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# Yields of the Field Experiments 1981

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## 81/R/WW/1 and 81/W/WW/1 Varieties - W. Wheat

### Rothamsted Research

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81/R/WW/1 and 81/W/WW/1

WINTER WHEAT

VARIETIES

Object: To study a selection of the newer varieties of w. wheat and the effects of nitrogen and enhanced farm practice on them on land in rotation (pathogen free) and after wheat and barley (pathogen infected) - Rothamsted Sawyers II (pathogen free RH) and Claycroft (pathogen infected RD), Woburn Lansome II/III (pathogen free WH).

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

Design: 4 randomised blocks (3 for WH) of 9 x 4 criss cross.

Whole plot dimensions 4.27 x 27.1.

Treatments: All combinations of:-

Column plots

1. VARIETY Varieties:

AVALON	Avalon
BARON	Baron
BOUNTY	Bounty
BO+BR+HO	Equal parts of Bounty, Brigand & Hobbit
BRIGAND	Brigand
FENMAN	Fenman
FLANDERS	Flanders
NORMAN	Norman
RAPIER	Rapier

Row plots

2. N Nitrogen fertiliser (kg N) and enhanced farm practice:

63	63
126	126
189	189
189+E	189, given growth regulator & fungicides

NOTE: The growth regulator was chlormequat at 1.7 l in 250 l on 5 May, 1981 (RH, RD), at 1.4 l in 280 l on 20 Apr (WH). The fungicides were prochloraz at 0.4 l in 250 l (RH, RD) in 280 l (WH) on 5 May and prochloraz at 0.4 l with maneb at 1.2 kg and zineb at 0.13 kg in 250 l (RH, RD) on 22 June, in 280 l (WH) on 18 June.

Basal applications: Manures: Sawyers II (RH), Claycroft (RD) and Lansome II/III (WH): (0:20:20) at 310 kg, combine drilled (R), broadcast (W). Weedkillers: Claycroft (RD) two blocks in autumn, remainder in spring, Lansome II/III (WH): Isoproturon at 2.5 l in 250 l (R) and at 1.8 l in 280 l (W). All sites: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.7 l (R), 2.4 l (W)) in 250 l (R) and 280 l (W).

Seed: Sawyers II (RH), Claycroft (RD): Varieties sown at 200 kg  
Lansome II/III (WH): Varieties sown at 190 kg

81/R/WW/1 and 81/W/WW/1

Cultivations, etc.:-

Sawyers II (RH): Heavy spring-tine cultivated: 13 Oct, 1980.  
Spring-tine cultivated: 14 Oct. Seed sown: 15 Oct. N applied:  
16 Apr, 1981. 'Brittox' applied: 17 Apr. Combine harvested: 27 Aug.  
Previous crops: W. wheat 1979, potatoes 1980.

Claycroft (RD): Heavy spring-tine cultivated: 12 Sept, 1980, 16 Sept.  
Spring-tine cultivated, seed sown: 14 Oct. Isoproturon applied:  
15 Oct, 9 Apr, 1981. N applied: 16 Apr. 'Brittox' applied: 23 Apr.  
Combine harvested: 27 Aug. Previous crops: S. barley 1979, w. wheat  
1980.

Lansome II/III: Heavy spring-tine cultivated, PK applied, spring-tine  
cultivated: 29 Oct, 1980. Seed sown: 30 Oct. N applied: 9 Apr,  
1981. Isoproturon and 'Brittox' applied: 22 Apr. Combine  
harvested: 25 Aug. Previous crops: Grass ley 1979, potatoes 1980.

NOTE: Samples were taken in July on Claycroft (RD) for estimates of eyespot  
(*Pseudocercospora herpotrichoides*) and take-all (*Gaeumannomyces  
graminis*).

81/R/WW/1 SAWYERS II (R)

HEALTHY SITE

GRAIN TONNES/HECTARE

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

	N	63	126	189	189+E	MEAN
VARIETY						
AVALON		8.69	8.85	8.85	9.91	9.07
BARON		8.39	8.57	7.96	9.55	8.62
BOUNTY		8.09	8.36	8.30	9.11	8.47
BO+BR+HO		8.76	8.22	8.11	9.36	8.61
BRIGAND		9.01	8.47	7.70	8.51	8.42
FENMAN		9.13	8.66	8.56	10.17	9.13
FLANDERS		8.19	8.01	7.79	8.81	8.20
NORMAN		9.34	9.03	8.56	10.58	9.38
RAPIER		8.99	8.84	8.07	9.03	8.73
MEAN		8.73	8.56	8.21	9.45	8.74

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

TABLE	VARIETY	N	VARIETY N
-----			
SED	0.148	0.040	0.244
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.227
N			0.253

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

STRATUM	DF	SE	CV%
BLOCK.WP1	24	0.209	2.4
BLOCK.WP2	9	0.057	0.7
BLOCK.WP1.WP2	72	0.336	3.8

GRAIN MEAN DM% 88.1

PLOT AREA HARVESTED 0.00173

81/R/WW/1 CLAYCROFT (R)

DISEASED SITE

GRAIN TONNES/HECTARE

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

	N	63	126	189	189+E	MEAN
VARIETY						
AVALON		4.74	6.17	7.04	6.95	6.23
BARON		5.56	6.44	6.50	7.16	6.41
BOUNTY		5.56	6.26	7.09	7.02	6.48
BO+BR+HO		5.39	6.46	6.90	7.23	6.50
BRIGAND		5.68	6.40	6.87	6.94	6.47
FENMAN		6.14	6.46	7.06	6.89	6.64
FLANDERS		4.95	6.11	6.20	7.37	6.16
NORMAN		5.88	6.72	7.10	7.82	6.88
RAPIER		5.68	6.60	6.41	7.00	6.42
MEAN		5.51	6.40	6.80	7.15	6.47

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

TABLE	VARIETY	N	VARIETY N
-----			
SED	0.250	0.178	0.371
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.303
N			0.337

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

STRATUM	DF	SE	CV%
BLOCK.WP1	24	0.354	5.5
BLOCK.WP2	9	0.251	3.9
BLOCK.WP1.WP2	72	0.369	5.7

GRAIN MEAN DM% 85.6

PLOT AREA HARVESTED 0.00172



81/W/WW/1 LANSOME II/III (W)

GRAIN TONNES/HECTARE

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

	N	63	126	189	189+E	MEAN
VARIETY						
AVALON		5.85	6.61	6.34	8.72	6.88
BARON		6.72	6.29	6.70	8.04	6.94
BOUNTY		6.47	7.72	6.98	8.20	7.34
BO+BR+HO		6.45	6.81	6.68	7.21	6.79
BRIGAND		6.41	7.27	6.57	7.48	6.93
FENMAN		5.74	7.76	7.55	7.24	7.07
FLANDERS		5.44	6.06	5.03	5.35	5.47
NORMAN		5.91	6.71	6.65	6.67	6.49
RAPIER		5.86	6.28	6.46	7.21	6.45
MEAN		6.10	6.83	6.55	7.35	6.71

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

TABLE	VARIETY	N	VARIETY N
-----			
SED	0.506	0.367	0.755
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.620
N			0.683

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

STRATUM	DF	SE	CV%
BLOCK.WP1	16	0.620	9.2
BLOCK.WP2	6	0.450	6.7
BLOCK.WP1.WP2	48	0.649	9.7

GRAIN MEAN DM% 83.2

PLOT AREA HARVESTED 0.00173