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82/R/WW/1 and 82/W/WW/1 - Winter Wheat

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82/R/WW/1 and 82/W/WW/1

WINTER WHEAT

VARIETIES

Object: To study a selection of the newer varieties of w. wheat and the effects of nitrogen, growth regulator and fungicide on them on land in rotation (pathogen free) and after wheat and barley (pathogen infected) - Rothamsted White Horse I (pathogen free RH) and West Barnfield II (pathogen infected RD), Woburn Horsepool (pathogen free WH).

Sponsors: R. Moffitt, R.J. Gutteridge, N. Magan.

Design: Single replicate of 4 whole plots split into 10 (8 for WH).

Whole plot dimensions: (RH, RD) 3.0 x 12 (WH) 6.0 x 12.

Treatments: All combinations of:-

Whole plots

1. GROWREG Growth regulator:
 NONE None
 CHLORMEQ Chlormequat at 1.7 l in 250 l (RH, RD), 2.0 l in 280 l (WH)
2. FUNGCIDE Fungicides:
 NONE
 APPLIED

Sub plots

3. VARIETY Varieties:
 AQUILA Aquila
 AVALON Avalon
 FENMAN Fenman
 FLANDERS Flanders
 GUARDIAN Guardian
 LONGBOW Longbow
 NORMAN Norman
 RAPIER Rapier
 M HUNT O Maris Huntsman once-grown at Rothamsted, given no foliar fungicide in 1981
 M HUNT F Maris Huntsman once-grown at Rothamsted, given foliar fungicide in 1981

NOTES: (1) Maris Huntsman was sown on the Rothamsted sites only.
(2) The fungicides were prochloraz at 0.4 kg in 250 l (RH, RD), 280 l (WH). Carbendazim with maneb and tridemorph (as 'Cosmic' at 4 kg) in 250 l on all sites. Captafol at 1.2 kg in 250 l on all sites.

Basal applications:

White Horse I (RH): Manures: N at 125 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 250 l, glyphosate at 1.4 kg in 250 l.

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West Barnfield II (RD): Manures: N at 190 kg as 'Nitro-Chalk'.
Weedkillers: Paraquat at 0.56 kg ion in 220 l, methabenzthiazuron at 1.6 kg in 250 l.

Horsepool (WH): Manures: N at 125 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 280 l. Insecticide: Pirimicarb at 0.14 kg in 280 l.

Seed: White Horse I (RH), West Barnfield II (RD): Varieties sown at 210 kg.
Horsepool (WH): Varieties sown at 200 kg.

Cultivations, etc.:-

White Horse I (RH): Spring-tine cultivated: 16 Oct, 1981. Heavy spring-tine cultivated: 22 Oct, 24 Oct. Rotary harrowed, seed sown: 27 Oct. 'Brittox' applied: 16 Apr, 1982. N applied: 23 Apr. Prochloraz, chlormequat applied: 5 May. 'Cosmic' and captafol applied: 14 June. Glyphosate applied: 10 Aug. Combine harvested: 22 Aug.

West Barnfield II (RD): Discd: 23 Sept, 1981. Paraquat applied: 23 Oct. Rotary harrowed, seed sown: 24 Oct. Methabenzthiazuron applied: 26 Oct. N applied: 23 Apr, 1982. Prochloraz, chlormequat applied: 5 May. 'Cosmic' and captafol applied: 14 June. Combine harvested: 22 Aug.

Horsepool (WH): Deep-tine cultivated three times: Once 29 Oct, 1981, twice 30 Oct. Rotary cultivated, seed sown: 3 Nov. 'Brittox' applied: 16 Apr, 1982. N applied: 27 Apr. Prochloraz, chlormequat applied: 8 May. 'Cosmic' captafol and pirimicarb applied: 15 June. Combine harvested: 19 Aug.

NOTE: Two plots on Horsepool (WH) were sprayed in error, those with treatment combinations:

GROWREG	FUNGCIDE	VARIETY
NONE	NONE	FLANDERS
NONE	NONE	FENMAN

Estimated values were used in the analysis

82/R/WW/1 WHITE HORSE I (R)
HEALTHY SITE
GRAIN TONNES/HECTARE

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

FUNGCIDE VARIETY	NONE	APPLIED	MEAN
AQUILA	7.96	8.82	8.39
AVALON	7.02	7.49	7.25
FENMAN	6.78	7.54	7.16
FLANDERS	7.06	7.90	7.48
GUARDIAN	7.86	9.36	8.61
Longbow	7.46	8.65	8.06
NORMAN	6.53	7.80	7.16
RAPIER	8.32	9.26	8.79
M HUNT O	7.76	8.06	7.91
M HUNT F	7.62	8.10	7.86

MEAN 7.44 8.30 7.87

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	8.50	8.28	8.39
AVALON	7.19	7.32	7.25
FENMAN	7.07	7.26	7.16
FLANDERS	7.34	7.62	7.48
GUARDIAN	8.47	8.75	8.61
Longbow	8.17	7.94	8.06
NORMAN	7.13	7.20	7.16
RAPIER	8.70	8.87	8.79
M HUNT O	7.69	8.13	7.91
M HUNT F	7.44	8.27	7.86

