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83/R/WW/1 and 83/W/WW/1 Varieties - W. Wheat

Rothamsted Research

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83/R/WW/1 and 83/W/WW/1

WINTER WHEAT

VARIETIES

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

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

Design: 2 randomised blocks of 2 whole plots split into 10.

Whole plot dimensions: (RH, RD) 3.0 x 10.0 (WH) 4.0 x 12.0.

Treatments: All combinations of:-

Whole plots

1. GROWREG Growth regulator:

NONE	None
CHLORMEQ	Chlormequat at 1.1 l in 250 l (RH, RD), 1.7 l in 280 l (WH)

Sub plots

2. VARIETY Varieties:

AQUILA
AVALON
AVOCET
FENMAN
FLANDERS
GALAHAD
LONGBOW
NORMAN
RAPIER
STETSON

Basal applications:

Long Hoos I/II (RH): Manures: (0:18:36) at 280 kg. N at 170 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 250 l. Fungicide: Carbendazim at 0.15 kg, tridemorph at 0.38 kg and maneb at 1.6 kg in 500 l.

New Zealand (RD): Manures: (0:18:36) at 250 kg; N at 170 kg as 'Nitro-Chalk'. Weedkiller: Paraquat at 0.6 kg ion in 250 l. Isoproturon at 2.0 l, and mecoprop at 3.4 l with the prochloraz in 250 l. Glyphosate at 1.4 kg in 250 l. Fungicides: Propiconazole at 0.12 kg in 250 l. Prochloraz at 0.40 l.

White Horse (WH): Manures: N at 160 kg as 'Nitro-Chalk'. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) with the prochloraz in 250 l. Fungicide: Propiconazole at 0.12 kg in 250 l. Prochloraz at 0.40 l.

Seed: Long Hoos I/II (RH), New Zealand (RD): Varieties sown at 180 kg.

White Horse (WH): Varieties sown at 190 kg.

83/R/WW/1 and 83/W/WW/1

Cultivations, etc.:-

Long Hoos I/II (RH): PK applied: 10 Sept, 1982. Heavy spring-tine cultivated twice: 13 Sept. Rotary harrowed, seed sown: 28 Oct. N applied: 15 Apr, 1983. Weedkillers applied: 16 Apr. Chlormequat applied: 29 Apr. Fungicides applied: 13 June. Combine harvested: 10 Aug.

New Zealand (RD): Discd twice: 9 Sept, 1982, 21 Sept. PK applied: 10 Sept. Paraquat applied: 15 Oct. Spring-tine cultivated, rotary harrowed, seed sown: 28 Oct. N applied: 15 Apr, 1983. Weedkillers with fungicide applied: 16 Apr. Chlormequat applied: 29 Apr. Fungicide applied: 8 June. Glyphosate applied: 4 Aug. Combine harvested: 12 Aug.

White Horse (WH): Spring-tine cultivated twice: 28 Oct, 1982, 29 Oct. Heavy spring-tine cultivated, seed sown: 29 Oct. Weedkillers with fungicide applied: 15 Apr, 1983. N applied: 16 Apr. Chlormequat applied: 29 Apr. Fungicide applied: 10 June. Combine harvested: 15 Aug.

83/R/WW/1 LONG HOOS I/II (R)

HEALTHY SITE

GRAIN TONNES/HECTARE

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

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	9.27	9.43	9.35
AVALON	10.38	10.77	10.58
AVOCET	10.82	10.70	10.76
FENMAN	10.91	10.94	10.92
FLANDERS	9.00	9.37	9.18
GALAHAD	10.82	10.95	10.89
Longbow	11.37	11.01	11.19
NORMAN	11.04	11.00	11.02
RAPIER	9.72	9.95	9.83
STETSON	9.98	9.65	9.81
MEAN	10.33	10.38	10.35

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

TABLE	GROWREG	VARIETY	GROWREG VARIETY
SED	0.175	0.192	0.312
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF: GROWREG			0.272

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	18	0.272	2.6
GRAIN MEAN DM%	86.5		
SUB PLOT AREA HARVESTED	0.00204		

83/R/WW/1 NEW ZEALAND (R)

DISEASED SITE

GRAIN TONNES/HECTARE

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

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	8.49	9.56	9.02
AVALON	11.13	10.67	10.90
AVOCET	9.99	10.57	10.28
FENMAN	10.31	10.84	10.57
FLANDERS	8.39	8.89	8.64
GALAHAD	9.66	10.53	10.10
LONGBOW	11.36	11.23	11.29
NORMAN	9.98	10.71	10.35
RAPIER	9.43	9.87	9.65
STETSON	9.49	8.74	9.11
MEAN	9.82	10.16	9.99

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

TABLE	GROWREG	VARIETY	GROWREG VARIETY
SED	0.349	0.410	0.651
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF: GROWREG			0.580

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	18	0.580	5.8
GRAIN MEAN DM%	87.3		
SUB PLOT AREA HARVESTED	0.00203		

83/W/WW/1 WHITE HORSE (W)

HEALTHY SITE

GRAIN TONNES/HECTARE

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

GROWREG VARIETY	NONE	CHLORMEQ	MEAN
AQUILA	8.87	8.99	8.93
AVALON	8.73	9.56	9.15
AVOCET	8.09	6.89	7.49
FENMAN	9.34	8.31	8.83
FLANDERS	8.08	10.01	9.04
GALAHAD	7.96	8.58	8.27
Longbow	9.27	9.07	9.17
NORMAN	7.12	8.54	7.83
RAPIER	8.78	7.97	8.38
STETSON	8.82	9.38	9.10
MEAN	8.51	8.73	8.62

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

TABLE	GROWREG	VARIETY	GROWREG VARIETY
SED	0.672	0.637	1.087
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
GROWREG			0.900

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	18	0.900	10.4

GRAIN MEAN DM% 88.2

SUB PLOT AREA HARVESTED 0.00330