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Yields of the Field Experiments 1976

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76/S/CS/1 Varieties, N and Ccc - Wheat

Rothamsted Research

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76/S/CS/1

VARIETIES, N AND CCC

Object: To study the effects of nitrogen fertiliser, at a range of rates and times, and chlormequat (CCC) on the yield of two varieties of winter wheat - Saxmundham, Oldershaw's and Garner's plots.

Sponsors: F.V. Widdowson, A.E. Johnston.

The 11th year, winter wheat.

For previous years see 66/C/30(t), 67/C/23(t), 68/C/39, 69-70/S/CS/1, 71/S/CS/1(t), 72/S/CS/1(t) and 73-75/S/CS/1.

Design: A single replicate of 4 x 2 x 2 x 2 in 4 blocks of 4 plots, each split lengthways into 2, plus one additional plot per block. Additionally all the plots are split breadthways into 3.

Whole plot dimensions: 5.49 x 40.2.

Treatments: All combinations of:-

Whole plots (All sown at a seed rate of 170 kg with 13 cm (5 inches) between the rows):

1. PREVCROP Number of previous continuous wheat crops:

7 WHEAT	7
8 WHEAT	8
9 WHEAT	9
10 WHEAT	10

2. CCC Chlormequat (kg):

0.0	None
1.7	1.7 in 340 l

Half plots

3. N TIME Times of applying nitrogen fertiliser:

SINGLE	Single dressing (21 Apr)
DIVIDED	Divided dressing (Half 21 Apr, half 18 May)

4. VARIETY Varieties:

CAPPELLE	Cappelle
HUNTSMAN	Maris Huntsman

Pairs of sixth plots

5. N RATE Rates of nitrogen fertiliser in addition to 62 kg N in autumn (14 Oct) (kg N):

50	50
100	100
150	150

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EXTRA Together with one extra plot per block which had 6 previous wheat crops and was sown with Cappelle at a seed rate of 180 kg with 20 cm (8 inches) between the rows and tested all combinations of:-

Half plots

1. AUT N Autumn nitrogen fertiliser (kg N):

0	0
62	62

Pairs of sixth plots

2. N RATE Rate of nitrogen fertiliser (kg N):

50	50
100	100
150	150

NOTES: (1) AUT N 0 plots received a dressing of (0:20:20) at 160 kg.
All other plots received a dressing of (20:10:10) at 310 kg.
All broadcast at drilling.
(2) Chlormequat was applied on 4 May.
(3) N was applied to N RATE plots on 21 Apr.

Basal applications: Manures: (0:20:20) at 1260 kg applied to stubble before ploughing. Weedkillers: Methabenzthiazuron at 3.1 kg in 340 l in autumn. Isoproturon at 2.2 kg with mecoprop at 0.63 kg plus ioxynil at 0.21 kg in 340 l in spring.

Cultivations, etc.: Basal PK applied: 29 Sept, 1975. Seed sown: 14 Oct.
Autumn weedkiller applied: 15 Oct. Spring weedkillers applied: 25 Mar, 1976. Combine harvested: 27 July.

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GRAIN TONNES/HECTARE

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

PREVCROP	7 WHEAT	8 WHEAT	9 WHEAT	10 WHEAT	MEAN
CCC					
0.0	4.49	4.66	4.32	4.67	4.54
1.7	5.08	4.73	4.88	4.44	4.78
N TIME					
SINGLE	4.82	4.69	4.60	4.59	4.68
DIVIDED	4.75	4.70	4.61	4.51	4.64
VARIETY					
CAPPELLE	4.64	4.61	4.53	4.43	4.56
HUNTSMAN	4.93	4.78	4.67	4.68	4.76
N RATE					
50	3.98	4.04	3.85	4.01	3.97
100	4.68	4.97	4.61	4.42	4.67
150	5.69	5.09	5.35	5.23	5.34
MEAN	4.79	4.70	4.60	4.55	4.66

GRAIN MEAN DM% 82.9

SUB PLOT AREA HARVESTED 0.00355

EXTRA

GRAIN TONNES/HECTARE

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

N RATE	50	100	150	MEAN
AUT N				
0	2.93	3.52	4.04	3.50
62	3.56	4.32	4.82	4.23
MEAN	3.24	3.92	4.43	3.87

GRAIN MEAN DM% 82.2

STRAW TONNES/HECTARE

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

N RATE	50	100	150	MEAN
AUT N				
0	2.18	2.59	3.20	2.65
62	3.03	3.68	4.32	3.68
MEAN	2.60	3.14	3.76	3.17

STRAW MEAN DM% 82.3

SUBPLOT AREA HARVESTED 0.00355