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

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Rothamsted Research (1989) *88/R/WW/4 Factors Affecting Take-all - W. Wheat* ; Yields Of The Field Experiments 1988, pp 147 - 152 - DOI: <https://doi.org/10.23637/ERADOC-1-43>

88/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 - Harwoods Piece.

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

Design: A single replicate of 2 x 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:

 21 SEPT 21 September, 1987
 26 OCT 26 October
2. **SOILFUNG** Application of fungicide to the seedbed:

 NONE None
 NUARIMOL Nuarimol at 1.1 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 21 Sept, 1987 or 26 Oct
 for successive SOWDATES
5. **N TIME** Spring application of 200 kg N:

 SINGLE Single application on 8 Apr, 1988
 DIVIDED 40 kg early on 16 Feb, 160 kg later, on 8 Apr
6. **N FORM** Forms of spring nitrogen:

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

Basal applications: Manures: Muriate of potash at 420 kg. Weedkillers: Fluroxypyr at 0.20 kg with metsulfuron-methyl at 0.006 kg in 200 l. Diclofop-methyl at 1.1 kg in 200 l. Fungicides: Propiconazole at 0.12 kg and tridemorph at 0.25 kg in 260 l.

Seed: Avalon, sown at 170 kg.

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Cultivations, etc.:- Muriate of potash applied: 2 Sept, 1987. Ploughed: 7 Sept. Rotary harrowed: 19 Sept. SOWDATE 21 SEPT plots rotary harrowed, seed sown: 21 Sept. SOWDATE 26 OCT plots rotary harrowed, seed sown: 26 Oct. Fluroxypyr with metsulfuron-methyl applied: 25 Apr, 1988. Diclofop-methyl applied: 6 May. Fungicides applied: 21 June. Combine harvested: 23 Aug. Previous crops: W. wheat 1986 and 1987.

NOTE: Plant samples were taken in mid-March, the 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			
21 SEPT	6.81	7.24	7.02
26 OCT	8.49	8.08	8.28
Mean	7.65	7.66	7.65
SEEDRESS	ORGANO M	TRIADIME	Mean
SOWDATE			
21 SEPT	6.61	7.43	7.02
26 OCT	8.35	8.22	8.28
Mean	7.48	7.83	7.65
SEEDRESS	ORGANO M	TRIADIME	Mean
SOILFUNG			
NONE	7.38	7.92	7.65
NUARIMOL	7.58	7.74	7.66
Mean	7.48	7.83	7.65
AUTUMN N	0	60	Mean
SOWDATE			
21 SEPT	6.62	7.42	7.02
26 OCT	8.20	8.37	8.28
Mean	7.41	7.90	7.65
AUTUMN N	0	60	Mean
SOILFUNG			
NONE	7.23	8.07	7.65
NUARIMOL	7.59	7.73	7.66
Mean	7.41	7.90	7.65
AUTUMN N	0	60	Mean
SEEDRESS			
ORGANO M	7.15	7.82	7.48
TRIADIME	7.67	7.98	7.83
Mean	7.41	7.90	7.65

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GRAIN TONNES/HECTARE

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

N TIME	SINGLE	DIVIDED	Mean
SOWDATE			
21 SEPT	6.85	7.19	7.02
26 OCT	8.13	8.44	8.28
Mean	7.49	7.81	7.65
N TIME	SINGLE	DIVIDED	Mean
SOILFUNG			
NONE	7.46	7.84	7.65
NUARIMOL	7.52	7.79	7.66
Mean	7.49	7.81	7.65
N TIME	SINGLE	DIVIDED	Mean
SEEDRESS			
ORGANO M	7.31	7.66	7.48
TRIADIME	7.68	7.97	7.83
Mean	7.49	7.81	7.65
N TIME	SINGLE	DIVIDED	Mean
AUTUMN N			
0	7.19	7.63	7.41
60	7.80	8.00	7.90
Mean	7.49	7.81	7.65
N FORM	SUL AMM	AMM NITR	Mean
SOWDATE			
21 SEPT	7.17	6.87	7.02
26 OCT	8.33	8.24	8.28
Mean	7.75	7.56	7.65
N FORM	SUL AMM	AMM NITR	Mean
SOILFUNG			
NONE	7.72	7.58	7.65
NUARIMOL	7.78	7.54	7.66
Mean	7.75	7.56	7.65
N FORM	SUL AMM	AMM NITR	Mean
SEEDRESS			
ORGANO M	7.40	7.56	7.48
TRIADIME	8.09	7.56	7.83
Mean	7.75	7.56	7.65

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GRAIN TONNES/HECTARE

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

N FORM	SUL AMM	AMM	NITR	Mean
AUTUMN N				
0	7.44		7.37	7.41
60	8.05		7.74	7.90
Mean	7.75		7.56	7.65
N FORM	SUL AMM	AMM	NITR	Mean
N TIME				
SINGLE	7.53		7.45	7.49
DIVIDED	7.97		7.66	7.81
Mean	7.75		7.56	7.65