MEAN 7.77 7.96 7.87

GROWREG FUNGCIDE	NONE	CHLORMEQ	MEAN
NONE	7.34	7.53	7.44
APPLIED	8.20	8.40	8.30

MEAN 7.77 7.96 7.87

FUNGCIDE GROWREG VARIETY	NONE	CHLORMEQ	APPLIED	
	NONE	CHLORMEQ	NONE	CHLORMEQ
AQUILA	7.81	8.11	9.19	8.46
AVALON	7.00	7.03	7.37	7.60
FENMAN	6.87	6.68	7.26	7.83
FLANDERS	7.14	6.98	7.54	8.25
GUARDIAN	7.63	8.09	9.31	9.41
Longbow	7.56	7.36	8.78	8.52
NORMAN	6.35	6.71	7.91	7.69
RAPIER	8.13	8.50	9.27	9.24
M HUNT O	7.58	7.95	7.81	8.31
M HUNT F	7.33	7.91	7.56	8.64

GRAIN MEAN DM% 84.5

SUB PLOT AREA HARVESTED 0.00245

82/R/WW/1 W.BARNFIELD II (R)
 DISEASED SITE
 GRAIN TONNES/HECTARE

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

FUNGCIDE VARIETY	NONE	APPLIED	MEAN
AQUILA	7.28	8.44	7.86
AVALON	6.90	8.00	7.45
FENMAN	7.03	8.23	7.63
FLANDERS	7.42	8.71	8.07
GUARDIAN	6.65	9.30	7.98
Longbow	7.31	9.72	8.51
NORMAN	6.58	8.62	7.60
RAPIER	6.81	9.36	8.09
M HUNT O	7.69	9.02	8.36
M HUNT F	7.63	8.69	8.16

MEAN 7.13 8.81 7.97

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	8.19	7.53	7.86
AVALON	7.32	7.58	7.45
FENMAN	7.86	7.40	7.63
FLANDERS	8.17	7.97	8.07
GUARDIAN	7.74	8.22	7.98
Longbow	8.74	8.29	8.51
NORMAN	7.42	7.78	7.60
RAPIER	8.38	7.79	8.09
M HUNT O	7.90	8.82	8.36
M HUNT F	7.63	8.69	8.16

MEAN 7.94 8.01 7.97

GROWREG FUNGCIDE	NONE	CHLORMEQ	MEAN
NONE	6.95	7.32	7.13
APPLIED	8.92	8.70	8.81

MEAN 7.94 8.01 7.97

FUNGCIDE GROWREG VARIETY	NONE		APPLIED	
	NONE	CHLORMEQ	NONE	CHLORMEQ
AQUILA	7.14	7.43	9.25	7.63
AVALON	6.72	7.09	7.93	8.07
FENMAN	7.16	6.90	8.56	7.89
FLANDERS	7.18	7.67	9.15	8.28
GUARDIAN	6.45	6.86	9.03	9.58
Longbow	7.55	7.07	9.92	9.51
NORMAN	6.35	6.81	8.50	8.74
RAPIER	6.94	6.68	9.82	8.91
M HUNT O	7.09	8.30	8.70	9.33
M HUNT F	6.90	8.36	8.36	9.03

GRAIN MEAN DM% 83.9

SUB PLOT AREA HARVESTED 0.00244

82/W/WW/1 HORSEPOOL (W)

GRAIN TONNES/HECTARE

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

FUNGCIDE VARIETY	NONE	APPLIED	MEAN
AQUILA	7.81	9.41	8.61
AVALON	8.87	8.26	8.56
FENMAN	9.33	8.94	9.13
FLANDERS	8.44	10.90	9.67
GUARDIAN	7.05	8.94	8.00
Longbow	7.97	8.91	8.44
NORMAN	7.63	8.85	8.24
RAPIER	8.67	9.23	8.95
MEAN	8.22	9.18	8.70

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	9.35	7.87	8.61
AVALON	7.86	9.26	8.56
FENMAN	9.48	8.79	9.13
FLANDERS	9.10	10.24	9.67
GUARDIAN	7.47	8.52	8.00
Longbow	8.58	8.30	8.44
NORMAN	9.17	7.31	8.24
RAPIER	9.48	8.42	8.95
MEAN	8.81	8.59	8.70

GROWREG FUNGCIDE	NONE	CHLORMEQ	MEAN
NONE	8.94	7.51	8.22
APPLIED	8.69	9.67	9.18
MEAN	8.81	8.59	8.70

FUNGCIDE GROWREG VARIETY	NONE		APPLIED	
	NONE	CHLORMEQ	NONE	CHLORMEQ
AQUILA	9.41	6.21	9.28	9.53
AVALON	9.14	8.60	6.59	9.92
FENMAN	*	8.39	8.68	9.19
FLANDERS	*	8.40	9.73	12.07
GUARDIAN	7.35	6.75	7.59	10.29
Longbow	7.85	8.10	9.32	8.50
NORMAN	8.97	6.29	9.37	8.33
RAPIER	10.04	7.30	8.92	9.54

GRAIN MEAN DM% 83.7

SUB PLOT AREA HARVESTED 0.00330