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00/R/WW/3 Plant N Indicators - W. Wheat

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00/R/WW/3

WINTER WHEAT

PLANT N INDICATORS

Object: To calibrate plant monitoring methods for fine-tuning nitrogen fertiliser applications - Fosters.

Sponsor: P.B. Barraclough.

Design: 3 randomised blocks of 19 plots.

Whole plot dimensions: 3.0 x 20.0.

Treatments:

	Kg N and timing:				Total
	Mid-March GS 24	Late April GS 31	Mid-May GS 37	Early June GS 51	
-	0	0	0	0	0
A	50	0	0	0	50
B	50	0	50	0	100
C	50	0	100	0	150
D	50	0	0	100	150
E	50	50	0	0	100
F	50	50	50	0	150
G	50	50	100	0	200
H	50	50	0	100	200
I	50	100	0	0	150
J	50	100	50	0	200
K	50	100	100	0	250
L	50	100	0	100	250
M	50	150	0	0	200
N	50	150	50	0	250
O	50	150	100	0	300
P	50	150	0	100	300
Q	50	200	0	0	250
R	50	250	0	0	300

Experimental diary:

01-Sep-99 : B : : Ploughed.
 15-Sep-99 : B : : Tiger 90 at 15.0 kg. Combination drilled, Hereward, tr. Sibutol, at 300 seeds/m² with the Accord drill.
 27-Oct-99 : B : : tm)Lexus 50 DF at 20 g in 200 l.
 : B : : tm)Stomp 400 SC at 2.5 l in 200 l.
 : B : : tm)Cyperkill 10 at 250 ml in 200 l.
 14-Mar-00 : T : : Nitrogen applied as 34.5% N (GS 24).
 21-Mar-00 : B : : tm)Ally at 30 g in 200 l.
 : B : : tm)Starane 2 at 0.75 l in 200 l.
 : B : : tm)Topik at 125 ml in 200 l.
 : B : : tm)Toil at 1.0 l in 200 l.
 25-Apr-00 : B : : tm)BASF 3C Chlormequat 720 at 2.0 l in 200 l.
 : B : : tm)Moddus at 0.2 l in 200 l.
 28-Apr-00 : T : : Nitrogen applied as 34.5% N (GS 31).

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Experimental diary:

09-May-00 : B : : tm)Opus at 0.5 l in 100 l.
 : B : : tm)Unix at 0.5 kg in 100 l.
18-May-00 : T : : Nitrogen applied as 34.5% N (GS 37).
20-May-00 : B : : tm)Bravo 500 at 1.0 l in 200 l.
 : B : : tm)Opus at 0.75 l in 200 l.
02-Jun-00 : T : : Nitrogen applied as 34.5% N (GS 51).
29-Jun-00 : B : : Hand rogued wild oats.
07-Jul-00 : B : : Hand rogued wild oats.
16-Aug-00 : T : : Combine harvested.

Previous crops: S. beans 1998, w. oats 1999.

- NOTES:** (1) Some plots received the wrong nitrogen fertilizer in June. 7 plots were lost with treatment combinations; one of each B, C, G, K, M and two of Q, a plot with treatment P was created. Estimated values were used in the analysis.
- (2) Soil was sampled in February for nitrogen content. Crop reflectance measurements were taken in March and April. Chlorophyll meter (SPAD) readings were taken during May and June. Assessments of BYDV damage were made in May. Plant nitrogen content (JUBIL) was measured in May and an assessment of lodging in July.

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GRAIN TONNES/HECTARE

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

NITROGEN

-	4.37
A	6.07
B	7.55
C	8.83
D	7.50
E	8.15
F	8.89
G	9.98
H	9.13
I	8.93
J	10.22
K	10.75
L	10.37
M	10.04
N	10.66
O	10.54
P	10.76
Q	10.41
R	10.86

Mean 9.17

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

NITROGEN

0.215

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.263	2.9

GRAIN MEAN DM% 83.3

PLOT AREA HARVESTED 0.00359 (AVERAGE)