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Yields of the Field Experiments 1976

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76/R/B/1 Factors Affecting Mildew Control and Yield - Barley

Rothamsted Research

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76/R/B/1

WINTER BARLEY

FACTORS AFFECTING MILDEW CONTROL AND YIELD

Object: To study the effects and interactions of sowing date, seed rate, mildew control and timing of spring nitrogen on the incidence of mildew and yield of winter barley - Gt. Knott 1.

Sponsors: A. Bainbridge, M.E. Finney, J.F. Jenkyn.

Design: Single replicate of 2 x 2 x 2 x 2 x 2 x 2.

Whole plot dimensions: 2.13 x 6.10.

Treatments: All combinations of:-

1. SOW DATE Sowing Dates:

| | |
|---------|--------------|
| 24 SEPT | 24 September |
| 6 NOV | 6 November |

2. SEEDRATE Seed Rates (kg):

| | |
|-----|-----|
| 78 | 78 |
| 156 | 156 |

3. TRIDEMOR(1) Tridemorph foliar spray to early growth:

| | |
|---------|--|
| NONE | None |
| SPRAYED | Sprayed (14 Nov to SOW DATE 24 SEPT, 25 Feb to SOW DATE 6 NOV) |

4. TRIDEMOR(2) Tridemorph foliar spray in April:

| | |
|---------|-----------------|
| NONE | None |
| SPRAYED | Sprayed (9 Apr) |

5. TRIDEMOR(3) Tridemorph foliar spray in May:

| | |
|---------|------------------|
| NONE | None |
| SPRAYED | Sprayed (13 May) |

6. N TIME Time of applying nitrogen (at 75 kg):

| | |
|-------|---------------------|
| MARCH | Early March (9 Mar) |
| APRIL | Late April (27 Apr) |

NOTE: Tridemorph applied at 0.53 kg in 340 l.

Basal applications: Weedkillers: Mecoprop at 1.7 kg in 340 l.

Seed: Astrix.

Cultivations, etc.: - Ploughed: 16 Sept, 1975. Spring-tine cultivated twice: 16, 17 Sept. Rotary harrowed for early sowing: 22 Sept. Power harrowed for late sowing: 6 Nov. Weedkiller applied: 13 Nov. Combine harvested: 8 July, 1976. Previous crops: Winter wheat 1974, beans 1975.

NOTE: Seedling emergence counts were made. Leaf diseases were assessed on six occasions. Ear counts were made in early July.

76/R/B/1

GRAIN TONNES/HECTARE

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

| | | | |
|-------------|------|---------|------|
| SEEDRATE | 78 | 156 | MEAN |
| SOW DATE | | | |
| 24 SEPT | 7.78 | 8.02 | 7.90 |
| 6 NOV | 4.41 | 4.44 | 4.42 |
| MEAN | 6.09 | 6.23 | 6.16 |
| TRIDEMOR(1) | NONE | SPRAYED | MEAN |
| SOW DATE | | | |
| 24 SEPT | 7.66 | 8.14 | 7.90 |
| 6 NOV | 4.27 | 4.57 | 4.42 |
| MEAN | 5.97 | 6.35 | 6.16 |
| TRIDEMOR(1) | NONE | SPRAYED | MEAN |
| SEEDRATE | | | |
| 78 | 5.90 | 6.28 | 6.09 |
| 156 | 6.03 | 6.43 | 6.23 |
| MEAN | 5.97 | 6.35 | 6.16 |
| TRIDEMOR(2) | NONE | SPRAYED | MEAN |
| SOW DATE | | | |
| 24 SEPT | 7.66 | 8.14 | 7.90 |
| 6 NOV | 4.25 | 4.60 | 4.42 |
| MEAN | 5.95 | 6.37 | 6.16 |
| TRIDEMOR(2) | NONE | SPRAYED | MEAN |
| SEEDRATE | | | |
| 78 | 5.98 | 6.20 | 6.09 |
| 156 | 5.93 | 6.54 | 6.23 |
| MEAN | 5.95 | 6.37 | 6.16 |
| TRIDEMOR(2) | NONE | SPRAYED | MEAN |
| TRIDEMOR(1) | | | |
| NONE | 5.78 | 6.15 | 5.97 |
| SPRAYED | 6.12 | 6.59 | 6.35 |
| MEAN | 5.95 | 6.37 | 6.16 |
| TRIDEMOR(3) | NONE | SPRAYED | MEAN |
| SOW DATE | | | |
| 24 SEPT | 7.80 | 8.00 | 7.90 |
| 6 NOV | 4.35 | 4.49 | 4.42 |
| MEAN | 6.08 | 6.24 | 6.16 |
| TRIDEMOR(3) | NONE | SPRAYED | MEAN |
| SEEDRATE | | | |
| 78 | 5.99 | 6.19 | 6.09 |
| 156 | 6.17 | 6.29 | 6.23 |
| MEAN | 6.08 | 6.24 | 6.16 |

