ROTHAMSTED RESEARCH

Yields of the Field Experiments 1993

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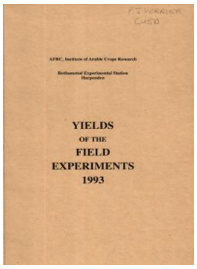

93/R/WW/3 Sowing Date and N - W. Wheat

Rothamsted Research

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93/R/WW/3

WINTER WHEAT

SOWING DATE AND N

Object: To study the effects of a range of amounts of nitrogen fertilizer applied in different ways to w. wheat sown on different dates - Fosters Corner.

Sponsors: R.J. Darby.

Design: 3 blocks of 2 x 8 plots.

Plot dimensions: 3.0 x 18.0.

Treatments:

1. **SOW DATE**	Date of sowing:	
	EARLY	Second week in September
	LATE	Third week in October
2. **SPRING N**	Rate, form and timing of nitrogen fertilizer applied in spring to achieve different green area indices (GAI):	
	N0	None
	CONV S	GAI6. Solid conventional split application, 60 plus 160 kg N
	G3 S	GAI3. Solid multiple applications of 30 kg N from mid-March
	G5-S	GAI5. Solid multiple applications of 30 kg N from mid-March
	G5 F	GAI5. Foliar multiple applications of 30 kg N from mid-March
	G5 S2F3	GAI5. Multiple applications of solid and foliar, each 30 kg N
	G5 S3F2	GAI5. Multiple applications of solid and foliar, each 30 kg N
	G5 S1F2	GAI5. Single application of solid at stem elongation, 90 kg, foliar applications from mid May, each 30 kg N

NOTES: (1) Solid fertilizer applied as 'Nitro-Chalk' (27% N), foliar nitrogen as urea (46% N) in 450 l water.
(2) **SPRING N** codes refer to the N required to produce an equivalent green area index (e.g. G5 S3F2 to give GAI5, three from solid, two from foliar N).

Experimental diary:

02-Oct-92 : B : Ploughed.
07-Oct-92 : T : **SOW DATE** EARLY: Rotary harrowed, Mercia, dressed Cerevax, drilled at 380 seeds per square metre.
31-Oct-92 : T : **SOW DATE** LATE: Rotary harrowed, Mercia, dressed Cerevax, drilled at 380 seeds per square metre.

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Experimental diary:

25-Mar-93 : **T** : **SPRING N**: CONV S, G3 S, G5 S, G5 F, G5 S2F3, G5 S3F2: N applied.
06-Apr-93 : **T** : **SPRING N**: G5 S, G5 F, G5 S2F3, G5 S3F2: N applied.
16-Apr-93 : B : Ally at 30 g and Starane 2 at 1.0 l in 300 l.
20-Apr-93 : **T** : **SPRING N**: CONV S, G5 S, G5 F, G5 S2F3, G5 S3F2, G5 S1F2: N applied.
05-May-93 : **T** : **SPRING N**: G3 S, G5 S, G5 F, G5 S2F3, G5 S3F2: N applied.
19-May-93 : **T** : **SPRING N**: G5 S, G5 F, G5 S2F3, G5 S3F2, G5 S1F2: N applied.
28-May-93 : B : Corbel at 1.0 l and Halo at 2.0 l in 300 l.
02-Jun-93 : **T** : **SPRING N** G5 S1F2: N applied.
02-Jul-93 : B : Bombardier at 2.0 l and Radar at 0.50 l in 300 l.
18-Aug-93 : B : Combine harvested.

Previous crops: S. beans 1991, linseed 1992.

NOTE: Soils were sampled to 90 cm depth for ammonium and nitrate contents on three occasions between early November and late February. Stem nitrate concentrations were measured at fortnightly intervals from early December until early July. Plants were sampled for growth and N content and soil samples taken at regular intervals between March and August. Components of yield were measured after hand harvesting in mid-August.

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93/R/WW/3

GRAIN TONNES/HECTARE

***** Tables of means *****

SOW DATE	EARLY	LATE	Mean
SPRING N			
N0	6.20	5.14	5.67
CONV S	10.17	10.32	10.24
G3 S	7.95	7.98	7.96
G5 S	9.80	10.07	9.94
G5 F	9.74	9.71	9.73
G5 S2F3	9.55	9.91	9.73
G5 S3F2	9.54	9.79	9.67
G5 S1F2	9.42	9.79	9.61
Mean	9.05	9.09	9.07

*** Standard errors of differences of means ***

SOW DATE	**SPRING N**	**SOW DATE SPRING N**
0.099	0.198	0.281

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.344	3.8

GRAIN MEAN DM% 85.6

PLOT AREA HARVESTED 0.00230

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