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# Yields of the Field Experiments 1987

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ARC, Institute of Arable Crops Research  
Rothamsted Experimental Station  
Harpenden  
Herts  
SG8 5LR  
UK  
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## Annals - Winter Wheat

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87/R/WW/1

WINTER WHEAT

VARIETIES

Object: To study a selection of newer varieties of w. wheat on land in rotation (pathogen free) and after wheat (pathogen infected) - Great Knott I (pathogen free RH) and Highfield VI (pathogen infected RD).

Sponsors: R. Moffitt, R.J. Gutteridge.

Design: Two randomised blocks of 2 whole plots split into (RH) 11, (RD) 13.

Sub plot dimensions: 3.0 x 12.0.

Treatments: All combinations of:-

Whole plots

|             |   |
|-------------|---|
| 1. INSCTCDE | Insecticide:                                    |
| NONE        | None  |
| PIRIMICA    | Pirimicarb at 0.14 kg in 200 l on 23 June, 1987 |

Sub plots

|            |                                      |
|------------|--------------------------------------|
| 2. VARIETY | Varieties:                           |
| AVALON     | Avalon (on RH only)                  |
| AVALON A   | Avalon (grown after Avalon, RD only) |
| AVALON N   | Avalon (grown after Norman, RD only) |
| BRIMSTON   | Brimstone                            |
| FORTRESS   | Fortress                             |
| GALAHAD    | Galahad                              |
| HORNET     | Hornet                               |
| MERCIA     | Mercia                               |
| MISSION    | Mission                              |
| NORMAN     | Norman (on RH only)                  |
| NORMAN A   | Norman (grown after Avalon, RD only) |
| NORMAN N   | Norman (grown after Norman, RD only) |
| PARADE     | Parade                               |
| RAPIER     | Rapier                               |
| RENDEZVO   | Rendezvous                           |

NOTES: (1) A planned test of urea was not applied.  
(2) A further experiment on a pathogen free site at Woburn was not sown because of unsuitable conditions.

Basal applications:

Great Knott I (RH): Manures: 'Nitram' at 380 kg. Weedkillers: Clopyralid at 0.07 kg and bromoxynil at 0.34 kg with mecoprop at 2.5 kg in 200 l. Fungicides: Propiconazole at 0.25 kg with tridemorph at 0.19 kg in 200 l.

Highfield VI (RD): Manures: 'Nitram' at 590 kg. Weedkillers: Isoproturon at 2.5 kg with clopyralid at 0.07 kg, bromoxynil at 0.34 kg and mecoprop at 2.5 kg in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l. Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l.

87/R/WW/1

Seed: Varieties sown at 190 kg on both sites.

Cultivations, etc.:-

Great Knott I (RH): Heavy spring-tine cultivated: 17 Oct, 1986.  
 Rotary harrowed, seed sown: 30 Oct. N applied: 16 Apr, 1987.  
 Weedkillers applied: 6 May. Fungicides applied: 29 June. Combine harvested: 31 Aug. Previous crops: S. beans 1985, potatoes 1986.  
 Highfield VI (RD): Ploughed: 1 Oct, 1986. Disced twice: 14 Oct.  
 Rotary harrowed, seed sown: 17 Oct. N applied, weedkillers applied: 15 Apr, 1987. Prochloraz and carbendazim applied: 5 May. Propiconazole, carbendazim and maneb applied: 29 June. Combine harvested: 1 Sept. Previous crops: Potatoes 1985, w. wheat 1986.

NOTES: (1) Foot and roots rots were assessed in June on Highfield VI (RD).  
 (2) One plot with treatment combination BRIMSTON NONE on the Highfield site was treated as missing because of severe lodging. An estimated value was used in the analysis.

87/R/WW/1 GREAT KNOTT I (RH)

GRAIN TONNES/HECTARE

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

| INSCTCDE<br>VARIETY | NONE | PIRIMICA | Mean |
|---------------------|------|----------|------|
| AVALON              | 8.35 | 7.75     | 8.05 |
| BRIMSTON            | 9.44 | 9.51     | 9.47 |
| FORTRESS            | 8.89 | 9.25     | 9.07 |
| GALAHAD             | 9.06 | 9.29     | 9.17 |
| HORNET              | 9.41 | 9.62     | 9.52 |
| MERCIA              | 8.75 | 9.04     | 8.89 |
| MISSION             | 8.20 | 8.15     | 8.17 |
| NORMAN              | 8.27 | 8.61     | 8.44 |
| PARADE              | 8.95 | 8.98     | 8.97 |
| RAPIER              | 9.37 | 9.64     | 9.51 |
| RONDEZVO            | 9.07 | 9.43     | 9.25 |
| Mean                | 8.89 | 9.02     | 8.96 |

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

| Table  | VARIETY | INSCTCDE*<br>VARIETY |
|--------|---------|----------------------|
| s.e.d. | 0.148   | 0.209                |

\* Within the same level of INSCTCDE only

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

| Stratum             | d.f.    | s.e.  | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP            | 20      | 0.209 | 2.3 |
| GRAIN MEAN DM%      | 81.8    |       |     |
| PLOT AREA HARVESTED | 0.00245 |       |     |

87/R/WW/1 HIGHFIELD (RD)

GRAIN TONNES/HECTARE

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

| INSCTCDE<br>VARIETY | NONE | PIRIMICA | Mean |
|---------------------|------|----------|------|
| AVALON A            | 7.82 | 8.00     | 7.91 |
| AVALON N            | 7.87 | 8.13     | 8.00 |
| BRIMSTON            | 5.52 | 8.34     | 6.93 |
| FORTRESS            | 8.49 | 8.93     | 8.71 |
| GALAHAD             | 8.95 | 8.93     | 8.94 |
| HORNET              | 9.05 | 9.36     | 9.20 |
| MERCIA              | 8.37 | 8.64     | 8.51 |
| MISSION             | 7.05 | 7.07     | 7.06 |
| NORMAN A            | 8.52 | 8.55     | 8.53 |
| NORMAN N            | 8.16 | 8.51     | 8.34 |
| PARADE              | 8.42 | 8.98     | 8.70 |
| RAPIER              | 7.89 | 8.13     | 8.01 |
| RONDEZVO            | 7.62 | 8.53     | 8.08 |
| Mean                | 7.98 | 8.47     | 8.22 |

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

| Table  | VARIETY | INSCTCDE*<br>VARIETY |
|--------|---------|----------------------|
| s.e.d. | 0.342   | 0.483                |

\* Within the same level of INSCTCDE

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

| Stratum  | d.f. | s.e.  | cv% |
|----------|------|-------|-----|
| BLOCK.WP | 23   | 0.483 | 5.9 |

GRAIN MEAN DM% 82.8

PLOT AREA HARVESTED 0.00244



87/R/WW/3

WINTER WHEAT

FACTORS AFFECTING TILLERING AND YIELD

Object: To study the effects of soil residual nitrogen and applied fertilizer nitrogen on tillering, growth and yield of winter wheat sown early or later - Fosters corner.

