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77/R/WS/1 Fungicides, Grain Microflora - S. Wheat

Rothamsted Research

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77/R/WS/1

SPRING WHEAT

FUNGICIDES AND GRAIN MICROFLORA

Object: To study the effects of a range of fungicides applied at a range of times on the yield, quality and grain microflora of spring wheat - Summerdells II.

Sponsor: R.A. Hill.

Design: Two replicates of 3 x 2 x 2 x 2 fully randomised.

Whole plot dimensions: 4.27 x 13.1.

Treatments: All combinations of:-

1. FUNGICIDE	Broad spectrum fungicides (in addition to basal specific fungicide tridemorph)		
CAPTAFOL	Captafol at 1.4 kg		
CARB+MAN	Carbendazim at 0.25 kg + maneb at 1.6 kg		
BENOMYL	Benomyl at 1.1 kg		
2. APP TIME	Application times of broad spectrum fungicides:		
	7 July	28 July	30 Aug
NONE	None	None	None
E	Sprayed	None	None
M	None	Sprayed	None
L	None	None	Sprayed
E+M	Sprayed	Sprayed	None
E+L	Sprayed	None	Sprayed
M+L	None	Sprayed	Sprayed
E+M+L	Sprayed	Sprayed	Sprayed

NOTE: Treatment sprays were applied in 340 l.

Basal applications: Manures: (20:14:14) at 440 kg, combine drilled. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l). Fungicide: Tridemorph at 0.53 kg in 340 l. Insecticide: Pirimicarb at 0.14 kg in 270 l.

Seed: Sappo, sown at 190 kg.

Cultivations, etc:- Ploughed: 13-18 Oct, 1976. Spring-tine cultivated: 7 Mar, 1977. Spring-tine cultivated, seed sown: 4 Apr. Weedkillers applied: 26 May. Fungicide applied: 19 June. Insecticide applied: 14 July. Combine harvested: 23 Sept. Previous crops: Winter oats 1975, 1976.

NOTE: Grain microflora were assessed weekly after heading and at harvest. 1000 grain weights were taken and grain was assessed for breadmaking quality.

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GRAIN TONNES/HECTARE

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

APP TIME	E	M	L	E+M	E+L	M+L	E+M+L	MEAN
FUNGCIDE								
CAPTAFOL	6.18	6.15	6.01	6.21	6.22	6.37	6.35	6.21
CARB+MAN	6.28	6.34	6.10	6.36	6.42	6.16	6.39	6.29
BENOMYL	6.19	6.44	6.18	6.48	6.26	5.74	6.48	6.25
MEAN	6.22	6.31	6.09	6.35	6.30	6.09	6.40	6.25

APP TIME NONE 6.15

GRAND MEAN 6.24

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

TABLE	FUNGCIDE	APP TIME	FUNGCIDE APP TIME
SED	0.079	0.120	0.209

SED OF FUNGCIDE.APP TIME V APP TIME NONE 0.170

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

STRATUM	DF	SE	CV%
WP	26	0.209	3.3

GRAIN MEAN DM% 77.4

PLOT AREA HARVESTED 0.00195