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Yields of the Field Experiments 1976

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A small, rectangular thumbnail image showing the front cover of the document. The cover features a grid of data and text, with the title "YIELDS OF THE FIELD EXPERIMENTS 1976" at the top. Below the title, there is a table with columns for "EXPERIMENTAL AREA", "CULTIVARS", and "TREATMENT". The text is in a small, dense font.

76/R/WW/1 and 76/W/WW/1 Varieties, N, Ccc and Fungicides - W. Wheat

Rothamsted Research

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76/R/WW/1 and 76/W/WW/1

WINTER WHEAT

VARIETIES, N, CCC AND FUNGICIDES

Object: To study the yields and flour quality of a selection of the newer varieties of winter wheat and the effects of nitrogen, growth regulator, fungicides and aphicide on land in rotation (pathogen free) and after cereal (pathogen infected) - Rothamsted Long Hoos I/II (pathogen free RH) and Long Hoos III (pathogen infected RD), Woburn Far-Field I (pathogen free WH).

Sponsors: R. Moffitt, J.F. Jenkyn, D.B. Slope.

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

Whole plot dimensions: Long Hoos I/II (RH) & Long Hoos III (RD): 4.27 x 27.1
Far Field (WH): 4.27 x 25.9

Treatments: Combinations of:-

Whole plots

1. VARIETY Varieties:

AT	Atou
BO	Bouquet
CA	Cappelle
FL	Flinor (W only)
HO	Hobbit
FR	Maris Freeman
FU	Maris Fundin (R only)
HU	Maris Huntsman
ME	Mega

Sub plots

2. N Nitrogen fertiliser (kg N):

(RH)	(RD)&(WH)	Long Hoos I/II (RH)	Long Hoos III (RD) & Far Field I (WH)
0	63	None	63 in spring
63	126	63 in spring	126 in spring
126	189	126 in spring	189 in spring
63+63	126+63	63 in spring + 63 at flowering	126 in spring + 63 at flowering

3. GRWTHREG Growth regulator, applied to (RH) & (RD) only:

NONE	None
CHLORMEQ	Chlormequat (CCC) at 2.02 kg in 430 l

4. FUNGCIDE(1) Fungicide to control eyespot, applied to (RD) only:

NONE	None
CARBENDA	Carbendazim at 0.2 kg in 430 l on 21 May

5. FUNGCIDE(2) Fungicide to control foliar diseases:

NONE	None
C+C+T	Carbendazim at 0.15 kg + captafol at 1.0 kg + tridemorph at 0.26 kg on 11 June

76/R/WW/1 and 76/W/WW/1

6. APHICIDE Aphicide at flowering, applied to (RH) only:

NONE None
PIRIMICA Pirimicarb at 0.14 kg on 17 June

NOTE: Chlormequat was applied to 3 blocks on Long Hoos I/II (RH) on 7 May; and to the remaining block and Long Hoos III (RD) on 14 May.

Basal applications: Manures:

Long Hoos I/II (RH) and Long Hoos III (RD): (0:20:20) at 310 kg, combine drilled.

Far Field I (WH): (0:20:20) at 260 kg, combine drilled.

Weedkillers:

Long Hoos I/II (RH): Dicamba with mecoprop and MCPA ('Banlene Plus' at 5.6 l in 220 l).

Long Hoos III (RD): Paraquat at 0.42 kg ion in 220 l. Dicamba with mecoprop and MCPA ('Banlene Plus' at 5.6 l in 220 l).

Far Field I (WH): Ioxynil at 0.63 kg plus mecoprop at 1.9 kg in 280 l.

Seed: Long Hoos I/II (RH) and Long Hoos III (RD): Varieties sown at 200 kg.

Far Field I (WH): Varieties sown at 210 kg.

NOTE: The variety Bouquet was resown at 190 kg on Far Field I, because the first sowing was damaged by birds.

Cultivations, etc.:-

Long Hoos I/II (RH): Heavy spring-tine cultivated twice: 17 Oct, 1975.

Seed sown: 24 Oct. Spring N applied: 6 Apr, 1976. Weedkiller applied: 13 Apr. Late N applied: 3 June. Combine harvested: 2 Aug. Previous crops: Beans 1974, potatoes 1975.

Long Hoos III (RD): Paraquat applied: 7 Oct, 1975. Ploughed: 11 Oct.

Heavy spring-tine cultivated: 16 Oct. Rotary harrowed: 21 Oct.

Seed sown: 24 Oct. Spring N applied: 5 Apr, 1976. 'Banlene Plus' applied: 13 Apr. Late N applied: 3 June. Combine harvested: 3 Aug. Previous crops: Winter oats 1974, winter wheat 1975.

Far Field I: Deep-tine cultivated twice: 14 Oct, 20 Oct, 1975. Spring-tine cultivated, seed sown: 22 Oct. Plots sown to Bouquet spring-tine cultivated and resown: 8 Dec. Spring N applied: 1-5 Apr, 1976. Weedkiller applied: 21 Apr. Late N applied: 9 June. Combine harvested: 2 Aug. Previous crops: Beans 1974, potatoes 1975.

NOTES: (1) Samples were taken in spring and summer, on Long Hoos III (RD) only, for estimates of eyespot (*Cercosporalla herpotrichoides*).

(2) On Long Hoos III (RD) two plots with the following treatment combinations

VARIETY	B0	B0
N	126+63	126
GRWTH REG	NONE	CHLORMEQ
FUNGCID(1)	CARBENDA	NONE
FUNGCID(2)	NONE	NONE

were treated as missing because of a combine blockage at harvest. Estimated values were used in the analysis.

