

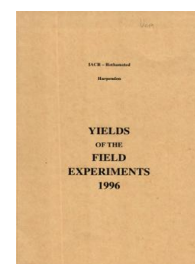
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## 96/R/WW/3 Plant N Indicators - W. Wheat

### Rothamsted Research

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96/R/WW/3

# WINTER WHEAT

## PLANT N INDICATORS

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

**Sponsors:** P.B. Barraclough, S. Haysman.

**Design:** 4 randomised blocks of 10 plots.

**Whole plot dimensions:** 3.0 x 17.0.

### Treatments:

| N  | Timing and rate of nitrogen (kg N): |               |             |       |
|----|-------------------------------------|---------------|-------------|-------|
|    | Early<br>March                      | Mid-<br>April | Mid-<br>May | Total |
| 1  | 40                                  | 80            | 0           | 120   |
| 2  | 40                                  | 80            | 20          | 140   |
| 3  | 40                                  | 80            | 40          | 160   |
| 4  | 40                                  | 80            | 60          | 180   |
| 5  | 40                                  | 80            | 80          | 200   |
| 6  | 40                                  | 80            | 100         | 220   |
| 7  | 40                                  | 120           | 0           | 160   |
| 8  | 40                                  | 160           | 0           | 200   |
| 9  | 40                                  | 200           | 0           | 240   |
| 10 | 40                                  | 240           | 0           | 280   |

### Experimental diary:

29-Jul-95 : B : Straw baled.  
 05-Aug-95 : B : PK as (0:20:32) at 1407 kg.  
 25-Sep-95 : B : Ploughed and furrow pressed.  
 26-Sep-95 : B : Rotary harrowed, Hereward, dressed Panocrine, drilled at 380 seeds per m<sup>2</sup>.  
 23-Oct-95 : B : Avadex BW Granular at 22.5 kg.  
 20-Nov-95 : B : MSS Iprofile at 2.6 l with Stomp 400 SC at 2.6 l in 200 l.  
 28-Feb-96 : B : Tiger 90 (90% S) at 35 kg.  
 07-Mar-96 : B : 34.5% N at 116 kg.  
 03-Apr-96 : T : N 1, 2, 3, 4, 5, 6: 34.5% N at 232 kg.  
                   : T : N 7: 34.5% N at 348 kg.  
                   : T : N 8: 34.5% N at 464 kg.  
                   : T : N 9: 34.5% N at 580 kg.  
                   : T : N 10: 34.5% N at 696 kg.  
 30-Apr-96 : B : Starane 2 at 1.0 l with Barclay Holdup at 2.3 l in 200 l.  
 29-May-96 : T : N 2: 34.5% N at 58 kg.  
                   : T : N 3: 34.5% N at 116 kg.  
                   : T : N 4: 34.5% N at 174 kg.  
                   : T : N 5: 34.5% N at 232 kg.  
                   : T : N 6: 34.5% N at 290 kg.

96/R/WW/3

**Experimental diary:**

07-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in  
320 l.

15-Aug-96 : B : Combine harvested.

Previous crops: W. beans 1994, w. oats 1995.

**NOTE:** Plant numbers and soil nitrogen were measured in March. Chlorophyll meter readings were taken on nine occasions. Growth analysis measurements were made on five occasions, this included dry matter and nitrogen content of leaf and shoots, growth area index, leaf area and chlorophyll in leaves. Grain and straw were analysed for nitrogen content.

**GRAIN TONNES/HECTARE**

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

| N    |       |
|------|-------|
| 1    | 9.64  |
| 2    | 9.98  |
| 3    | 10.18 |
| 4    | 10.46 |
| 5    | 10.36 |
| 6    | 10.53 |
| 7    | 10.19 |
| 8    | 10.68 |
| 9    | 10.87 |
| 10   | 10.74 |
| Mean | 10.36 |

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

| N     |
|-------|
| 0.186 |

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

| Stratum  | d.f. | s.e.  | cv% |
|----------|------|-------|-----|
| BLOCK.WP | 27   | 0.263 | 2.5 |

GRAIN MEAN DM% 85.3

PLOT AREA HARVESTED 0.00253