, using the aphid pathogenic fungus *Erynia*, was omitted because aphids were few.

Basal applications: Manures: (10:23:23) at 250 kg, combine drilled. 'Nitro-Chalk' at 560 kg. Weedkillers: Paraquat at 0.84 kg ion in 250 l applied twice. Chlortoluron at 5.6 l in 250 l. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.7 l) in 250 l.

Seed: Flanders, sown at 200 kg.

Cultivations, etc.: - Disc harrowed: 21 Aug, 1980. Paraquat applied: 19 Sept, 3 Oct. Heavy spring-tine cultivated three times: 4-6 Oct. Spring-tine cultivated and seed sown: 8 Oct. Chlortoluron applied: 14 Oct. N applied: 16 Apr, 1981. 'Brittox' applied: 21 Apr. Combine harvested: 26 Aug. Previous crops: S. barley 1979, w. oats, 1980.

NOTES: Ground surface insects were counted weekly between April and August and aerial insects weekly between May and July. Soil insects were counted in June. Aphid numbers, infection with *Erynia* and aphid parasite numbers were assessed in June and July.

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GRAIN TONNES/HECTARE

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

TREATMNT	NONE	BENOMYL	DIMETHOA	PIRIMICA	MEAN
	7.03	7.17	7.27	6.79	7.06

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

TABLE	TREATMNT
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SED	0.336 MIN REP
	0.291 MAX-MIN

TREATMNT
MAX-MIN NONE V ANY OF REMAINDER
MIN REP ANY OF REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.412	5.8

GRAIN MEAN DM% 87.2

PLOT AREA HARVESTED 0.00293