ROTHAMSTED RESEARCH

Yields of the Field Experiments 1974

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74/R/WW/1 and 74/W/WW/1 Varieties, N and Ccc - W. Wheat

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74/R/WW/1 and 74/W/WW/1

WINTER WHEAT

VARIETIES, N AND CCC

Object: To study the yields and flour quality of a selection of the newer varieties of wheat grown on land in rotation or after several cereals. Nitrogen rates and times, chlormequat (CCC) and a foliar fungicide are also tested - Rothamsted (RH) Little Hoos (pathogen free) and Rothamsted (RD) Gt. Harpenden I (pathogen infected) and Woburn (WH) Horsepool (pathogen free).

Sponsor: J.R. Moffatt.

Design: 4 randomised blocks of 8 plots, split into 4, with confounding.

Whole plot dimensions: 4.27 x 27.1. Sub plot area harvested: 0.00173.

Treatments: All combinations of:-

Whole plots: 1. Varieties:

	VARIETY
Atou	AT
Bouquet	BO
Cappelle	CA
Maris Freeman	FR
Maris Fundin	FU
Maris Huntsman	HU
Maris Nimrod	NI
Maris Templar	TE

Sub plots: 2. Nitrogen fertiliser (kg N):

Little Hoos (RH)	Gt.Harpenden I (RD) and Horsepool (WH)	N (RH)	N (RD & WH)
None	63 in spring	0	63
63 in spring	126 in spring	63	126
126 in spring	189 in spring	126	189
63 in spring + 63 at flowering	126 in spring + 63 at flowering	63 + 63	126 + 63

3. Chlormequat (kg):

	CCC
None	0.0
1.7	1.7

4. Fungicide at ear emergence:

	FUNGCIDE
None	None
Carbendazim at 0.15 kg + tridemorph at 0.26 kg, + maneb at 1.59 kg, applied in 360 l	Ca/Tr/Ma

NOTE: The test of fungicide was made on Little Hoos (RH) only.

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Basal applications:- Manures:
Little Hoos (RH), and Great Harpenden I (RD): 310 kg (0:20:20) combined drilled.
Horsepool (WH) 290 kg (0:20:20) combine drilled.
Weedkillers:
Little Hoos (RH): Mecoprop at 1.3 kg in 225 l.
Great Harpenden I (RD): Paraquat at 0.84 kg ion in 440 l. MCPA, mecoprop and dicamba ('Banlene Plus' at 4.5 kg in 220 l).
Horsepool (WH): Mecoprop at 2.1 kg in 280 l.

Seed: Varieties, dressed with dieldrin, sown at Little Hoos (RH) and Great Harpenden I (RD) 200 kg. Horsepool (WH) 190 kg.

Cultivations, etc.:-
Little Hoos (RH): Deep-tine cultivated twice, rotary harrowed: 30-31 Oct, 1973. Seed sown: 1 Nov. N applied: 17 Apr, 1974. Weedkiller applied: 24 Apr. Chlormequat applied: 15 May. Fungicide applied (plots 41-64): 13 June. Late N applied: 14 June. Fungicide applied (plots 33-40): 19 June. Combine harvested: 17 Sept. Previous crops: Grass 1972, potatoes 1973.
Great Harpenden I (RD): Deep-tine cultivated twice: 13 Sept, 1973, 14 Sept. Paraquat applied: 18 Oct. Seed sown: 1 Nov. N applied: 18 Apr, 1974. Weedkiller applied: 30 Apr. Chlormequat applied: 15 May. Late N applied: 14 June. Combine harvested: 17 Sept. Previous crops: Barley 1972 and 1973.
Horsepool (WH): Deep-tine cultivated twice: 27 Oct, 1973, 29 Oct. Seed sown: 31 Oct. N applied: 19 Apr, 1974. Weedkiller applied: 20 Apr. Chlormequat applied: 17 May. Late N applied: 14 June. Combine harvested: 11 Sept. Previous crops: Beans 1972, potatoes 1973.

