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81/R/WW/2 Seed Rates & Divided N Dressings - W. Wheat

Rothamsted Research

Rothamsted Research (1982) *81/R/WW/2 Seed Rates & Divided N Dressings - W. Wheat* ; Yields Of The Field Experiments 1981, pp 226 - 228 - DOI: <https://doi.org/10.23637/ERADOC-1-35>

81/R/WW/2

WINTER WHEAT

SEED RATES & DIVIDED N DRESSINGS

Object: To study the effects of a range of rates of early nitrogen dressings on the growth and yield of wheat sown at half or standard seed rate - Gt. Harpenden I.

Sponsors: J. McEwen, R. Moffitt.

Design: 2 randomised blocks of 30 plots.

Whole plot dimensions: 4.27 x 8.08.

Treatments: All combinations of:-

1. SD RATE Seed rates (kg):

100
200

2. EARLY N Nitrogen fertiliser applied 16 Feb, 1981 (kg N):

0
25
50
75

3. APRIL N Nitrogen fertiliser applied 3 Apr, 1981 (kg N):

75
100
125

plus extra treatments, all combinations of:-

1. SD RATEX Seed rates (kg):

100
200

2. APRIL NX Nitrogen fertiliser applied 3 Apr, 1981 (kg N):

150
175
200

Basal applications: Manures: (0:20:20) at 310 kg, combine drilled.
Weedkillers: Chlortoluron at 5.6 l in 250 l. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.7 l) in 250 l. Fungicides: Prochloraz at 0.4 l in 250 l applied twice, with the growth regulator on the first occasion and with maneb and zineb on the second. Maneb at 1.2 kg with zineb at 0.13 kg. Growth regulator: Chlormequat at 1.7 kg.

Seed: Flanders.

81/R/WW/2

Cultivations, etc.:— Disc harrowed twice: 12 Sept, 1980. Heavy spring-tine cultivated three times: 6 Oct. Spring-tine cultivated: 8 Oct. Seed sown: 9 Oct. Chlortoluron applied: 14 Oct. 'Brittox' applied: 21 Apr, 1981. Growth regulator and prochloraz applied: 5 May. Prochloraz, maneb and zineb applied: 19 June. Combine harvested: 25 Aug. Previous crops: S. barley, 1979, w. oats, 1980.

NOTES: (1) Plant counts were made in November, shoot counts in February and April and ear counts in July.
 (2) 1000 grain weights and N content of grain were measured.

GRAIN TONNES/HECTARE

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

EARLY N	0	25	50	75	MEAN
SD RATE					
100	7.94	8.02	8.18	8.38	8.13
200	7.82	8.24	8.18	8.41	8.16
MEAN	7.88	8.13	8.18	8.39	8.15
APRIL N	75	100	125	MEAN	
SD RATE					
100	7.93	8.27	8.18	8.13	
200	7.97	8.28	8.25	8.16	
MEAN	7.95	8.27	8.22	8.15	
APRIL N	75	100	125	MEAN	
EARLY N					
0	7.57	8.08	8.00	7.88	
25	7.86	8.20	8.32	8.13	
50	7.94	8.27	8.33	8.18	
75	8.42	8.54	8.22	8.39	
MEAN	7.95	8.27	8.22	8.15	
SD RATE	APRIL N	75	100	125	
100	EARLY N				
	0	7.71	8.00	8.13	
	25	7.76	8.13	8.16	
	50	7.83	8.43	8.28	
	75	8.43	8.53	8.17	
200	0	7.44	8.17	7.87	
	25	7.96	8.27	8.48	
	50	8.06	8.11	8.38	
	75	8.41	8.56	8.27	
APRIL NX	150	175	200	MEAN	
SD RATEX					
100	8.19	7.94	8.22	8.11	
200	8.08	8.09	8.23	8.13	
MEAN	8.13	8.01	8.22	8.12	
GRAND MEAN	8.14				

81/R/WW/2

GRAIN TONNES/HECTARE

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

TABLE	SD RATE	EARLY N	APRIL N	SD RATEX
SED	0.075	0.106	0.092	0.150

TABLE	APRIL NX	SD RATE EARLY N	SD RATE APRIL N	EARLY N APRIL N
SED	0.184	0.150	0.130	0.184

TABLE	SD RATE EARLY N APRIL N	SD RATEX APRIL NX
	0.260	0.260

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.260	3.2

GRAIN MEAN DM% 84.2

PLOT AREA HARVESTED 0.00246