Sponsors: R.D. Prew, R.J. Darby, W. Day, D.W. Lawlor, G.F.J. Milford, A. Penny, G.N. Thorne, A.D. Todd.

Design: A single replicate of  $2 \times 2 \times 2 \times 2 \times 2 + 32$  extra plots.

Whole plot dimensions: 3.0 x 16.0.

Treatments: All combinations of the following:-

- |             |  |
|-------------|--|
| 1. PREVCROP | Previous cropping:                                     |
| RAPE        | S. oilseed rape  |
| OATS        | S. oats  |
| 2. SOWDATE  | Dates of sowing:                                       |
| 18 SEPT     | Sown on 18 September, 1986                             |
| 16 OCT      | Sown on 16 October                                     |
| 3. WINTER N | Nitrogen (kg N) in winter (as urea):                   |
| 0           | None   |
| 40          | 40 kg applied on 20 November, 1986                     |
| 4. SPRING N | Application of 200 kg N in spring (as 'Nitro-Chalk'):  |
| SINGLE      | Single application at date of 3rd divided application  |
| DIVIDED     | Applied as 4 equal dressings                           |
| 5. N TIME   | Timing of spring nitrogen:                             |
| N NORM      | Normal timing on 12 Feb, 1987, 11 Mar, 6 Apr and 5 May |
| N LATE      | Late timing on 11 Mar, 6 Apr, 5 May and 27 May         |

plus all combinations of the following (all sown early, given spring N divided and at normal time):-

- |             |                                      |
|-------------|--------------------------------------|
| 1. PRECROPN | Previous cropping:                   |
| RAPE        | S. oilseed rape                      |
| OATS        | S. oats                              |
| 2. WINTR NN | Nitrogen (kg N) in winter (as urea): |
| 0           | None                                 |
| 40          | 40 kg applied on 19 November, 1986   |

87/R/WW/3

|             |   |
|-------------|---|
| 3. SPRNG NN | Nitrogen (kg N) in spring (as 'Nitro-Chalk'): |
| 0           | None  |
| 150         | 150   |
| 250         | 250   |

plus 3 replicates of all combinations of the following (all following oats, sown on 18 Sept and not given Winter N, Spring N given as divided applications at normal time):-

|             |   |
|-------------|---|
| 1. SPRNG NP | Nitrogen (kg N) in spring (as 'Nitro-Chalk'): |
| 0           | None  |
| 80          | 80  |
| 200         | 200   |

|             |   |
|-------------|---|
| 2. SUMMR NP | Nitrogen (kg N) in summer, as a foliar spray of urea: |
| 0           | None  |
| 40          | 40 kg applied half on 27 May half on 28 May, 1987     |

Basal applications: Manures: (0:18:36) at 280 kg. Weedkillers: Chlortoluron at 5.6 kg in 200 l. Diclofop-methyl at 1.1 kg in 500 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg applied with the growth regulator in 200 l. Propiconazole at 0.12 kg in 200 l, and on a second occasion with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l. Growth regulator: Chlormequat chloride at 1.6 kg. Molluscicide: Methiocarb at 0.22 kg.

Seed: Avalon, sown at 190 kg.

Cultivations, etc.:- PK applied: 15 Sept, 1986. Ploughed: 16 Sept. Rotary harrowed, methiocarb applied: 17 Sept. SOWDATE 18 SEPT plots rotary harrowed, seed sown: 18 Sept. SOWDATE 16 OCT plots rotary harrowed, seed sown: 16 Oct. Chlortoluron applied: 17 Oct. Diclofop-methyl applied: 5 Jan, 1987. Prochloraz with carbendazim and the growth regulator applied: 14 Apr. Propiconazole applied: 28 May. Propiconazole with carbendazim and maneb applied: 23 June. Combine harvested: 31 Aug. Previous crops: W. oats 1985, s. oats and s. rape 1986.

NOTE: Soil samples were taken to measure nitrate and ammonia contents in September, 1986, November and February, 1987. Photosynthesis, dry weight, leaf area, shoot numbers, N content of the above-ground crop and stem nitrate contents were measured on several occasions. Foliar diseases were assessed.

87/R/WW/3

GRAIN TONNES/HECTARE

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

|          |         |         |      |
|----------|---------|---------|------|
| SOWDATE  | 18 SEPT | 16 OCT  | Mean |
| PREVCROP |         |         |      |
| RAPE     | 8.58    | 8.46    | 8.52 |
| OATS     | 8.50    | 8.23    | 8.36 |
| Mean     | 8.54    | 8.34    | 8.44 |
| WINTER N | 0       | 40      | Mean |
| PREVCROP |         |         |      |
| RAPE     | 8.57    | 8.47    | 8.52 |
| OATS     | 8.15    | 8.58    | 8.36 |
| Mean     | 8.36    | 8.52    | 8.44 |
| WINTER N | 0       | 40      | Mean |
| SOWDATE  |         |         |      |
| 18 SEPT  | 8.51    | 8.57    | 8.54 |
| 16 OCT   | 8.21    | 8.47    | 8.34 |
| Mean     | 8.36    | 8.52    | 8.44 |
| SPRING N | SINGLE  | DIVIDED | Mean |
| PREVCROP |         |         |      |
| RAPE     | 8.48    | 8.56    | 8.52 |
| OATS     | 8.15    | 8.57    | 8.36 |
| Mean     | 8.32    | 8.57    | 8.44 |
| SPRING N | SINGLE  | DIVIDED | Mean |
| SOWDATE  |         |         |      |
| 18 SEPT  | 8.39    | 8.69    | 8.54 |
| 16 OCT   | 8.24    | 8.45    | 8.34 |
| Mean     | 8.32    | 8.57    | 8.44 |
| SPRING N | SINGLE  | DIVIDED | Mean |
| WINTER N |         |         |      |
| 0        | 8.16    | 8.57    | 8.36 |
| 40       | 8.48    | 8.57    | 8.52 |
| Mean     | 8.32    | 8.57    | 8.44 |
| N TIME   | N NORM  | N LATE  | Mean |
| PREVCROP |         |         |      |
| RAPE     | 8.50    | 8.54    | 8.52 |
| OATS     | 8.48    | 8.25    | 8.36 |
| Mean     | 8.49    | 8.39    | 8.44 |
| N TIME   | N NORM  | N LATE  | Mean |
| SOWDATE  |         |         |      |
| 18 SEPT  | 8.64    | 8.44    | 8.54 |
| 16 OCT   | 8.34    | 8.34    | 8.34 |
| Mean     | 8.49    | 8.39    | 8.44 |

