

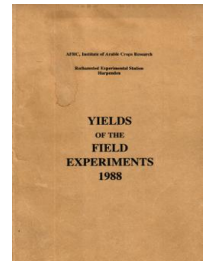
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88/R/WW/3 N and Crop Physiology - W. Wheat

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88/R/WW/3

WINTER WHEAT

N AND CROP PHYSIOLOGY

Object: To study, in crops given optimal or less than optimal N, the dynamics of late N within the plant, the effects on flag leaf photosynthesis and protein retention and the N status of individual organs - Little Knott I.

Sponsors: G.F.J. Milford, D.W. Lawlor.

Associate sponsors: D.S. Powlson, R.A. Leigh.

Design: 3 randomised blocks of 9 plots.

Whole plot dimensions: 3.0 x 16.0.

Treatments: All combinations of:-

1. **N RATE** Rate of nitrogen fertilizer (kg N) applied as 'Nitro-Chalk', divided equally on 2 Mar 1988, 30 Mar, 22 Apr and 13 May:

0
80
200

2. **LATE N** Nitrogen fertilizer applied late:

0 None
NLEAF To foliage, 40 kg N as urea in 225 l in two equal applications on 24 May, 1988 and 25 May
NSOIL To soil, 40 kg N as prilled urea on 25 May

Basal applications: Weedkillers: Fluroxypyr at 0.20 kg with clopyralid at 0.07 kg and bromoxynil at 0.34 kg in 200 l. Diclofop-methyl at 1.1 kg in 260 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l. Propiconazole at 0.12 kg and tridemorph at 0.25 kg on two occasions, in 200 l and 260 l respectively.

Seed: Avalon, sown at 180 kg.

Cultivations, etc.:- Ploughed: 22 Sept, 1987. Rotary harrowed, seed sown: 24 Oct. Prochloraz and carbendazim applied: 21 Apr, 1988. Fluroxypyr, clopyralid and bromoxynil applied: 26 Apr. Diclofop-methyl applied: 6 May. Propiconazole and tridemorph applied: 20 May, 21 June. Combine harvested: 23 Aug. Previous crops: S. barley 1986, w. oats 1987.

NOTE: Samples were taken for measurements of crop and grain growth and N content, weekly from April until maturity.

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GRAIN TONNES/HECTARE

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

LATE N N RATE	NONE	NLEAF	NSOIL	Mean
0	2.23	3.47	3.37	3.03
80	5.64	5.85	6.01	5.83
200	7.70	8.23	7.93	7.96
Mean	5.19	5.85	5.77	5.60

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

N RATE	LATE N	N RATE LATE N
0.198	0.198	0.344

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	16	0.421	7.5

GRAIN MEAN DM% 82.4

PLOT AREA HARVESTED 0.00161