Standard errors of differences. Grain, tonnes/hectare:

Little Hoos (R).	Whole plot:	0.276 or 4.0% (19 d.f.)
	Sub plot:	0.766 or 11.2% (51 d.f.)
Gt. Harpenden I (R).	Whole plot:	0.305 or 4.7% (14 d.f.)
	Sub plot:	0.591 or 9.1% (48 d.f.)
Horsepool (W).	Whole plot:	0.435 or 6.6% (14 d.f.)
	Sub plot:	0.455 or 6.9% (48 f.f.)

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TABLES OF MEANS

LITTLE HOOS (RH): PATHOGEN FREE

GRAIN: TONNES/HECTARE

VARIETY

	AT	BO	CA	FR	FU	HU	NI	TE	Mean
N									
0	5.59	5.58	4.58	4.99	5.69	4.99	5.60	5.91	5.37
63	7.34	6.84	5.85	5.99	6.93	7.04	7.99	6.87	6.85
126	7.21	7.86	7.12	7.06	8.87	8.45	8.33	8.55	7.93
63+63	6.34	7.21	6.80	6.73	7.86	8.14	7.49	7.42	7.25
CCC									
0.0	5.82	6.52	5.68	5.88	7.48	6.49	6.94	6.77	6.45
1.7	7.42	7.22	6.49	6.50	7.19	7.81	7.77	7.61	7.25
FUNGCIDE									
None	6.96	6.87	6.12	5.97	7.38	6.99	7.61	6.81	6.84
Ca/Tr/Ma	6.28	6.88	6.05	6.41	7.30	7.32	7.09	7.57	6.86
Mean	6.62	6.87	6.09	6.19	7.34	7.15	7.35	7.19	6.85

STANDARD ERRORS OF DIFFERENCES

N	CCC	FUNGCIDE	VARIETY	N VARIETY	CCC VARIETY	FUNGCIDE VARIETY
0.192	0.135	0.135	0.195	0.508	0.334	0.334
Except when comparing means with same level of VARIETY				0.542	0.383	0.383

Mean D.M. % 77.4

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GT. HARPENDEN I (RD): PATHOGEN INFECTED

GRAIN: TONNES/HECTARE

	VARIETY								
	AT	BO	CA	FR	FU	HU	NI	TE	Mean
N									
63	5.22	5.40	5.27	5.04	4.20	5.93	6.01	6.12	5.40
126	6.30	6.43	6.68	6.35	5.21	7.61	7.53	7.62	6.72
189	6.87	6.58	6.52	7.24	5.94	7.87	7.69	7.78	7.06
126+63	6.38	7.02	6.84	6.80	6.08	7.31	6.95	7.32	6.84
CCC									
0.0	5.97	6.11	6.29	6.28	5.34	6.78	6.94	6.88	6.32
1.7	6.42	6.61	6.37	6.44	5.38	7.58	7.15	7.54	6.69
Mean	6.19	6.36	6.33	6.36	5.36	7.18	7.04	7.21	6.50

STANDARD ERRORS OF DIFFERENCES

N	CCC	VARIETY	N VARIETY	CCC VARIETY
0.148	0.104	0.216	0.421	0.300
Except when comparing means with same level of		VARIETY	0.418	0.296

Mean D.M. % 78.9

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HORSEPOOL WOBURN (WH): PATHOGEN FREE

GRAIN: TONNES/HECTARE

VARIETY

	AT	BO	CA	FR	FU	HU	NI	TE	Mean
N									
63	6.72	6.89	6.60	6.73	7.52	6.21	7.26	7.27	6.90
126	6.83	6.42	5.81	6.28	7.66	6.57	6.78	7.99	6.79
189	5.93	5.63	5.28	5.93	6.89	6.71	6.31	7.28	6.24
126+63	6.61	6.35	5.33	6.23	7.57	6.81	6.05	7.67	6.58
CCC									
0.0	6.04	6.00	5.34	5.91	7.53	6.14	6.27	7.37	6.33
1.7	7.00	6.64	6.18	6.67	7.29	7.01	6.93	7.74	6.93
Mean	6.52	6.32	5.76	6.29	7.41	6.58	6.60	7.55	6.63

STANDARD ERRORS OF DIFFERENCES

N	CCC	VARIETY	N VARIETY	CCC VARIETY
0.114	0.080	0.308	0.415	0.347
Except when comparing means with same level of VARIETY			0.322	0.228

Mean D.M. % 80.2

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