87/R/WW/3

GRAIN TONNES/HECTARE

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

| N TIME   | N NORM   | N LATE | Mean    |
|----------|----------|--------|---------|
| WINTER N |          |        |         |
| 0        | 8.44     | 8.29   | 8.36    |
| 40       | 8.55     | 8.50   | 8.52    |
| Mean     | 8.49     | 8.39   | 8.44    |
| N TIME   | N NORM   | N LATE | Mean    |
| SPRING N |          |        |         |
| SINGLE   | 8.49     | 8.14   | 8.32    |
| DIVIDED  | 8.49     | 8.64   | 8.57    |
| Mean     | 8.49     | 8.39   | 8.44    |
| PREVCROP | WINTER N | 0      | 40      |
| RAPE     | SOWDATE  |        |         |
|          | 18 SEPT  | 8.72   | 8.45    |
|          | 16 OCT   | 8.43   | 8.49    |
| OATS     | 18 SEPT  | 8.30   | 8.70    |
|          | 16 OCT   | 8.00   | 8.46    |
| PREVCROP | SPRING N | SINGLE | DIVIDED |
| RAPE     | SOWDATE  |        |         |
|          | 18 SEPT  | 8.55   | 8.61    |
|          | 16 OCT   | 8.41   | 8.51    |
| OATS     | 18 SEPT  | 8.24   | 8.76    |
|          | 16 OCT   | 8.07   | 8.38    |
| PREVCROP | SPRING N | SINGLE | DIVIDED |
| RAPE     | WINTER N |        |         |
|          | 0        | 8.44   | 8.70    |
|          | 40       | 8.52   | 8.42    |
| OATS     | 0        | 7.87   | 8.43    |
|          | 40       | 8.44   | 8.71    |
| SOWDATE  | SPRING N | SINGLE | DIVIDED |
| 18 SEPT  | WINTER N |        |         |
|          | 0        | 8.30   | 8.72    |
|          | 40       | 8.49   | 8.66    |
| 16 OCT   | 0        | 8.01   | 8.41    |
|          | 40       | 8.47   | 8.48    |
| PREVCROP | N TIME   | N NORM | N LATE  |
| RAPE     | SOWDATE  |        |         |
|          | 18 SEPT  | 8.55   | 8.62    |
|          | 16 OCT   | 8.46   | 8.46    |
| OATS     | 18 SEPT  | 8.73   | 8.27    |
|          | 16 OCT   | 8.23   | 8.23    |



87/R/WW/3

GRAIN TONNES/HECTARE

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

|          | N TIME   | N NORM | N LATE |      |
|----------|----------|--------|--------|------|
| PREVCROP | WINTER N |        |        |      |
| RAPE     | 0        | 8.59   | 8.55   |      |
|          | 40       | 8.42   | 8.52   |      |
| OATS     | 0        | 8.28   | 8.02   |      |
|          | 40       | 8.68   | 8.48   |      |
|          | N TIME   | N NORM | N LATE |      |
| SOWDATE  | WINTER N |        |        |      |
| 18 SEPT  | 0        | 8.65   | 8.37   |      |
|          | 40       | 8.63   | 8.51   |      |
| 16 OCT   | 0        | 8.23   | 8.20   |      |
|          | 40       | 8.46   | 8.49   |      |
|          | N TIME   | N NORM | N LATE |      |
| PREVCROP | SPRING N |        |        |      |
| RAPE     | SINGLE   | 8.58   | 8.38   |      |
|          | DIVIDED  | 8.43   | 8.69   |      |
| OATS     | SINGLE   | 8.41   | 7.90   |      |
|          | DIVIDED  | 8.55   | 8.60   |      |
|          | N TIME   | N NORM | N LATE |      |
| SOWDATE  | SPRING N |        |        |      |
| 18 SEPT  | SINGLE   | 8.67   | 8.12   |      |
|          | DIVIDED  | 8.61   | 8.77   |      |
| 16 OCT   | SINGLE   | 8.32   | 8.17   |      |
|          | DIVIDED  | 8.37   | 8.52   |      |
|          | N TIME   | N NORM | N LATE |      |
| WINTER N | SPRING N |        |        |      |
| 0        | SINGLE   | 8.41   | 7.90   |      |
|          | DIVIDED  | 8.46   | 8.67   |      |
| 40       | SINGLE   | 8.58   | 8.38   |      |
|          | DIVIDED  | 8.51   | 8.62   |      |
| WINTR NN | 0        | 40     | Mean   |      |
| PRECROPN |          |        |        |      |
| RAPE     | 7.66     | 7.90   | 7.78   |      |
| OATS     | 7.07     | 7.46   | 7.26   |      |
| Mean     | 7.36     | 7.68   | 7.52   |      |
| SPRNG NN | 0        | 150    | 250    | Mean |
| PRECROPN |          |        |        |      |
| RAPE     | 5.91     | 8.60   | 8.83   | 7.78 |
| OATS     | 4.49     | 8.34   | 8.96   | 7.26 |
| Mean     | 5.20     | 8.47   | 8.89   | 7.52 |
| SPRNG NN | 0        | 150    | 250    | Mean |
| WINTR NN |          |        |        |      |
| 0        | 4.76     | 8.43   | 8.89   | 7.36 |
| 40       | 5.64     | 8.51   | 8.89   | 7.68 |
| Mean     | 5.20     | 8.47   | 8.89   | 7.52 |

