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# Yields of the Field Experiments 1980

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## 80/R/WW/1 and 80/W/WW/1 Winter Wheat Varieties and N

### Rothamsted Research

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80/R/WW/1 and 80/W/WW/1

WINTER WHEAT

VARIETIES AND N

Object: To study a selection of the newer varieties of w. wheat and the effects of nitrogen and chlormequat on them on land in rotation (pathogen free) and after wheat and barley (pathogen infected) - Rothamsted Gt Knott III (pathogen free RH) and Claycroft (pathogen infected RD), Woburn Horsepool (pathogen free WH).

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

Design: RH: 4 randomised blocks of 10 x 4 criss cross.  
RD: 3 randomised blocks of 10 x 4 criss cross.  
WH: 3 randomised blocks of 8 x 3 criss cross.

Whole plot dimensions: RH, RD 4.27 x 27.1  
WH 4.27 x 20.1

Treatments: All combinations of:-

Column plots

- VARIETY Varieties (all seed purchased from standard commercial sources except as stated):
  - ARMADA Armada
  - AVALON Avalon
  - BOUNTY Bounty
  - BRIGAND Brigand
  - FLANDERS Flanders
  - MARDLER Mardler
  - M HNT Maris Huntsman
  - M HNT 00 Maris Huntsman, once-grown at Rothamsted, seed crop not sprayed fungicide
  - M HNT OF Maris Huntsman, once-grown at Rothamsted, seed crop sprayed carbendazim + maneb + tridemorph (as 'Cosmic' at 4.0 kg) in 340 l applied twice.
  - VIRTUE Virtue

Row plots

- N GR Nitrogen fertiliser (kg N) and growth regulator:
  - 63 63
  - 126 126
  - 189 189
  - 189+C 189 + chlormequat at 1.7 l in 250 l on 7 May (RH, RD), at 1.4 l in 280 l on 24 Apr (WH).

NOTE: At Woburn Horsepool (WH) once-grown Maris Huntsman and N GR63 were not included and the nitrogen dressing for N GR126 was equally divided between April and May.

80/R/WW/1 and 80/W/WW/1

Basal applications: Manures: Gt. Knott III (RH), Claycroft (RD) and Horsepool (WH): (0:20:20) at 310 kg, combine drilled. Weedkillers: Gt. Knott III (RH), Claycroft (RD): Paraquat at 0.56 kg ion in 220 l. Gt. Knott III (RH): Methabenzthiazuron at 1.6 kg in 220 l. Claycroft (RD): Mecoprop at 2.5 l in 250 l. Horsepool (WH): Mecoprop, bromoxynil with ioxynil (as 'Brittox' as 3.5 l in 250 l). Insecticide: Gt. Knott III (RH): Demeton-s-methyl at 0.24 kg in 280 l.

Seed: Gt. Knott III (RH), Claycroft (RD) and Horsepool (WH): Varieties sown at 190 kg.

Cultivations, etc.:-

Gt. Knott III (RH): Heavy spring-tine cultivated 24 Sept 1979, 25 Sept. Paraquat applied: 15 Oct. Spring-tine cultivated: 16 Oct. Seed sown: 17 Oct. Methabenzthiazuron applied: 20 Oct. N applied: 10 Apr, 1980. Insecticide applied: 23 June. Combine harvested: 23 Aug. Previous crops: S. barley 1978, w. oats 1979.

Claycroft (RD): Heavy spring-tine cultivated: 20 Sept, 1979, 4 Oct. Paraquat applied: 16 Oct. Rotary harrowed: 19 Oct. Seed sown: 20 Oct. N applied: 11 Apr, 1980. Mecoprop applied: 16 Apr. Combine harvested: 24 Aug. Previous crops: W. wheat 1978, s. barley 1979.

Horsepool (WH): Heavy spring-tine cultivated: 17 Oct, 1979. Spring-tine cultivated with crumbler attached, seed sown: 18 Oct. Weedkillers applied: 26 Mar, 1980. N applied: 6 Apr. Second half N to N GR126 applied: 2 May. Combine harvested: 27 Aug. Previous crops: W. oats 1978, potatoes 1979.

