ROTHAMSTED RESEARCH

# Yields of the Field Experiments 1972

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## 72/S/B/1 Barley Varieties, Ppa, Rates and Times of N

### Rothamsted Research

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72/S/B/1

BARLEY

VARIETIES, PPA, RATES AND TIMES OF N

Object: To study the effects of a range of nitrogen levels, applied to seedbed or in May, on the yield of two barley varieties. The effects of dressing seed with phenylphosphonic acid are also studied - Saxmundham Grove Plot.

Sponsors: F.V. Widdowson, A. Penny.

Design: 2 x 3 x 2 x 2 in 2 randomised blocks of 6 plots split into 2 breadthways and lengthways.

Whole plots dimensions: 2.74 x 12.2. Sub plot area harvested: 0.00052.

Treatments: All combinations of:-

Whole plots: 1. Varieties: Julia, Midas.
2. N levels: 50, 100, 150 kg N as calcium nitrate.

Sub plots: 3. Time of application of N: To seedbed (E), top dressed (L).
4. Seed dressing (SD): None (O), phenylphosphonic acid (D) at 0.38 kg.

Basal applications: 310 kg (0:20:20) to seedbed. Weedkiller: Dichlorprop plus MCPA ('Mephetol Plus' at 5.6 l). Fungicide: Tridemorph at 0.53 kg.

Seed: Sown at 190 kg.

Cultivations, etc.: Ploughed: Oct, 1971. Seedbed N and basal PK applied, seed drilled: 27 Mar, 1972. N top dressed, weedkiller and fungicide applied: 16 May. Cut by hand: 21 Aug. Previous crop: Barley.

Standard errors per plot. Grain, tonnes/hectare:

| | | |
|---|---|---|
| Whole plot | | 0.208 or 4.7% (11 d.f.) |
| Sub plot | Application: | 0.410 or 9.3% (12 d.f.) |
| | SD: | 0.255 or 5.8% (12 d.f.) |
| | Application x SD: | 0.462 or 10.4% (12 d.f.) |



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TABLES OF MEANS

GRAIN: TONNES/HECTARE

| | N: KG/HA | | | APPLICATION | | SD | | |
|---|---|---|---|---|---|---|---|---|
| | 50 | 100 | 150 | E | L | O | D | Mean |
| VARIETY | | | | | | | | |
| Julia | 3.97 | 4.90 | 5.05 | 4.77 | 4.51 | 4.92 | 4.36 | 4.64 |
| Midas | 4.09 | 4.28 | 4.29 | 4.60 | 3.84 | 4.29 | 4.15 | 4.22 |
| | | | N: KG/HA | | | | | |
| | | | 50 | 4.13 | 3.94 | 4.22 | 3.84 | 4.03 |
| | | | 100 | 4.92 | 4.26 | 4.76 | 4.42 | 4.59 |
| | | | 150 | 5.01 | 4.34 | 4.84 | 4.50 | 4.67 |
| | | | | | APPLICATION | | | |
| | | | | | E | 4.84 | 4.53 | 4.68 |
| | | | | | L | 4.38 | 3.97 | 4.18 |
| Mean | | | | | | 4.61 | 4.25 | 4.43 |

Mean D.M. %: 86.2

STANDARD ERRORS OF DIFFERENCES

| VARIETY | N | APPLICATION | SD | VARIETY N | VARIETY APPLICATION | VARIETY SD |
|---|---|---|---|---|---|---|
| 0.120 | 0.147 | 0.167 | 0.104 | 0.208 | 0.206 | 0.159 |
| Unless same level of VARIETY | | | | | 0.237 | 0.147 |

| | N APPLICATION | N SD | APPLICATION SD |
|---|---|---|---|
| | 0.252 | 0.195 | 0.197 |
| Unless same level of N | 0.290 | 0.181 | |
| APPLICATION | | | 0.169 |
| SD | | | 0.214 |



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STRAW: TONNES/HECTARE

| | N: KG/HA | | | APPLICATION | | SD | | |
|---|---|---|---|---|---|---|---|---|
| | 50 | 100 | 150 | E | L | O | D | Mean |
| VARIETY | | | | | | | | |
| Julia | 3.69 | 5.28 | 6.05 | 5.26 | 4.75 | 5.24 | 4.77 | 5.01 |
| Midas | 4.81 | 5.33 | 6.28 | 5.81 | 5.14 | 5.66 | 5.28 | 5.47 |
| | | | N: KG/HA | | | | | |
| | | | 50 | 4.33 | 4.16 | 4.49 | 4.01 | 4.25 |
| | | | 100 | 5.69 | 4.92 | 5.44 | 5.17 | 5.31 |
| | | | 150 | 6.58 | 5.75 | 6.42 | 5.90 | 6.16 |
| | | | | APPLICATION | | | | |
| | | | | E | | 5.74 | 5.33 | 5.53 |
| | | | | L | | 5.16 | 4.72 | 4.94 |
| Mean | | | | | | 5.45 | 5.03 | 5.24 |

Mean D.M. %: 86.1



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