87/R/WW/3

GRAIN TONNES/HECTARE

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

|          | SPRNG NN | 0    | 150  | 250  |
|----------|----------|------|------|------|
| PRECROPN | WINTR NN |      |      |      |
| RAPE     | 0        | 5.56 | 8.61 | 8.80 |
|          | 40       | 6.26 | 8.59 | 8.85 |
| OATS     | 0        | 3.96 | 8.26 | 8.99 |
|          | 40       | 5.01 | 8.42 | 8.94 |

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

|        |          |          |          |          |
|--------|----------|----------|----------|----------|
| Table  | PREVCROP | SOWDATE  | WINTER N | SPRING N |
| s.e.d. | 0.102    | 0.102    | 0.102    | 0.102    |
| Table  | N TIME   | PREVCROP | PREVCROP | SOWDATE  |
| s.e.d. | 0.102    | SOWDATE  | WINTER N | WINTER N |
|        |          | 0.145    | 0.145    | 0.145    |
| Table  | PREVCROP | SOWDATE  | WINTER N | PREVCROP |
| s.e.d. | SPRING N | SPRING N | SPRING N | N TIME   |
|        | 0.145    | 0.145    | 0.145    | 0.145    |
| Table  | SOWDATE  | WINTER N | SPRING N | PREVCROP |
| s.e.d. | N TIME   | N TIME   | N TIME   | SOWDATE  |
|        | 0.145    | 0.145    | 0.145    | WINTER N |
| Table  | PREVCROP | PREVCROP | SOWDATE  | PREVCROP |
| s.e.d. | SOWDATE  | WINTER N | WINTER N | SOWDATE  |
|        | SPRING N | SPRING N | SPRING N | N TIME   |
|        | 0.205    | 0.205    | 0.205    | 0.205    |
| Table  | PREVCROP | SOWDATE  | PREVCROP | SOWDATE  |
| s.e.d. | WINTER N | WINTER N | SPRING N | SPRING N |
|        | N TIME   | N TIME   | N TIME   | N TIME   |
|        | 0.205    | 0.205    | 0.205    | 0.205    |
| Table  | WINTER N |          |          |          |
| s.e.d. | SPRING N |          |          |          |
|        | N TIME   |          |          |          |
|        | 0.205    |          |          |          |

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

| Stratum | d.f. | s.e.  | cv% |
|---------|------|-------|-----|
| WP      | 6    | 0.290 | 3.4 |

GRAIN MEAN DM% 82.6

PLOT AREA HARVESTED 0.00207

87/R/WW/3

GRAIN TONNES/HECTARE

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

| SUMMR NP | 0    | 40   | Mean |
|----------|------|------|------|
| SPRNG NP |      |      |      |
| 0        | 3.51 | 4.21 | 3.86 |
| 80       | 6.57 | 6.94 | 6.76 |
| 200      | 8.23 | 8.46 | 8.34 |
| Mean     | 6.11 | 6.54 | 6.32 |

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

| Table  | SPRNG NP | SUMMR NP | SPRNG NP<br>SUMMR NP |
|--------|----------|----------|----------------------|
| s.e.d. | 0.223    | 0.182    | 0.315                |

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

| Stratum | d.f. | s.e.  | cv% |
|---------|------|-------|-----|
| WP      | 10   | 0.386 | 6.1 |

GRAIN MEAN DM% 80.6

STRAW TONNES/HECTARE

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

| SUMMR NP | 0    | 40   | Mean |
|----------|------|------|------|
| SPRNG NP |      |      |      |
| 0        | 3.65 | 3.86 | 3.76 |
| 80       | 6.39 | 6.53 | 6.46 |
| 200      | 7.83 | 8.33 | 8.08 |
| Mean     | 5.95 | 6.24 | 6.10 |

STRAW MEAN DM% 60.7

PLOT AREA HARVESTED 0.00047

87/R/WW/4

WINTER WHEAT

FACTORS AFFECTING TAKE-ALL

Object: To study the effects of a range of factors on the incidence of take-all and on the yield of w. wheat - Summerdells I.

Sponsors: D. Hornby, G.L. Bateman, R.J. Gutteridge.

Design: A single replicate of 2 x 2 x 2 x 2 x 2.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. SOWDATE                      Dates of sowing:  
    25 SEPT                      25 September, 1986  
    31 OCT                        31 October
2. SOILFUNG                    Application of fungicide to the seedbed:  
    NONE                         None  
    NUARIMOL                    Nuarimol at 1.3 kg in 375 l
3. SEEDRESS                    Seed dressings:  
    ORGANO M                    Organo mercury  
    TRIADIME                    Triadimenol plus fuberidazole
4. AUTUMN N                    N application to the seedbed:  
    0                              None  
    60                             60 kg N as 'Nitro-Chalk' on 25 Sept, 1986 or 31 Oct  
                                      for successive SOWDATES
5. N TIME                      Spring application of 200 kg N:  
    SINGLE                        Single application on 16 Apr, 1987  
    DIVIDED                      40 kg early, on 13 Feb, 160 kg later, on 16 Apr
6. N FORM                      Forms of spring nitrogen:  
    SUL AMM                     Sulphate of ammonia  
    AMM NITR                    Ammonium nitrate as 'Nitro-Chalk'

NOTE: Nuarimol was applied at 1.3 kg in error for the intended rate of 1.0 kg.

Basal applications: Manures: Chalk at 5.0 t. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg with clopyralid at 0.07 kg, bromoxynil at 0.34 kg and mecoprop at 2.5 kg in 200 l. Fungicides: Carbendazim at 0.15 kg and prochloraz at 0.40 kg in 200 l. Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.6 kg in 200 l.

Seed: Avalon, sown at 170 kg.



87/R/WW/4

Cultivations, etc.:- Heavy spring-tine cultivated, disced: 19 Aug, 1986. Chalk applied: 4 Sept. Paraquat applied: 11 Sept. Spring-tine cultivated: 24 Sept. SOWDATE 25 SEPT plots rotary harrowed, seed sown: 25 Sept. SOWDATE 31 OCT plots rotary harrowed, seed sown: 31 Oct. Remaining weedkillers applied: 16 Apr, 1987. Carbendazim and prochloraz applied: 7 May. Propiconazole, carbendazim and maneb applied: 1 July. Combine harvested: 4 Sept. Previous crops: W. wheat 1985, w. barley 1986.

NOTE: Plant samples were taken in mid-March, end of April and the beginning of July to assess take-all. Eyespot and sharp eyespot were assessed in July. Components of yield were measured and quality assessments were made on the grain.

