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95/R/WW/10 Plant N Indicators W. Wheat

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95/R/WW/10

WINTER WHEAT

PLANT N INDICATORS

Object: To relate chlorophyll concentrations in individual leaves of w. wheat to nitrogen supply and crop yield - Little Hoos.

Sponsor: P.B. Barraclough.

Design: 4 randomised blocks of 11 plots.

Plot dimensions: 3.0 x 20.0.

Treatments:

N	Timing, rate and form of nitrogen fertilizer in spring (kg N):			
	G.S. 30	G.S. 31	G.S. 37	TOTAL
1	40	60	0	100
2	40	60	20	120
3	40	60	40	140
4	40	60	60	160
5	40	60	40*	140
6	40	60	80	180
7	40	60	-	160**
8	40	100	0	140
9	40	100	40	180
10	40	140	0	180
11	40	210	0	250

NOTES: * Treatment 5, nitrogen at G.S. (Growth Stage) 37 was applied as foliar urea (46% N).

** Treatment 7 received an extra 30 kg of N in early May, repeated in late May.

Experimental diary:

- 06-Sep-94 : B : PK as (0:20:32) at 1317 kg.
- 08-Sep-94 : B : Deep tine cultivated with vibrating tines 60 cm apart and 45 cm deep.
- 29-Sep-94 : B : Rolled. MSS Optica at 2.4 l in 200 l.
- 07-Oct-94 : B : Ploughed and furrow pressed.
- 21-Oct-94 : B : Spring-tine cultivated.
: B : Rotary harrowed, Mercia, dressed Rappor, drilled at 380 seeds per m².
- 24-Nov-94 : B : Alpha Isoproturon 500 at 3.0 l with Stomp 400 at 3.3 l in 200 l.
- 10-Mar-95 : B : 34.5% N at 118 kg.
- 07-Apr-95 : B : Tiger 90 at 35 kg.
- 20-Apr-95 : T : N 1, 2, 3, 4, 5, 6, 7: 34.5% N at 174 kg.
: T : N 8, 9: 34.5% N at 290 kg.
: T : N 10: 34.5% N at 405 kg.
: T : N 11: 34.5% N at 609 kg.
- 10-May-95 : B : Halo at 2.0 l in 200 l.

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Experimental diary:

11-May-95 : T : N 7: 34.5% N at 87 kg.
15-May-95 : T : N 2: 34.5% N at 58 kg.
 : T : N 3 and 9: 34.5% N at 116 kg.
 : T : N 4: 34.5% N at 174 kg.
 : T : N 5: 46% N (foliar) at 87 kg.
 : T : N 6: 34.5% N at 232 kg.
24-May-95 : T : N 7: 34.5% N at 87 kg.
20-Jun-95 : B : Silvacur at 1.0 l in 200 l.
03-Aug-95 : B : Combine harvested.

Previous crops: Potatoes 1993, s. beans 1994.

- NOTES:** (1) Tiger 90 is a sulphur fertilizer (90% S).
(2) The yield of one plot of treatment 8, was lost during harvesting. An estimated value was used in the analysis.
(3) Leaf chlorophyll was measured with a SPAD metre on 8 occasions between GS 24 and GS 77.

GRAIN TONNES/HECTARE

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

N	
1	8.62
2	9.22
3	9.43
4	9.47
5	9.43
6	9.48
7	9.53
8	9.86
9	9.71
10	10.10
11	9.61
Mean	9.50

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

N
0.391

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	29	0.553	5.8
GRAIN MEAN DM%	91.2		
PLOT AREA HARVESTED	0.00345		