76/R/WW/1 LONG HOOS I/II (RH) PATHOGEN FREE

GRAIN TONNES/HECTARE

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

VARIETY N	AT	BO	CA	HD	FR	FU	HU	ME	MEAN
0	5.79	5.16	5.34	6.26	5.31	6.58	5.90	5.34	5.71
63	6.23	4.89	4.90	6.61	5.67	6.65	5.75	5.58	5.79
126	5.38	5.21	5.15	6.39	5.99	6.16	6.60	5.93	5.85
63+63	6.01	5.26	5.07	6.42	5.17	6.39	6.06	6.18	5.82
GRWTHREG									
NONE	5.78	5.40	4.98	6.37	5.61	6.60	6.15	5.69	5.82
CHLORMEQ	5.92	4.86	5.25	6.47	5.46	6.30	6.01	5.82	5.76
FUNGCIDE(2)									
NONE	5.89	5.15	5.22	6.76	5.82	6.51	6.11	6.00	5.93
C+C+T	5.81	5.11	5.00	6.08	5.26	6.38	6.05	5.52	5.65
APHICIDE									
NONE	5.68	5.03	5.05	6.21	5.65	6.35	5.91	5.82	5.71
PIRIMICA	6.02	5.23	5.18	6.64	5.42	6.55	6.25	5.69	5.87
MEAN	5.85	5.13	5.11	6.42	5.54	6.45	6.08	5.76	5.79

TABLE N GRWTHREG FUNGCIDE(2) APHICIDE

SED 0.168 0.119 0.119 0.119

TABLE VARIETY N GRWTHREG FUNGCIDE(2)
VARIETY VARIETY VARIETY

SED 0.154 0.439 0.283 0.283
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:
VARIETY 0.475 0.336 0.336

TABLE APHICIDE
VARIETY

SED 0.283
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:
VARIETY 0.336

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

STRATUM	DF	SE	CV%
BLOCK.WP	17	0.218	3.8
BLOCK.WP.SP	40	0.672	11.6

GRAIN MEAN DM% 88.5

SUB PLOT AREA HARVESTED 0.00173

76/R/WW/1 LONG HOOS III (RD) PATHOGEN INFECTED

GRAIN TONNES/HECTARE

VARIETY N	AT	BO	CA	HO	FR	FU	HU	ME	MEAN
63	3.40	2.60	3.35	4.41	3.22	3.70	3.76	3.28	3.46
126	3.85	3.34	4.01	4.43	3.76	4.01	3.80	4.04	3.90
189	4.39	3.36	3.94	4.96	4.26	4.73	5.04	4.41	4.39
126+63	4.11	3.75	3.75	4.10	4.07	3.54	4.17	3.96	3.93
GRWTHREG									
NONE	3.91	3.18	3.92	4.34	3.62	4.13	4.22	3.85	3.90
CHLORMEQ	3.96	3.35	3.60	4.60	4.04	3.86	4.16	3.99	3.94
FUNGCIDE(1)									
NONE	3.98	3.11	3.75	4.45	4.09	3.92	4.12	3.82	3.91
CARBENDA	3.89	3.41	3.77	4.50	3.56	4.07	4.27	4.02	3.94
FUNGCIDE(2)									
NONE	3.93	3.29	3.64	4.59	3.86	4.07	4.15	3.84	3.92
C+C+T	3.94	3.24	3.88	4.36	3.79	3.92	4.23	4.00	3.92
MEAN	3.94	3.26	3.76	4.47	3.83	3.99	4.19	3.92	3.92

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

TABLE N GRWTHREG FUNGCIDE(1) FUNGCIDE(2)

SED	0.124	0.088	0.088	0.088
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TABLE VARIETY N GRWTHREG FUNGCIDE(1)
VARIETY VARIETY VARIETY VARIETY

SED	0.233	0.382	0.291	0.291
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY	0.350	0.248	0.248	0.248

TABLE FUNGCIDE(2)
VARIETY

SED	0.291
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
VARIETY	0.248

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

STRATUM	DF	SE	CV%
BLOCK.WP	17	0.329	8.4
BLOCK.WP.SP	38	0.496	12.6

GRAIN MEAN DM% 87.7

SUB PLOT AREA HARVESTED 0.00171

76/W/WW/1 FAR FIELD I (WH) PATHOGEN FREE

GRAIN TONNES/HECTARE

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

VARIETY N	AT	BO	CA	FL	HD	FR	HU	ME	MEAN
63	3.07	2.08	2.82	3.69	3.58	3.13	4.00	2.69	3.13
126	2.78	1.96	2.73	3.28	3.26	3.03	3.66	2.75	2.93
189	2.84	2.02	2.67	3.02	3.23	3.12	3.54	2.85	2.91
126+63	3.03	2.19	2.72	3.35	3.19	2.89	3.88	3.02	3.03
FUNGCIDE(2)									
NONE	2.99	2.10	2.70	3.47	3.38	2.98	3.78	2.83	3.03
C+C+T	2.86	2.02	2.77	3.19	3.25	3.10	3.75	2.83	2.97
MEAN	2.93	2.06	2.74	3.33	3.31	3.04	3.77	2.83	3.00

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

TABLE N FUNGCIDE(2) VARIETY

SED 0.071 0.050 0.378

TABLE N FUNGCIDE(2)
VARIETY VARIETY

SED 0.416 0.391
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:
VARIETY 0.202 0.143

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

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.534	17.8
BLOCK.WP.SP	48	0.285	9.5

GRAIN MEAN DM% 88.8

SUB PLOT AREA HARVESTED 0.00165