GRAIN TONNES/HECTARE

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

|          |          |          |      |
|----------|----------|----------|------|
| SOILFUNG | NONE     | NUARIMOL | Mean |
| SOWDATE  |          |          |      |
| 25 SEPT  | 5.97     | 6.23     | 6.10 |
| 31 OCT   | 5.67     | 6.09     | 5.88 |
| Mean     | 5.82     | 6.16     | 5.99 |
| SEEDRESS | ORGANO M | TRIADIME | Mean |
| SOWDATE  |          |          |      |
| 25 SEPT  | 6.13     | 6.06     | 6.10 |
| 31 OCT   | 5.88     | 5.88     | 5.88 |
| Mean     | 6.01     | 5.97     | 5.99 |
| SEEDRESS | ORGANO M | TRIADIME | Mean |
| SOILFUNG |          |          |      |
| NONE     | 5.74     | 5.90     | 5.82 |
| NUARIMOL | 6.28     | 6.04     | 6.16 |
| Mean     | 6.01     | 5.97     | 5.99 |
| AUTUMN N | 0        | 60       | Mean |
| SOWDATE  |          |          |      |
| 25 SEPT  | 5.85     | 6.34     | 6.10 |
| 31 OCT   | 5.71     | 6.05     | 5.88 |
| Mean     | 5.78     | 6.20     | 5.99 |
| AUTUMN N | 0        | 60       | Mean |
| SOILFUNG |          |          |      |
| NONE     | 5.65     | 5.99     | 5.82 |
| NUARIMOL | 5.91     | 6.40     | 6.16 |
| Mean     | 5.78     | 6.20     | 5.99 |

87/R/WW/4

GRAIN TONNES/HECTARE

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

|          |         |          |      |
|----------|---------|----------|------|
| AUTUMN N | 0       | 60       | Mean |
| SEEDRESS |         |          |      |
| ORGANO M | 5.79    | 6.23     | 6.01 |
| TRIADIME | 5.77    | 6.17     | 5.97 |
| Mean     | 5.78    | 6.20     | 5.99 |
| N TIME   | SINGLE  | DIVIDED  | Mean |
| SOWDATE  |         |          |      |
| 25 SEPT  | 6.03    | 6.16     | 6.10 |
| 31 OCT   | 5.87    | 5.88     | 5.88 |
| Mean     | 5.95    | 6.02     | 5.99 |
| N TIME   | SINGLE  | DIVIDED  | Mean |
| SOILFUNG |         |          |      |
| NONE     | 5.80    | 5.83     | 5.82 |
| NUARIMOL | 6.11    | 6.21     | 6.16 |
| Mean     | 5.95    | 6.02     | 5.99 |
| N TIME   | SINGLE  | DIVIDED  | Mean |
| SEEDRESS |         |          |      |
| ORGANO M | 6.05    | 5.96     | 6.01 |
| TRIADIME | 5.85    | 6.08     | 5.97 |
| Mean     | 5.95    | 6.02     | 5.99 |
| N TIME   | SINGLE  | DIVIDED  | Mean |
| AUTUMN N |         |          |      |
| 0        | 5.70    | 5.85     | 5.78 |
| 60       | 6.20    | 6.19     | 6.20 |
| Mean     | 5.95    | 6.02     | 5.99 |
| N FORM   | SUL AMM | AMM NITR | Mean |
| SOWDATE  |         |          |      |
| 25 SEPT  | 5.90    | 6.30     | 6.10 |
| 31 OCT   | 5.90    | 5.86     | 5.88 |
| Mean     | 5.90    | 6.08     | 5.99 |
| N FORM   | SUL AMM | AMM NITR | Mean |
| SOILFUNG |         |          |      |
| NONE     | 5.68    | 5.95     | 5.82 |
| NUARIMOL | 6.11    | 6.20     | 6.16 |
| Mean     | 5.90    | 6.08     | 5.99 |

87/R/WW/4

GRAIN TONNES/HECTARE

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

| N FORM   | SUL  | AMM | AMM  | NITR | Mean |
|----------|------|-----|------|------|------|
| SEEDRESS |      |     |      |      |      |
| ORGANO M | 5.90 |     | 6.11 |      | 6.01 |
| TRIADIME | 5.89 |     | 6.05 |      | 5.97 |
| Mean     | 5.90 |     | 6.08 |      | 5.99 |

  

| N FORM   | SUL  | AMM | AMM  | NITR | Mean |
|----------|------|-----|------|------|------|
| AUTUMN N |      |     |      |      |      |
| 0        | 5.63 |     | 5.93 |      | 5.78 |
| 60       | 6.16 |     | 6.23 |      | 6.20 |
| Mean     | 5.90 |     | 6.08 |      | 5.99 |

  

| N FORM  | SUL  | AMM | AMM  | NITR | Mean |
|---------|------|-----|------|------|------|
| N TIME  |      |     |      |      |      |
| SINGLE  | 5.83 |     | 6.07 |      | 5.95 |
| DIVIDED | 5.96 |     | 6.08 |      | 6.02 |
| Mean    | 5.90 |     | 6.08 |      | 5.99 |

  

| SOWDATE | SOILFUNG | NONE     | NUARIMOL          |
|---------|----------|----------|-------------------|
| 25 SEPT | SEEDRESS | ORGANO M | ORGANO M TRIADIME |
| 31 OCT  |          |          |                   |
|         |          | 5.95     | 5.99 6.32 6.13    |
|         |          | 5.53     | 5.80 6.23 5.95    |

  

| SOWDATE | SOILFUNG | NONE | NUARIMOL       |
|---------|----------|------|----------------|
| 25 SEPT | AUTUMN N | 0    | 60 0 60        |
| 31 OCT  |          |      |                |
|         |          | 5.70 | 6.23 6.00 6.45 |
|         |          | 5.59 | 5.74 5.82 6.36 |

  

| SOWDATE | SEEDRESS | ORGANO M | TRIADIME       |
|---------|----------|----------|----------------|
| 25 SEPT | AUTUMN N | 0        | 60 0 60        |
| 31 OCT  |          |          |                |
|         |          | 5.86     | 6.40 5.84 6.28 |
|         |          | 5.71     | 6.05 5.70 6.05 |

  

| SOILFUNG | SEEDRESS | ORGANO M | TRIADIME       |
|----------|----------|----------|----------------|
| NONE     | AUTUMN N | 0        | 60 0 60        |
| NUARIMOL |          |          |                |
|          |          | 5.58     | 5.90 5.71 6.08 |
|          |          | 6.00     | 6.56 5.83 6.25 |