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

80/R/WW/1 GREAT KNOTT III (R)

HEALTHY SITE

GRAIN TONNES/HECTARE

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

	N GR	63	126	189	189+C	MEAN
VARIETY						
ARMADA		7.36	8.94	8.95	10.38	8.91
AYALON		6.41	8.58	9.11	9.47	8.39
BOUNTY		6.89	8.71	8.66	9.66	8.48
BRIGAND		7.80	9.69	9.93	10.45	9.47
FLANDERS		6.53	8.14	8.50	9.32	8.12
MARDLER		6.66	8.94	8.98	9.76	8.58
M HNT		6.39	8.34	8.71	9.38	8.20
M HNT OO		6.88	8.52	8.80	9.76	8.49
M HNT OF		6.38	8.00	8.51	9.23	8.03
VIRTUE		7.68	9.53	10.22	10.24	9.42
MEAN		6.90	8.74	9.04	9.77	8.61

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

TABLE	VARIETY	N GR	VARIETY N GR
SED	0.310	0.170	0.383
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.243
N GR			0.348

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

STRATUM	DF	SE	CV%
BLOCK.VARIETY	27	0.438	5.1
BLOCK.N GR	9	0.240	2.8
BLOCK.VARIETY.N GR	81	0.258	3.0

GRAIN MEAN DM% 84.4

PLOT AREA HARVESTED 0.00173

80/R/WW/1 CLAYCROFT (R)

DISEASED SITE

GRAIN TONNES/HECTARE

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

	N GR	63	126	189	189+C	MEAN
VARIETY						
ARMADA		7.07	8.54	8.64	8.67	8.23
AVALON		7.90	8.48	9.50	8.99	8.72
BOUNTY		6.86	8.37	8.67	8.86	8.19
BRIGAND		8.25	9.59	9.49	9.42	9.19
FLANDERS		7.03	7.63	8.57	8.85	8.02
MARDLER		7.39	8.98	8.64	8.45	8.36
M HNT		7.89	8.68	8.43	9.03	8.50
M HNT OO		7.63	8.24	8.42	8.82	8.28
M HNT OF		7.72	8.70	8.58	9.03	8.51
VIRTUE		8.27	9.17	9.22	9.29	8.99
MEAN		7.60	8.64	8.81	8.94	8.50

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

TABLE	VARIETY	N GR	VARIETY N GR
-----			
SED	0.197	0.223	0.417
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.409
N GR			0.370

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

STRATUM	DF	SE	CV%
BLOCK.VARIETY	18	0.241	2.8
BLOCK.N GR	6	0.273	3.2
BLOCK.VARIETY.N GR	54	0.443	5.2

GRAIN MEAN DM% 84.6

PLOT AREA HARVESTED 0.00172

80/W/WW/1 HORSEPOOL (W)

GRAIN TONNES/HECTARE

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

	N GR	126	189	189+C	MEAN
VARIETY					
ARMADA		8.42	8.80	8.94	8.72
AVALON		7.91	8.44	8.44	8.26
BOUNTY		7.70	7.99	8.08	7.92
BRIGAND		8.89	9.05	8.73	8.89
FLANDERS		7.59	7.75	7.93	7.75
MARDLER		8.13	8.41	7.87	8.13
M HNT		8.50	8.27	8.66	8.47
VIRTUE		8.45	8.40	8.66	8.50
MEAN		8.20	8.39	8.41	8.33

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

TABLE	VARIETY	N GR	VARIETY N GR
SED	0.297	0.189	0.401
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
VARIETY			0.309
N GR			0.366

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

STRATUM	DF	SE	CV%
BLOCK.VARIETY	14	0.363	4.4
BLOCK.N GR	4	0.231	2.8
BLOCK.VARIETY.N GR	28	0.320	3.8
GRAIN MEAN DM%	84.9		
PLOT AREA HARVESTED	0.00173		