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Yields of the Field Experiments 1976

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76/R/WW/14 Seed Rates and Divided N Dressings - W. Wheat

Rothamsted Research

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76/R/WW/14

WINTER WHEAT

SEED RATES AND DIVIDED N DRESSINGS

Object: To study the separate and combined effects of a range of treatments on the growth and yield of winter wheat - White Horse II.

Sponsors: G.V. Dyke, J. McEwen, R. Moffitt, D.B. Slope.

Design: Single replicate of 2 x 2 x 2 x 2 x 6 plus 4 extra plots.

Whole plot dimensions: 2.67 x 8.53.

Treatments: All combinations of:-

1. VARIETY Varieties:

CAPPELLE	Cappelle
HOBBIT	Hobbit

 2. SEEDRATE Seed rates:

HALF	Half standard (100 kg Cappelle; 83 kg Hobbit) (1.86 million/ha)
STANDARD	Standard (200 kg Cappelle; 166 kg Hobbit) (3.72 million/ha)

 3. CCC Chlormequat:

0.0	None
1.7	1.7 kg on 14 May

 4. FUNGICIDE Fungicide:

0	None
T+C+M	Tridemorph at 0.26 kg + carbendazim at 0.15 kg + maneb at 1.6 kg on 16 June

 5. N Nitrogen fertiliser, times and rates (kg N):

	1 March	13 April	27 May
1 1 1	25	25	25
1 2 1	25	50	25
0 2 0	0	50	0
0 3 0	0	75	0
0 4 0	0	100	0
0 2 1	0	50	25
- EXTRA plus four extra plots all sown at half standard seed rate, receiving chlormequat and the fungicidal mixture plus wettable sulphur at 2.66 kg a.i. in 340 l on 4 June:
- | | |
|---------|-----------------------|
| C 111 S | Cappelle with N 1 1 1 |
| C 121 S | Cappelle with N 1 2 1 |
| H 111 S | Hobbit with N 1 1 1 |
| H 121 S | Hobbit with N 1 2 1 |

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- NOTES: (1) All sprays were applied in 340 l.
(2) One plot VARIETY CAPPELLE, SEEDRATE STANDARD, CCC 0.0, FUNGCIDE O, N 0 2 1 received CCC 1.7 in error. An estimated value was used in the analysis.

Basal applications: Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 5.6 l in 220 l).

Cultivations, etc.: - Deep-tine cultivated and heavy spring-tine cultivated: 7 Oct, 1975. Heavy spring-tine cultivated: 15 Oct. Rotary harrowed: 17 Oct. Heavy spring-tine cultivated: 23 Oct. Seed sown: 28 Oct. Weedkiller applied: 20 Apr, 1976. Combine harvested: 3 Aug. Previous crops: Beans 1974 and 1975.

NOTE: Plant counts were made in late autumn and spring. Samples were taken for leaf area index, tiller numbers and dry weights in June. Samples were taken for grain weights, straw weights, 1000 grain weights and spikelet counts in late July.

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GRAIN TONNES/HECTARE

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

SEEDRATE	HALFSTANDARD		MEAN					
VARIETY								
CAPPELLE	3.99	4.75	4.37					
HOBBIT	3.99	4.77	4.38					
MEAN	3.99	4.76	4.37					
CCC	0.0	1.7	MEAN					
VARIETY								
CAPPELLE	4.41	4.33	4.37					
HOBBIT	4.35	4.40	4.38					
MEAN	4.38	4.37	4.37					
CCC	0.0	1.7	MEAN					
SEEDRATE								
HALF	4.05	3.93	3.99					
STANDARD	4.71	4.81	4.76					
MEAN	4.38	4.37	4.37					
FUNGCIDE	0	T+C+M	MEAN					
VARIETY								
CAPPELLE	4.24	4.50	4.37					
HOBBIT	4.30	4.45	4.38					
MEAN	4.27	4.48	4.37					
FUNGCIDE	0	T+C+M	MEAN					
SEEDRATE								
HALF	3.83	4.14	3.99					
STANDARD	4.71	4.81	4.76					
MEAN	4.27	4.48	4.37					
FUNGCIDE	0	T+C+M	MEAN					
CCC								
0.0	4.30	4.47	4.38					
1.7	4.25	4.48	4.37					
MEAN	4.27	4.48	4.37					
N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1	MEAN	
VARIETY								
CAPPELLE	4.23	4.27	4.59	4.37	4.30	4.49	4.37	
HOBBIT	4.67	4.75	4.22	4.28	4.39	3.94	4.38	
MEAN	4.45	4.51	4.41	4.32	4.34	4.22	4.37	