  

| SOWDATE | SOILFUNG | NONE   | NUARIMOL               |
|---------|----------|--------|------------------------|
| 25 SEPT | N TIME   | SINGLE | DIVIDED SINGLE DIVIDED |
| 31 OCT  |          |        |                        |
|         |          | 5.92   | 6.01 6.15 6.31         |
|         |          | 5.68   | 5.65 6.07 6.11         |

  

| SOWDATE | SEEDRESS | ORGANO M | TRIADIME               |
|---------|----------|----------|------------------------|
| 25 SEPT | N TIME   | SINGLE   | DIVIDED SINGLE DIVIDED |
| 31 OCT  |          |          |                        |
|         |          | 6.20     | 6.07 5.87 6.26         |
|         |          | 5.90     | 5.86 5.84 5.91         |

87/R/WW/4

GRAIN TONNES/HECTARE

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

| SOILFUNG | SEEDRESS | ORGANO M |         | TRIADIME |         |
|----------|----------|----------|---------|----------|---------|
|          | N TIME   | SINGLE   | DIVIDED | SINGLE   | DIVIDED |
| NONE     |          | 5.75     | 5.73    | 5.85     | 5.94    |
| NUARIMOL |          | 6.35     | 6.20    | 5.86     | 6.22    |

| SOWDATE | AUTUMN N | 0      |         | 60     |         |
|---------|----------|--------|---------|--------|---------|
|         | N TIME   | SINGLE | DIVIDED | SINGLE | DIVIDED |
| 25 SEPT |          | 5.69   | 6.02    | 6.38   | 6.31    |
| 31 OCT  |          | 5.72   | 5.69    | 6.02   | 6.07    |

| SOILFUNG | AUTUMN N | 0      |         | 60     |         |
|----------|----------|--------|---------|--------|---------|
|          | N TIME   | SINGLE | DIVIDED | SINGLE | DIVIDED |
| NONE     |          | 5.52   | 5.78    | 6.08   | 5.89    |
| NUARIMOL |          | 5.89   | 5.93    | 6.32   | 6.49    |

| SEEDRESS | AUTUMN N | 0      |         | 60     |         |
|----------|----------|--------|---------|--------|---------|
|          | N TIME   | SINGLE | DIVIDED | SINGLE | DIVIDED |
| ORGANO M |          | 5.68   | 5.90    | 6.42   | 6.03    |
| TRIADIME |          | 5.73   | 5.81    | 5.98   | 6.35    |

| SOWDATE | SOILFUNG | NONE |      |      | NUARIMOL |     |     |     |      |
|---------|----------|------|------|------|----------|-----|-----|-----|------|
|         | N FORM   | SUL  | AMM  | AMM  | NITR     | SUL | AMM | AMM | NITR |
| 25 SEPT |          | 5.70 | 6.23 | 6.09 | 6.36     |     |     |     |      |
| 31 OCT  |          | 5.66 | 5.67 | 6.13 | 6.05     |     |     |     |      |

| SOWDATE | SEEDRESS | ORGANO M |      |      | TRIADIME |     |     |     |      |
|---------|----------|----------|------|------|----------|-----|-----|-----|------|
|         | N FORM   | SUL      | AMM  | AMM  | NITR     | SUL | AMM | AMM | NITR |
| 25 SEPT |          | 5.84     | 6.43 | 5.96 | 6.16     |     |     |     |      |
| 31 OCT  |          | 5.97     | 5.79 | 5.82 | 5.93     |     |     |     |      |

| SOILFUNG | SEEDRESS | ORGANO M |      |      | TRIADIME |     |     |     |      |
|----------|----------|----------|------|------|----------|-----|-----|-----|------|
|          | N FORM   | SUL      | AMM  | AMM  | NITR     | SUL | AMM | AMM | NITR |
| NONE     |          | 5.56     | 5.92 | 5.80 | 5.99     |     |     |     |      |
| NUARIMOL |          | 6.25     | 6.30 | 5.97 | 6.11     |     |     |     |      |

| SOWDATE | AUTUMN N | 0    |      |      | 60   |     |     |     |      |
|---------|----------|------|------|------|------|-----|-----|-----|------|
|         | N FORM   | SUL  | AMM  | AMM  | NITR | SUL | AMM | AMM | NITR |
| 25 SEPT |          | 5.49 | 6.21 | 6.30 | 6.39 |     |     |     |      |
| 31 OCT  |          | 5.77 | 5.64 | 6.02 | 6.08 |     |     |     |      |

| SOILFUNG | AUTUMN N | 0    |      |      | 60   |     |     |     |      |
|----------|----------|------|------|------|------|-----|-----|-----|------|
|          | N FORM   | SUL  | AMM  | AMM  | NITR | SUL | AMM | AMM | NITR |
| NONE     |          | 5.40 | 5.90 | 5.96 | 6.01 |     |     |     |      |
| NUARIMOL |          | 5.87 | 5.96 | 6.36 | 6.45 |     |     |     |      |

| SEEDRESS | AUTUMN N | 0    |      |      | 60   |     |     |     |      |
|----------|----------|------|------|------|------|-----|-----|-----|------|
|          | N FORM   | SUL  | AMM  | AMM  | NITR | SUL | AMM | AMM | NITR |
| ORGANO M |          | 5.56 | 6.02 | 6.25 | 6.20 |     |     |     |      |
| TRIADIME |          | 5.71 | 5.83 | 6.07 | 6.26 |     |     |     |      |

| SOWDATE | N TIME | SINGLE |      |      | DIVIDED |     |     |     |      |
|---------|--------|--------|------|------|---------|-----|-----|-----|------|
|         | N FORM | SUL    | AMM  | AMM  | NITR    | SUL | AMM | AMM | NITR |
| 25 SEPT |        | 5.75   | 6.31 | 6.04 | 6.28    |     |     |     |      |
| 31 OCT  |        | 5.91   | 5.83 | 5.88 | 5.89    |     |     |     |      |



