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ROTHAMSTED RESEARCH

Yields of the Field Experiments 1988

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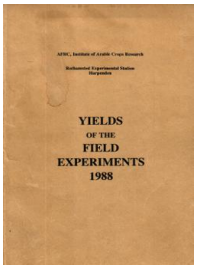

88/R/WW/4 Factors Affecting Take-all - W. Wheat

Rothamsted Research

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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 SOWDATE	SINGLE	DIVIDED	Mean
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 SOILFUNG	SINGLE	DIVIDED	Mean
NONE	7.46	7.84	7.65
NUARIMOL	7.52	7.79	7.66
Mean	7.49	7.81	7.65

N TIME SEEDRESS	SINGLE	DIVIDED	Mean
ORGANO M	7.31	7.66	7.48
TRIADIME	7.68	7.97	7.83
Mean	7.49	7.81	7.65

N TIME AUTUMN N	SINGLE	DIVIDED	Mean
0	7.19	7.63	7.41
60	7.80	8.00	7.90
Mean	7.49	7.81	7.65

N FORM SOWDATE	SUL AMM	AMM NITR	Mean
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 SOILFUNG	SUL AMM	AMM NITR	Mean
NONE	7.72	7.58	7.65
NUARIMOL	7.78	7.54	7.66
Mean	7.75	7.56	7.65

N FORM SEEDRESS	SUL AMM	AMM NITR	Mean
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	ORGANO M	TRIADIME	ORGANO M	TRIADIME
21 SEPT	6.32	7.29	6.90	7.58
26 OCT	8.44	8.54	8.26	7.89

SOILFUNG	NONE		NUARIMOL	
SOWDATE AUTUMN N	0	60	0	60
21 SEPT	6.05	7.56	7.19	7.29
26 OCT	8.41	8.57	7.99	8.17

SEEDRESS	ORGANO M		TRIADIME	
SOWDATE AUTUMN N	0	60	0	60
21 SEPT	6.11	7.10	7.12	7.75
26 OCT	8.18	8.53	8.22	8.21

SEEDRESS	ORGANO M		TRIADIME	
SOILFUNG AUTUMN N	0	60	0	60
NONE	6.81	7.95	7.65	8.18
NUARIMOL	7.48	7.68	7.69	7.78

SOILFUNG	NONE		NUARIMOL	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.76	6.85	6.94	7.53
26 OCT	8.16	8.82	8.11	8.05

SEEDRESS	ORGANO M		TRIADIME	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.47	6.74	7.23	7.64
26 OCT	8.14	8.57	8.12	8.31

SEEDRESS	ORGANO M		TRIADIME	
SOILFUNG N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
NONE	7.28	7.49	7.64	8.19
NUARIMOL	7.33	7.82	7.71	7.76

AUTUMN N	0		60	
SOWDATE N TIME	SINGLE	DIVIDED	SINGLE	DIVIDED
21 SEPT	6.39	6.85	7.32	7.53
26 OCT	7.99	8.41	8.27	8.47

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GRAIN TONNES/HECTARE

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

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

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

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

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

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

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

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

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

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

SINGLE		DIVIDED	
SOILFUNG 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

N TIME	SINGLE		DIVIDED	
SEEDRESS N FORM	SUL AMM	AMM NITR	SUL AMM	AMM NITR
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 N FORM	SINGLE SUL AMM	SINGLE AMM NITR	DIVIDED SUL AMM	DIVIDED 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

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