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GRAIN TONNES/HECTARE

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

N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1	MEAN
SEEDRATE							
HALF	4.21	3.96	3.84	3.90	4.16	3.86	3.99
STANDARD	4.69	5.06	4.97	4.74	4.53	4.57	4.76
MEAN	4.45	4.51	4.41	4.32	4.34	4.22	4.37
N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1	MEAN
CCC							
0.0	4.50	4.41	4.48	4.42	4.22	4.26	4.38
0.7	4.41	4.60	4.34	4.23	4.47	4.17	4.37
MEAN	4.45	4.51	4.41	4.32	4.34	4.22	4.37
N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1	MEAN
FUNGCIDE							
0	4.31	4.39	4.62	4.20	4.23	3.90	4.27
T+C+M	4.59	4.62	4.20	4.45	4.46	4.53	4.48
MEAN	4.45	4.51	4.41	4.32	4.34	4.22	4.37
SEEDRATE	HALF		STANDARD				
CCC	0.0	1.7	0.0	1.7			
VARIETY							
CAPPELLE	3.99	3.99	4.84	4.67			
HOBBIT	4.10	3.87	4.59	4.94			
SEEDRATE	HALF		STANDARD				
FUNGCIDE	0	T+C+M	0	T+C+M			
VARIETY							
CAPPELLE	3.75	4.23	4.73	4.78			
HOBBIT	3.92	4.05	4.69	4.84			
CCC	0.0		1.7				
FUNGCIDE	0	T+C+M	0	T+C+M			
VARIETY							
CAPPELLE	4.40	4.43	4.08	4.58			
HOBBIT	4.19	4.51	4.42	4.39			
CCC	0.0		1.7				
FUNGCIDE	0	T+C+M	0	T+C+M			
SEEDRATE							
HALF	3.93	4.16	3.74	4.12			
STANDARD	4.66	4.77	4.77	4.85			

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GRAIN TONNES/HECTARE

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

		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
VARIETY	SEEDRATE							
CAPPELLE	HALF		3.93	3.67	4.22	3.80	4.09	4.24
	STANDARD		4.53	4.86	4.97	4.93	4.50	4.74
HOBBIT	HALF		4.49	4.24	3.47	4.01	4.22	3.49
	STANDARD		4.86	5.25	4.97	4.55	4.56	4.40
		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
VARIETY	CCC							
CAPPELLE	0.0		4.44	4.24	4.61	4.48	4.09	4.63
	1.7		4.02	4.29	4.58	4.26	4.50	4.35
HOBBIT	0.0		4.55	4.58	4.35	4.36	4.35	3.89
	1.7		4.80	4.91	4.09	4.20	4.43	4.00
		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
SEEDRATE	CCC							
HALF	0.0		4.23	3.90	3.92	4.21	3.96	4.07
	1.7		4.19	4.01	3.77	3.59	4.35	3.66
STANDARD	0.0		4.76	4.93	5.04	4.62	4.48	4.45
	1.7		4.62	5.19	4.90	4.86	4.58	4.69
		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
VARIETY	FUNGCIDE							
CAPPELLE	0		4.29	3.98	4.79	4.18	4.19	4.03
	T+C+M		4.16	4.55	4.39	4.55	4.40	4.96
HOBBIT	0		4.33	4.80	4.44	4.22	4.26	3.78
	T+C+M		5.02	4.70	4.00	4.34	4.52	4.11
		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
SEEDRATE	FUNGCIDE							
HALF	0		4.14	3.82	4.09	3.91	3.81	3.24
	T+C+M		4.28	4.09	3.60	3.89	4.51	4.49
STANDARD	0		4.48	4.96	5.15	4.48	4.65	4.56
	T+C+M		4.91	5.16	4.79	5.00	4.41	4.58
		N	1 1 1	1 2 1	0 2 0	0 3 0	0 4 0	0 2 1
CCC	FUNGCIDE							
0.0	0		4.41	4.47	4.53	4.49	4.09	3.78
	T+C+M		4.58	4.35	4.43	4.34	4.36	4.75
1.7	0		4.21	4.30	4.71	3.90	4.36	4.03
	T+C+M		4.60	4.90	3.96	4.55	4.57	4.32
EXTRA	C 111 S	C 121 S	H 111 S	H 121 S	MEAN			
	4.50	4.09	3.66	4.32	4.15			

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GRAIN TONNES/HECTARE

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

TABLE	VARIETY	SEEDRATE	CCC	FUNGCIDE
SED	0.134	0.134	0.134	0.134
TABLE	N	VARIETY SEEDRATE	VARIETY CCC	SEEDRATE CCC
SED	0.233	0.190	0.190	0.190
TABLE	VARIETY FUNGCIDE	SEEDRATE FUNGCIDE	CCC FUNGCIDE	VARIETY N
SED	0.190	0.190	0.190	0.329
TABLE	SEEDRATE N	CCC N	FUNGCIDE N	VARIETY SEEDRATE CCC
SED	0.329	0.329	0.329	0.269
TABLE	VARIETY SEEDRATE FUNGCIDE	VARIETY CCC FUNGCIDE	SEEDRATE CCC FUNGCIDE	VARIETY SEEDRATE N
SED	0.269	0.269	0.269	0.466
TABLE	VARIETY CCC N	SEEDRATE CCC N	VARIETY FUNGCIDE N	SEEDRATE FUNGCIDE N
SED	0.466	0.466	0.466	0.466
TABLE	CCC FUNGCIDE N			
SED	0.466			

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

STRATUM	DF	SE	CV%
WP	25	0.658	15.1

GRAIN MEAN DM% 37.3

PLOT AREA HARVESTED 0.00098