87/R/WW/4

GRAIN TONNES/HECTARE

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

| SOILFUNG | N TIME | SINGLE |      |     | DIVIDED |     |      |     |      |
|----------|--------|--------|------|-----|---------|-----|------|-----|------|
|          | N FORM | SUL    | AMM  | AMM | NITR    | SUL | AMM  | AMM | NITR |
| NONE     |        |        | 5.53 |     | 6.07    |     | 5.83 |     | 5.84 |
| NUARIMOL |        |        | 6.13 |     | 6.08    |     | 6.09 |     | 6.33 |

| SEEDRESS | N TIME | SINGLE |      |     | DIVIDED |     |      |     |      |
|----------|--------|--------|------|-----|---------|-----|------|-----|------|
|          | N FORM | SUL    | AMM  | AMM | NITR    | SUL | AMM  | AMM | NITR |
| ORGANO M |        |        | 5.95 |     | 6.15    |     | 5.86 |     | 6.07 |
| TRIADIME |        |        | 5.71 |     | 6.00    |     | 6.06 |     | 6.10 |

| AUTUMN N | N TIME | SINGLE |      |     | DIVIDED |     |      |     |      |
|----------|--------|--------|------|-----|---------|-----|------|-----|------|
|          | N FORM | SUL    | AMM  | AMM | NITR    | SUL | AMM  | AMM | NITR |
| 0        |        |        | 5.44 |     | 5.97    |     | 5.82 |     | 5.89 |
| 60       |        |        | 6.22 |     | 6.18    |     | 6.10 |     | 6.28 |

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

|                              |       |
|------------------------------|-------|
| Margins of two factor tables | 0.173 |
| Two factor tables            | 0.245 |
| Three factor tables          | 0.347 |

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

| Stratum  | d.f. | s.e.  | cv%  |
|----------|------|-------|------|
| BLOCK.WP | 19   | 0.693 | 11.6 |

GRAIN MEAN DM% 72.5

PLOT AREA HARVESTED 0.00272

87/R/WW/5

WINTER WHEAT

APHICIDE, N AND FUNGICIDE

Object: To determine the economic thresholds for cereal aphids with different levels of inputs - Delafield.

Sponsor: N. Carter.

Design: 3 randomised blocks of 12 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments: All combinations of:-

1. APHICIDE                      Aphicides (applied in 200 l):  
    NONE                              None  
    PIRIMICA                      Pirimicarb applied at 0.14 kg on 23 June, 1987, 3 July and 16 July
2. N RATE                      Nitrogen fertilizers (kg N) as 'Nitram' on 14 Apr, 1987:  
    80  
    120  
    160
3. FUNGICIDE                  Fungicides:  
    NONE                              None  
    31+39+59                      Fungicide sprays at growth stage 31, 39, 59:  
                                    G.S. 31 - Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 380 l on 6 May, 1987  
                                    G.S. 39 - Propiconazole at 0.12 kg in 200 l on 28 May  
                                    G.S. 59 - Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l on 23 June

Basal applications: Weedkillers: Clopyralid at 0.07 kg and bromoxynil at 0.34 kg with mecoprop at 2.5 kg in 200 l. Glyphosate at 1.4 kg in 200 l. Growth regulator: Chlormequat at 1.6 kg in 200 l.

Seed: Avalon, sown at 200 kg.

Cultivations, etc.:- Rotary harrowed, seed sown: 6 Nov, 1986. Clopyralid, bromoxynil and mecoprop applied: 23 Apr, 1987. Growth regulator applied: 6 May. Glyphosate applied: 17 Aug. Combine harvested: 1 Sept. Previous crops: W. wheat 1985, potatoes 1986.

NOTE: Aphids were counted from early June until late July. Plant samples were taken at anthesis for dry weight measurements. Disease assessments were made in late June and late July. Components of yield were measured.

87/R/WW/5

GRAIN TONNES/HECTARE

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

| N RATE   | 80   | 120  | 160  | Mean |
|----------|------|------|------|------|
| APHICIDE |      |      |      |      |
| NONE     | 6.62 | 6.96 | 7.21 | 6.93 |
| PIRIMICA | 6.73 | 7.27 | 7.47 | 7.16 |
| Mean     | 6.68 | 7.12 | 7.34 | 7.04 |

| FUNGCIDE | NONE | 31+39+59 | Mean |
|----------|------|----------|------|
| APHICIDE |      |          |      |
| NONE     | 6.40 | 7.46     | 6.93 |
| PIRIMICA | 6.66 | 7.65     | 7.16 |
| Mean     | 6.53 | 7.56     | 7.04 |

| FUNGCIDE | NONE | 31+39+59 | Mean |
|----------|------|----------|------|
| N RATE   |      |          |      |
| 80       | 6.39 | 6.96     | 6.68 |
| 120      | 6.57 | 7.66     | 7.12 |
| 160      | 6.64 | 8.04     | 7.34 |
| Mean     | 6.53 | 7.56     | 7.04 |

|          | N RATE   | 80   | 120      | 160  |          |      |          |
|----------|----------|------|----------|------|----------|------|----------|
| APHICIDE | FUNGCIDE | NONE | 31+39+59 | NONE | 31+39+59 | NONE | 31+39+59 |
| NONE     |          | 6.25 | 7.00     | 6.50 | 7.42     | 6.46 | 7.95     |
| PIRIMICA |          | 6.54 | 6.92     | 6.65 | 7.90     | 6.81 | 8.13     |

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

| Table  | APHICIDE | N RATE | FUNGCIDE | APHICIDE<br>N RATE |
|--------|----------|--------|----------|--------------------|
| s.e.d. | 0.124    | 0.152  | 0.124    | 0.215              |

| Table  | APHICIDE<br>FUNGCIDE | N RATE<br>FUNGCIDE | APHICIDE<br>N RATE<br>FUNGCIDE |
|--------|----------------------|--------------------|--------------------------------|
| s.e.d. | 0.176                | 0.215              | 0.304                          |

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

| Stratum  | d.f. | s.e.  | cv% |
|----------|------|-------|-----|
| BLOCK.WP | 22   | 0.373 | 5.3 |

GRAIN MEAN DM% 83.9

PLOT AREA HARVESTED 0.00258

87/R/WW/6

WINTER WHEAT

N AND DCD

Object: To study the effects of a nitrification inhibitor in combination with different rates and timings of N on yield - Claycroft.

Sponsors: A. Penny, R.J. Darby, M.V. Hewitt.

Design: 2 randomised blocks of 30 plots.

Whole plot dimensions: 3.0 x 11.0.

