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87/R/WW/4 Factors Affecting Take-all - W. Wheat
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87/R/WW/4

WINTER WHEAT

FACTORS AFFECTING TAKE-ALL

Object: To study the effects of a range of factors on the incidence of take-all and on the yield of w. wheat - Summerdells I.

Sponsors: D. Hornby, G.L. Bateman, R.J. Gutteridge.

Design: A single replicate of 2 x 2 x 2 x 2 x 2.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. SOWDATE Dates of sowing:

25 SEPT 25 September, 1986
31 OCT 31 October
2. SOILFUNG Application of fungicide to the seedbed:

NONE None
NUARIMOL Nuarimol at 1.3 kg in 375 l
3. SEEDRESS Seed dressings:

ORGANO M Organo mercury
TRIADIME Triadimenol plus fuberidazole
4. AUTUMN N N application to the seedbed:

0 None
60 60 kg N as 'Nitro-Chalk' on 25 Sept, 1986 or 31 Oct
 for successive SOWDATES
5. N TIME Spring application of 200 kg N:

SINGLE Single application on 16 Apr, 1987
DIVIDED 40 kg early, on 13 Feb, 160 kg later, on 16 Apr
6. N FORM Forms of spring nitrogen:

SUL AMM Sulphate of ammonia
AMM NITR Ammonium nitrate as 'Nitro-Chalk'

NOTE: Nuarimol was applied at 1.3 kg in error for the intended rate of 1.0 kg.

Basal applications: Manures: Chalk at 5.0 t. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg with clopyralid at 0.07 kg, bromoxynil at 0.34 kg and mecoprop at 2.5 kg in 200 l. Fungicides: Carbendazim at 0.15 kg and prochloraz at 0.40 kg in 200 l. Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.6 kg in 200 l.

Seed: Avalon, sown at 170 kg.

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Cultivations, etc.:— Heavy spring-tine cultivated, disced: 19 Aug, 1986. Chalk applied: 4 Sept. Paraquat applied: 11 Sept. Spring-tine cultivated: 24 Sept. SOWDATE 25 SEPT plots rotary harrowed, seed sown: 25 Sept. SOWDATE 31 OCT plots rotary harrowed, seed sown: 31 Oct. Remaining weedkillers applied: 16 Apr, 1987. Carbendazim and prochloraz applied: 7 May. Propiconazole, carbendazim and maneb applied: 1 July. Combine harvested: 4 Sept. Previous crops: W. wheat 1985, w. barley 1986.

NOTE: Plant samples were taken in mid-March, end of April and the beginning of July to assess take-all. Eyespot and sharp eyespot were assessed in July. Components of yield were measured and quality assessments were made on the grain.

GRAIN TONNES/HECTARE

***** Tables of means *****

SOILFUNG	NONE	NUARIMOL	Mean
SOWDATE			
25 SEPT	5.97	6.23	6.10
31 OCT	5.67	6.09	5.88
Mean	5.82	6.16	5.99
SEEDRESS	ORGANO M	TRIADIME	Mean
SOWDATE			
25 SEPT	6.13	6.06	6.10
31 OCT	5.88	5.88	5.88
Mean	6.01	5.97	5.99
SEEDRESS	ORGANO M	TRIADIME	Mean
SOILFUNG			
NONE	5.74	5.90	5.82
NUARIMOL	6.28	6.04	6.16
Mean	6.01	5.97	5.99
AUTUMN N	0	60	Mean
SOWDATE			
25 SEPT	5.85	6.34	6.10
31 OCT	5.71	6.05	5.88
Mean	5.78	6.20	5.99
AUTUMN N	0	60	Mean
SOILFUNG			
NONE	5.65	5.99	5.82
NUARIMOL	5.91	6.40	6.16
Mean	5.78	6.20	5.99

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GRAIN TONNES/HECTARE

***** Tables of means *****

AUTUMN N	0	60	Mean
SEEDRESS			
ORGANO M	5.79	6.23	6.01
TRIADIME	5.77	6.17	5.97
Mean	5.78	6.20	5.99
N TIME	SINGLE	DIVIDED	Mean
SOWDATE			
25 SEPT	6.03	6.16	6.10
31 OCT	5.87	5.88	5.88
Mean	5.95	6.02	5.99
N TIME	SINGLE	DIVIDED	Mean
SOILFUNG			
NONE	5.80	5.83	5.82
NUARIMOL	6.11	6.21	6.16
Mean	5.95	6.02	5.99
N TIME	SINGLE	DIVIDED	Mean
SEEDRESS			
ORGANO M	6.05	5.96	6.01
TRIADIME	5.85	6.08	5.97
Mean	5.95	6.02	5.99
N TIME	SINGLE	DIVIDED	Mean
AUTUMN N			
0	5.70	5.85	5.78
60	6.20	6.19	6.20
Mean	5.95	6.02	5.99
N FORM	SUL AMM	AMM NITR	Mean
SOWDATE			
25 SEPT	5.90	6.30	6.10
31 OCT	5.90	5.86	5.88
Mean	5.90	6.08	5.99
N FORM	SUL AMM	AMM NITR	Mean
SOILFUNG			
NONE	5.68	5.95	5.82
NUARIMOL	6.11	6.20	6.16
Mean	5.90	6.08	5.99

