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72/S/CS/1 Row Spacing and Seed Rates After Intensive Wheat - W. Wheat

Rothamsted Research

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72/S/CS/1

ROW SPACING AND SEED RATES AFTER INTENSIVE WHEAT

Object: To study the effects of seed rate and row spacing on the yields of winter wheat. The effects of different periods of pre-cropping with winter wheat are also studied - Saxmundham Oldershaw's and Garner's plots.

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

The seventh year on this site, second year of row spacing and seed rate treatments, winter wheat.

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

Design: A single replicate of 4 x 2 x 4 in 4 blocks of 4 plots each split lengthways into 2, plus one additional plot (not split into 2) per block. Additionally, all the plots are split breadthways into 3.

Whole plot dimensions: 5.49 x 40.2. Sub plot area harvested: 0.00312.

Treatments: Cumulative on 1971 treatments.

Additional plots: Two immediately previous continuous winter wheat crops (Year 2), row spacing 189 mm (8.25 inches) and seed rate 212 kg (S), and N to sub-plots as shown below, and all combinations of:-

Whole plots:

1. Cropping history: 3, 4, 5 and 6 years of immediately previous winter wheat crops 1966 - 1971 (3, 4, 5, 6).

Half plots:

2. Row spacing: 152 mm (6 inches), 304 mm (12 inches).
3. Seed rates: 70.6, 141, 212, 283 kg.

One third plots:

4. N rates: 50, 100, 150 kg N as 'Nitro-Chalk'.

Basal applications: 1260 kg (0:20:20) applied to stubble in autumn before ploughing. 310 kg (20:10:10) broadcast at drilling.

Weedkiller: Terbutryne and related triazines ('Prebane' at 4.5 kg).

Seed: Cappelle.

72/S/CS/1

Cultivations, etc.: Basal PK applied and ploughed in: 2 Oct, 1971.
Seed drilled and basal NPK applied: 26 Oct. Weedkiller applied:
27 Oct. Test N applied: 21 Apr, 1972. Combine harvested:
29 Aug.

Addendum to 71/S/CS/1: Basal applications should include 310 kg
(20:10:10) broadcast at drilling.

NOTE: Green crop samples for estimates of total dry matter and leaf
areas were taken.

72/S/CS/1

TABLES OF MEANS

GRAIN: TONNES/HECTARE

Year

	3	4	5	6	Mean
SPACING: MM					
152	5.82	5.80	5.92	5.90	5.86
304	5.93	5.88	5.86	5.85	5.88
SEED RATE: KG					
70.6	5.95	5.71	5.85	5.82	5.83
141	5.96	5.96	5.98	5.93	5.96
212	5.82	5.98	5.96	5.98	5.93
283	5.77	5.71	5.76	5.77	5.75
N: KG/HA					
50	5.38	5.35	5.13	5.17	5.26
100	6.07	6.16	6.16	6.25	6.16
150	6.17	6.01	6.37	6.21	6.19
Mean	5.87	5.84	5.89	5.87	5.87

YEAR 2

N: KG/HA

50	100	150	Mean
4.31	4.83	5.87	5.34

Grand mean: 5.76
Mean D.M. %: 84.8