Treatments: All combinations of:-

1. N INHIB            Nitrification inhibitor added to nitrogen fertilizer:

|          |  |
|----------|--|
| NONE     | None   |
| DICYANDI | Dicyandiamide at 16 kg, divided equally between applications |

2. N TIME            Time and division of aqueous nitrogen fertilizer:

|         |  |
|---------|--|
| 1 1 1 1 | Quarter of N on each of 25 Feb, 1987, 30 Mar, 21 Apr, 19 May |
| 2 2 - - | Half of N on each of 25 Feb, 30 Mar                          |
| 2 - 2 - | Half of N on each of 25 Feb, 21 Apr                          |
| - 2 2 - | Half of N on each of 30 Mar, 21 Apr                          |
| 4 - - - | All of N on 25 Feb   |
| - - 4 - | All of N on 21 Apr   |

3. N RATE            Amount of nitrogen fertilizer applied (kg N):

|     |     |
|-----|-----|
| 160 | 160 |
| 240 | 240 |

plus extra treatments given no nitrification inhibitor all combinations of:-

1. N TIMENC            Time and division of nitrogen fertilizer as 'Nitro-Chalk':

|         |   |
|---------|---|
| - 2 2 - | Half of N on each of 30 Mar, 1987, 21 Apr |
| - - 4 - | All of N on 21 Apr                        |

2. N RATENC            Amount of nitrogen fertilizer applied (kg N):

|     |     |
|-----|-----|
| 160 | 160 |
| 240 | 240 |

plus one extra treatment

EXTRA

NONE            No nitrogen fertilizer or inhibitor (duplicated)

NOTE: Nitrogen was applied as a mixture of urea and ammonium nitrate (28% N).



87/R/WW/6

Basal applications: Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg in 200 l. Clopyralid at 0.05 kg and bromoxynil at 0.24 kg with mecoprop at 1.8 kg applied with the prochloraz and carbendazim in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg. Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l.

Seed: Avalon, sown at 180 kg.

Cultivations, etc.: - Heavy spring-tine cultivated: 5 Sept, 1986. Paraquat applied: 30 Sept. Disced: 2 Oct. Disced, rotary harrowed: 3 Oct. Seed sown: 4 Oct. Isoproturon applied: 31 Mar, 1987. Clopyralid, bromoxynil, mecoprop, prochloraz and carbendazim applied: 18 Apr. Propiconazole with carbendazim and maneb applied: 23 June. Combine harvested: 31 Aug. Previous crops: S. barley 1985, w. wheat 1986.

NOTE: The crop was sampled in mid-June to measure dry matter, ear numbers and N content. The N content of the grain was determined.

GRAIN TONNES/HECTARE

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

| N INHIB<br>N TIME                     | NONE | DICYANDI | Mean |
|---------------------------------------|------|----------|------|
| 1 1 1 1                               | 5.94 | 6.27     | 6.10 |
| 2 2 - -                               | 5.96 | 6.03     | 6.00 |
| 2 - 2 -                               | 5.88 | 5.96     | 5.92 |
| - 2 2 -                               | 5.91 | 5.94     | 5.92 |
| 4 - - -                               | 5.75 | 6.11     | 5.93 |
| - - 4 -                               | 6.12 | 5.92     | 6.02 |
| Mean                                  | 5.93 | 6.04     | 5.98 |
| N RATE<br>N TIME                      | 160  | 240      | Mean |
| 1 1 1 1                               | 5.84 | 6.37     | 6.10 |
| 2 2 - -                               | 5.72 | 6.27     | 6.00 |
| 2 - 2 -                               | 5.70 | 6.14     | 5.92 |
| - 2 2 -                               | 5.80 | 6.04     | 5.92 |
| 4 - - -                               | 5.75 | 6.11     | 5.93 |
| - - 4 -                               | 5.93 | 6.11     | 6.02 |
| Mean                                  | 5.79 | 6.17     | 5.98 |
| N RATE<br>N INHIB<br>NONE<br>DICYANDI | 160  | 240      | Mean |
| NONE                                  | 5.86 | 5.99     | 5.93 |
| DICYANDI                              | 5.72 | 6.35     | 6.04 |
| Mean                                  | 5.79 | 6.17     | 5.98 |

87/R/WW/6

GRAIN TONNES/HECTARE

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

|            | N INHIB | NONE | 240  | DICYANDI | 240  |
|------------|---------|------|------|----------|------|
| N RATE     |         | 160  |      | 160      |      |
| N TIME     |         |      |      |          |      |
| 1 1 1 1    |         | 5.93 | 5.95 | 5.76     | 6.78 |
| 2 2 - -    |         | 6.02 | 5.90 | 5.42     | 6.63 |
| 2 - 2 -    |         | 5.80 | 5.97 | 5.60     | 6.32 |
| - 2 2 -    |         | 5.67 | 6.15 | 5.94     | 5.94 |
| 4 - - -    |         | 5.58 | 5.92 | 5.92     | 6.30 |
| - - 4 -    |         | 6.17 | 6.08 | 5.69     | 6.15 |
| N RATENC   |         | 160  | 240  | Mean     |      |
| N TIMENC   |         |      |      |          |      |
| - 2 2 -    |         | 6.17 | 6.02 | 6.09     |      |
| - - 4 -    |         | 5.72 | 5.62 | 5.67     |      |
| Mean       |         | 5.95 | 5.82 | 5.88     |      |
| NONE       |         | 2.96 |      |          |      |
| Grand mean |         | 5.77 |      |          |      |

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

|        |          |         |         |         |
|--------|----------|---------|---------|---------|
| Table  | N INHIB  | N TIME  | N RATE  | N TIMEC |
| s.e.d. | 0.136    | 0.236   | 0.136   | 0.334   |
| Table  | N RATENC | N INHIB | N INHIB | N TIME  |
| s.e.d. | 0.334    | N TIME  | N RATE  | N RATE  |
|        |          | 0.334   | 0.193   | 0.334   |
| Table  | N TIMENC | N INHIB |         |         |
| s.e.d. | N RATENC | N TIME  |         |         |
|        |          | N RATE  |         |         |
|        | 0.472    | 0.472   |         |         |

SED of NONE v any item in N TIMEC.N RATENC table or N INHIB.N TIME.N RATE table is 0.409

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

| Stratum             | d.f.    | s.e.  | cv% |
|---------------------|---------|-------|-----|
| BLOCK.WP            | 30      | 0.472 | 8.2 |
| GRAIN MEAN DM%      | 81.5    |       |     |
| PLOT AREA HARVESTED | 0.00253 |       |     |