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GRAIN TONNES/HECTARE

***** Tables of means *****

N FORM	SUL	AMM	AMM	NITR	Mean
SEEDRESS					
ORGANO M		5.90		6.11	6.01
TRIADIME		5.89		6.05	5.97
Mean		5.90		6.08	5.99
N FORM	SUL	AMM	AMM	NITR	Mean
AUTUMN N					
0		5.63		5.93	5.78
60		6.16		6.23	6.20
Mean		5.90		6.08	5.99
N FORM	SUL	AMM	AMM	NITR	Mean
N TIME					
SINGLE		5.83		6.07	5.95
DIVIDED		5.96		6.08	6.02
Mean		5.90		6.08	5.99
SOILFUNG	NONE			NUARIMOL	
SOWDATE SEEDRESS	ORGANO M	TRIADIME	ORGANO M	TRIADIME	
25 SEPT	5.95	5.99	6.32	6.13	
31 OCT	5.53	5.80	6.23	5.95	
SOILFUNG	NONE			NUARIMOL	
SOWDATE AUTUMN N	0	60	0	60	
25 SEPT	5.70	6.23	6.00	6.45	
31 OCT	5.59	5.74	5.82	6.36	
SEEDRESS	ORGANO M			TRIADIME	
SOWDATE AUTUMN N	0	60	0	60	
25 SEPT	5.86	6.40	5.84	6.28	
31 OCT	5.71	6.05	5.70	6.05	
SEEDRESS	ORGANO M			TRIADIME	
SOILFUNG AUTUMN N	0	60	0	60	
NONE	5.58	5.90	5.71	6.08	
NUARIMOL	6.00	6.56	5.83	6.25	
SOILFUNG	NONE			NUARIMOL	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED	
25 SEPT	5.92	6.01	6.15	6.31	
31 OCT	5.68	5.65	6.07	6.11	
SEEDRESS	ORGANO M			TRIADIME	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED	
25 SEPT	6.20	6.07	5.87	6.26	
31 OCT	5.90	5.86	5.84	5.91	

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GRAIN TONNES/HECTARE

***** Tables of means *****

		SEEDRESS		ORGANO M		TRIADIME			
SOILFUNG	N TIME	SINGLE	DIVIDED		SINGLE	DIVIDED			
NONE		5.75	5.73		5.85	5.94			
NUARIMOL		6.35	6.20		5.86	6.22			
AUTUMN N		0		60					
SOWDATE	N TIME	SINGLE	DIVIDED		SINGLE	DIVIDED			
25 SEPT		5.69	6.02		6.38	6.31			
31 OCT		5.72	5.69		6.02	6.07			
AUTUMN N		0		60					
SOILFUNG	N TIME	SINGLE	DIVIDED		SINGLE	DIVIDED			
NONE		5.52	5.78		6.08	5.89			
NUARIMOL		5.89	5.93		6.32	6.49			
AUTUMN N		0		60					
SEEDRESS	N TIME	SINGLE	DIVIDED		SINGLE	DIVIDED			
ORGANO M		5.68	5.90		6.42	6.03			
TRIADIME		5.73	5.81		5.98	6.35			
SOILFUNG		NONE		NUARIMOL					
SOWDATE	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
25 SEPT		5.70			6.23	6.09			6.36
31 OCT		5.66			5.67	6.13			6.05
SEEDRESS		ORGANO M		TRIADIME					
SOWDATE	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
25 SEPT		5.84			6.43	5.96			6.16
31 OCT		5.97			5.79	5.82			5.93
SEEDRESS		ORGANO M		TRIADIME					
SOILFUNG	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
NONE		5.56			5.92	5.80			5.99
NUARIMOL		6.25			6.30	5.97			6.11
AUTUMN N		0		60					
SOWDATE	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
25 SEPT		5.49			6.21	6.30			6.39
31 OCT		5.77			5.64	6.02			6.08
AUTUMN N		0		60					
SOILFUNG	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
NONE		5.40			5.90	5.96			6.01
NUARIMOL		5.87			5.96	6.36			6.45
AUTUMN N		0		60					
SEEDRESS	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
ORGANO M		5.56			6.02	6.25			6.20
TRIADIME		5.71			5.83	6.07			6.26
N TIME		SINGLE		DIVIDED					
SOWDATE	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
25 SEPT		5.75			6.31	6.04			6.28
31 OCT		5.91			5.83	5.88			5.89

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GRAIN TONNES/HECTARE

***** Tables of means *****

	N TIME	SINGLE			DIVIDED		
SOILFUNG	N FORM	SUL AMM	AMM	NITR	SUL AMM	AMM	NITR
NONE		5.53		6.07	5.83		5.84
NUARIMOL		6.13		6.08	6.09		6.33

	N TIME	SINGLE			DIVIDED		
SEEDRESS	N FORM	SUL AMM	AMM	NITR	SUL AMM	AMM	NITR
ORGANO M		5.95		6.15	5.86		6.07
TRIADIME		5.71		6.00	6.06		6.10

	N TIME	SINGLE			DIVIDED		
AUTUMN N	N FORM	SUL AMM	AMM	NITR	SUL AMM	AMM	NITR
0		5.44		5.97	5.82		5.89
60		6.22		6.18	6.10		6.28

*** Standard errors of differences of means ***

Margins of two factor tables 0.173
 Two factor tables 0.245
 Three factor tables 0.347

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.693	11.6

GRAIN MEAN DM% 72.5

PLOT AREA HARVESTED 0.00272