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## Yields of the Field Experiments 1978

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### 78/R/CS/206 Late N - Wheat

#### Rothamsted Research

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78/R/CS/206

LATE N

Object: To study the residual effects on wheat of a range of fertilisers applied to potatoes in 1977 - Great Knott II.

Sponsors: T.M. Addiscott, J. Ashworth, A. Penny, F.V. Widdowson.

The second year, wheat.

For first year see 77/R/CS/206.

Design: 3 randomised blocks of 18 plots.

Whole plot dimensions: 4.27 x 13.1.

Treatments: All combinations of:-

1. N FORM(77)      Forms of nitrogen fertiliser in 1977:

|          |   |
|----------|---|
| AA       | Aqueous ammonia, injected before planting                                   |
| AA+NITRA | Aqueous ammonia + nitrapyrin ('N-Serve') at 1 kg, injected before planting  |
| AA+STC   | Aqueous ammonia + sodium trithiocarbonate at 42 kg injected before planting |
| IB SMALL | IBDU (isobutylidene diurea), small granules to seedbed                      |
| IB LARGE | IBDU, large granules to seedbed   |
| AN E+L   | Ammonium nitrate, half in seedbed, half top-dressed                         |
| AN E     | Ammonium nitrate, all in seedbed  |

2. N RATE(1)      Rates of nitrogen fertiliser in 1977 (kg N):

200  
300

plus four extra treatments given ammonium nitrate, all in the seedbed in 1977 (kg N):

N RATE(2)

AN E 150  
AN E 250  
AN E 350  
AN E 400

NOTES: (1) The intended rate of sodium trithiocarbonate was 24 kg. Only one plot, treatment N RATE(1)200, received this rate, all other plots received 42 kg.

(2) Aqueous ammonia and inhibitors were injected, 10 cm deep with tines 30 cm apart.

Basal applications: Manures: (0:20:20) at 310 kg, combine drilled. 'Nitra-Shell 34' at 240 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l). Growth regulator: Chlormequat at 1.4 kg in 220 l.

Seed: Atou, sown at 210 kg.

78/R/CS/206

Cultivations, etc.:— Heavy spring-tine cultivated twice: 7 and 8 Nov, 1977. Seed sown: 15 Nov. N applied: 19 Apr, 1978. Weedkiller and growth regulator applied: 10 May. Combine harvested: 12 Sept.

NOTE: Crop samples were taken for N determinations.

GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

| N RATE(1)<br>N FORM(77) | 200  | 300  | MEAN |
|-------------------------|------|------|------|
| AA                      | 5.01 | 5.69 | 5.35 |
| AA+NITRA                | 5.26 | 5.89 | 5.57 |
| AA+STC                  | 5.41 | 5.96 | 5.69 |
| IB SMALL                | 5.51 | 5.78 | 5.65 |
| IB LARGE                | 5.63 | 5.90 | 5.76 |
| AN E+L                  | 5.91 | 5.99 | 5.95 |
| AN E                    | 5.33 | 5.79 | 5.56 |
| MEAN                    | 5.44 | 5.86 | 5.65 |

  

| N RATE(2) | AN E 150 | AN E 250 | AN E 350 | AN E 400 | MEAN |
|-----------|----------|----------|----------|----------|------|
|           | 5.00     | 5.61     | 5.49     | 6.01     | 5.53 |

GRAND MEAN 5.62

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

| TABLE | N RATE(2) | N FORM(77) | N RATE(1) | N FORM(77)<br>N RATE(1)<br>& RATE(2) |
|-------|-----------|------------|-----------|--------------------------------------|
| SED   | 0.263     | 0.186      | 0.099     | 0.263                                |

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

| STRATUM             | DF      | SE    | CV% |
|---------------------|---------|-------|-----|
| BLOCK.WP            | 34      | 0.322 | 5.7 |
| PLOT AREA HARVESTED | 0.00279 |       |     |