SOILFUNG	NONE	NUARIMOL
SOWDATE SEEDRESS		
21 SEPT	6.32	7.29
26 OCT	8.44	8.54
ORGANO M TRIADIME		
21 SEPT	6.90	7.58
26 OCT	8.26	7.89
SOILFUNG	NONE	NUARIMOL
SOWDATE AUTUMN N		
21 SEPT	6.05	7.56
26 OCT	8.41	8.57
ORGANO M TRIADIME		
21 SEPT	7.19	7.29
26 OCT	7.99	8.17
SEEDRESS	ORGANO M	TRIADIME
SOWDATE AUTUMN N		
21 SEPT	6.11	7.10
26 OCT	8.18	8.53
ORGANO M TRIADIME		
21 SEPT	7.12	7.75
26 OCT	8.22	8.21
SEEDRESS	ORGANO M	TRIADIME
SOILFUNG AUTUMN N		
NONE	6.81	7.95
NUARIMOL	7.48	7.68
ORGANO M TRIADIME		
NONE	7.65	8.18
NUARIMOL	7.69	7.78
SOILFUNG	NONE	NUARIMOL
SOWDATE N TIME		
21 SEPT	6.76	6.85
26 OCT	8.16	8.82
SINGLE DIVIDED		
21 SEPT	6.94	7.53
26 OCT	8.11	8.05
SEEDRESS	ORGANO M	TRIADIME
SOWDATE N TIME		
21 SEPT	6.47	6.74
26 OCT	8.14	8.57
SINGLE DIVIDED		
21 SEPT	7.23	7.64
26 OCT	8.12	8.31
SEEDRESS	ORGANO M	TRIADIME
SOILFUNG N TIME		
NONE	7.28	7.49
NUARIMOL	7.33	7.82
SINGLE DIVIDED		
NONE	7.64	8.19
NUARIMOL	7.71	7.76
AUTUMN N	0	60
SOWDATE N TIME		
21 SEPT	6.39	6.85
26 OCT	7.99	8.41
SINGLE DIVIDED		
21 SEPT	7.32	7.53
26 OCT	8.27	8.47

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GRAIN TONNES/HECTARE

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

SOILFUNG		AUTUMN N		0		60	
	N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED	SINGLE	DIVIDED
NONE		6.98	7.48	7.95	8.19		
NUARIMOL		7.40	7.77	7.65	7.80		

SEEDRESS		AUTUMN N		0		60	
	N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED	SINGLE	DIVIDED
ORGANO M		7.04	7.26	7.58	8.06		
TRIADIME		7.34	8.00	8.02	7.94		

SOWDATE		SOILFUNG		NONE		NUARIMOL	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
21 SEPT		6.93	6.68	7.40	7.07		
26 OCT		8.51	8.48	8.15	8.00		

SOWDATE		SEEDRESS		ORGANO M		TRIADIME	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
21 SEPT		6.58	6.64	7.76	7.11		
26 OCT		8.23	8.47	8.43	8.00		

SOILFUNG		SEEDRESS		ORGANO M		TRIADIME	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
NONE		7.28	7.48	8.16	7.67		
NUARIMOL		7.52	7.63	8.03	7.44		

SOWDATE		AUTUMN N		0		60	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
21 SEPT		6.58	6.66	7.76	7.09		
26 OCT		8.31	8.09	8.35	8.39		

SOILFUNG		AUTUMN N		0		60	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
NONE		7.23	7.23	8.21	7.92		
NUARIMOL		7.66	7.52	7.90	7.56		

SEEDRESS		AUTUMN N		0		60	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
ORGANO M		7.04	7.25	7.76	7.87		
TRIADIME		7.84	7.50	8.35	7.61		

SOWDATE		N TIME		SINGLE		DIVIDED	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM
21 SEPT		6.96	6.75	7.38	7.00		
26 OCT		8.11	8.16	8.55	8.32		

SOILFUNG		SINGLE		DIVIDED		SINGLE		DIVIDED	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR
NONE		7.49	7.44	7.95	7.72				
NUARIMOL		7.58	7.47	7.98	7.60				

SEEDRESS		N TIME		SINGLE		DIVIDED		SINGLE		DIVIDED	
	N FORM	SUL	AMM	AMM	NITR	SUL	AMM	AMM	NITR	SUL	AMM
ORGANO M		7.20	7.41	7.61	7.71						
TRIADIME		7.86	7.50	8.33	7.62						

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GRAIN TONNES/HECTARE

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

AUTUMN N	N TIME		SINGLE			DIVIDED		
	N	FORM	SUL	AMM	AMM NITR	SUL	AMM	AMM NITR
0			7.17		7.20	7.72		7.54
60			7.89		7.70	8.22		7.78

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

Margins of two factor tables	0.192
Two factor tables	0.271
Three factor tables	0.384

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.768	10.0

GRAIN MEAN DM% 84.4

PLOT AREA HARVESTED 0.00271