76/R/B/1

GRAIN TONNES/HECTARE

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

| | | | |
|-------------|-------|---------|------|
| TRIDEMOR(3) | NONE | SPRAYED | MEAN |
| TRIDEMOR(1) | | | |
| NONE | 5.96 | 5.98 | 5.97 |
| SPRAYED | 6.20 | 6.51 | 6.35 |
| MEAN | 6.08 | 6.24 | 6.16 |
| TRIDEMOR(3) | NONE | SPRAYED | MEAN |
| TRIDEMOR(2) | | | |
| NONE | 5.78 | 6.13 | 5.95 |
| SPRAYED | 6.38 | 6.36 | 6.37 |
| MEAN | 6.08 | 6.24 | 6.16 |
| N TIME | MARCH | APRIL | MEAN |
| SOW DATE | | | |
| 24 SEPT | 7.69 | 8.11 | 7.90 |
| 6 NOV | 4.25 | 4.59 | 4.42 |
| MEAN | 5.97 | 6.35 | 6.16 |
| N TIME | MARCH | APRIL | MEAN |
| SEEDRATE | | | |
| 78 | 5.88 | 6.31 | 6.09 |
| 156 | 6.06 | 6.40 | 6.23 |
| MEAN | 5.97 | 6.35 | 6.16 |
| N TIME | MARCH | APRIL | MEAN |
| TRIDEMOR(1) | | | |
| NONE | 5.78 | 6.16 | 5.97 |
| SPRAYED | 6.16 | 6.54 | 6.35 |
| MEAN | 5.97 | 6.35 | 6.16 |
| N TIME | MARCH | APRIL | MEAN |
| TRIDEMOR(2) | | | |
| NONE | 5.84 | 6.07 | 5.95 |
| SPRAYED | 6.10 | 6.63 | 6.37 |
| MEAN | 5.97 | 6.35 | 6.16 |
| N TIME | MARCH | APRIL | MEAN |
| TRIDEMOR(3) | | | |
| NONE | 5.86 | 6.29 | 6.08 |
| SPRAYED | 6.08 | 6.41 | 6.24 |
| MEAN | 5.97 | 6.35 | 6.16 |

76/R/B/1

GRAIN TONNES/HECTARE

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

| TABLE | SOW DATE | SEEDRATE | TRIDEMOR(1) | TRIDEMOR(2) |
|-------|----------|----------|-------------|-------------|
| SED | 0.124 | 0.124 | 0.124 | 0.124 |

| TABLE | TRIDEMOR(3) | N TIME | SOW DATE SEEDRATE | SOW DATE TRIDEMOR(1) |
|-------|-------------|--------|----------------------|-------------------------|
| SED | 0.124 | 0.124 | 0.175 | 0.175 |

| TABLE | SEEDRATE TRIDEMOR(1) | SOW DATE TRIDEMOR(2) | SEEDRATE TRIDEMOR(2) | TRIDEMOR(1) TRIDEMOR(2) |
|-------|-------------------------|-------------------------|-------------------------|----------------------------|
| SED | 0.175 | 0.175 | 0.175 | 0.175 |

| TABLE | SOW DATE TRIDEMOR(3) | SEEDRATE TRIDEMOR(3) | TRIDEMOR(1) TRIDEMOR(3) | TRIDEMOR(2) TRIDEMOR(3) |
|-------|-------------------------|-------------------------|----------------------------|----------------------------|
| SED | 0.175 | 0.175 | 0.175 | 0.175 |

| TABLE | SOW DATE N TIME | SEEDRATE N TIME | TRIDEMOR(1) N TIME | TRIDEMOR(2) N TIME |
|-------|--------------------|--------------------|-----------------------|-----------------------|
| SED | 0.175 | 0.175 | 0.175 | 0.175 |

| TABLE | TRIDEMOR(3) N TIME |
|-------|-----------------------|
| SED | 0.175 |

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

| STRATUM | DF | SE | CV% |
|---------|----|-------|-----|
| WP | 22 | 0.495 | 8.0 |

GRAIN MEAN DM% 89.0

PLOT AREA HARVESTED 0.00130