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86/R/M/1 and 86/W/M/1 Triticale and Disease - Mixed 1

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86/R/M/1 and 86/W/M/1

MIXED 1

TRITICALE AND DISEASE

Object: To compare amounts of disease and the yield of triticale with those of w. wheat, w. barley and w. rye on two contrasted sites each given contrasted amounts of agrochemicals - Rothamsted Pastures (R), Woburn White Horse (W).

Sponsors: R.J. Gutteridge, D. Hornby, R.D. Prew (R), P.R. Scott, W. Hollins, R.L. Gregory (P.B.I., Cambridge).

Design: 3 randomised blocks of 10 plots.

Whole plot dimensions: 3.0 x 10.0 (R), 4.0 x 10.0 (W).

Treatments: All combinations of :-

| 1. CROP VAR | Crop and variety: | (R) | (W) |
|-------------|---|---------|--------|
| B PANDA | W. barley, Panda sown at | 190 kg, | 190 kg |
| R DOMINT | W. rye, Dominant sown at | 130 kg, | 210 kg |
| T LASKO | W. triticale, Lasko sown at | 155 kg, | 170 kg |
| T CWT | W. triticale, CWT/1977/290 sown at | 130 kg, | 170 kg |
| W AVALON | W. wheat, Avalon sown at | 190 kg, | 190 kg |
| | | | |
| 2. INPUT | Inputs of agrochemicals, in addition to basals: | | |
| LARGE | (R): Manures: N at 40 kg: 13 Mar, 1986, and at 160 kg: 21 Apr, both as 'Nitram'. Fungicides: Prochloraz at 0.37 kg with carbendazim at 0.14 kg and tridemorph at 0.52 kg in 220 l: 2 Apr. Fenpropimorph at 0.75 kg with chlorothalonil at 1.0 kg in 220 l: 5 June. Growth regulators: Chlormequat chloride at 1.1 kg in 220 l to w. wheat only: 16 May. Mepiquat chloride at 0.46 kg with 2-chloroethylphosphonic acid at 0.23 kg with a wetting agent ('Agral' at 0.080 l) in 220 l to w. barley and triticale only: 30 May. | | |
| | (W): Manures: N at 40 kg: 12 Mar, 1986, and at 160 kg: 21 Apr, both as 'Nitram'. Fungicides: Prochloraz at 0.40 kg with carbendazim at 0.15 kg and tridemorph at 0.56 kg in 250 l: 29 Apr. Propiconazole at 0.12 kg with tridemorph at 0.52 kg in 250 l: 30 May. Propiconazole at 0.12 kg with carbendazim at 0.15 kg in 250 l: 16 June. Growth regulators: Mepiquat chloride at 0.38 kg with 2-chloroethylphosphonic acid at 0.19 kg with a wetting agent ('Citowett' at 0.10 l) in 250 l to rye only: 23 May. Mepiquat chloride at 0.61 kg with 2-chloroethylphosphonic acid at 0.31 kg with a wetting agent ('Citowett' at 0.10 l) in 250 l to w. barley and triticale only: 23 May. Chlormequat at 1.6 kg with a wetting agent ('Agral' at 0.28 l) in 250 l to w. wheat only: 23 May. | | |
| SMALL | (R) and (W): Manures: 120 kg N as 'Nitram': 21 Apr, 1986. | | |

86/R/M/1 and 86/W/M/1

Basal applications:

Pastures (R): Manures: (0:18:36) at 690 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l, dicamba with mecoprop and MCPA (as 'Herrisol' at 5.0 l) in 200 l.

White Horse (W): Manures: (0:18:36) at 690 kg. Weedkillers: Paraquat at 0.40 kg ion in 250 l, dicamba with mecoprop and MCPA (as 'Herrisol' at 5.0 l) in 250 l to all plots except rye.

Cultivations, etc.:-

Pastures (R): Heavy spring-tine cultivated twice: 11 Sept, 1985, 19 Sept. PK applied: 20 Sept. Paraquat applied: 12 Oct. Rotary harrowed, seeds sown: 15 Oct. Rolled: 22 Oct. 'Herrisol' applied: 2 May, 1986. Combine harvested: W. barley: 12 Aug; w. wheat: 30 Aug; rye and triticale: 10 Sept. Previous crops: W. wheat 1984, 1985.

White Horse (W): PK applied: 5 Sept, 1985. Paraquat applied: 11 Sept. Ploughed: 16 Sept. Rolled: 4 Oct. Rotary harrowed, seeds sown: 14 Oct. 'Herrisol' applied: 6 May, 1986. Combine harvested: W. barley: 6 Aug; w. wheat: 21 Aug; rye: 29 Aug; triticale: 7 Sept. Previous crops: S. barley 1984, w. barley 1985.

- NOTE: (1) Soil samples were taken for take-all bioassay before sowing and after harvest.
 (2) Assessments were made of foot and root rots and foliar diseases during the season.

86/R/M/1 PASTURES (R)

GRAIN TONNES/HECTARE

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

| INPUT | LARGE | SMALL | MEAN |
|----------|-------|-------|------|
| CROP VAR | | | |
| B PANDA | 8.37 | 7.12 | 7.75 |
| R DOMINT | 7.81 | 7.03 | 7.42 |
| T LASKO | 8.54 | 7.88 | 8.21 |
| T CWT | 7.48 | 6.53 | 7.00 |
| W AVALON | 7.64 | 6.63 | 7.13 |
| MEAN | 7.97 | 7.04 | 7.50 |

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

| TABLE | CROP VAR | INPUT | CROP VAR INPUT |
|-------|----------|-------|-------------------|
| SED | 0.249 | 0.157 | 0.352 |

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

| STRATUM | DF | SE | CV% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 18 | 0.431 | 5.7 |
| GRAIN MEAN DM% | 83.6 | | |
| PLOT AREA HARVESTED | 0.00276 | | |

86/W/M/1 WHITE HORSE (W)

GRAIN TONNES/HECTARE

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

| INPUT | LARGE | SMALL | MEAN |
|----------|-------|-------|------|
| CROP VAR | | | |
| B PANDA | 5.06 | 3.69 | 4.38 |
| R DOMINT | 7.08 | 6.58 | 6.83 |
| T LASKO | 7.46 | 7.38 | 7.42 |
| T CWT | 5.50 | 5.80 | 5.65 |
| W AVALON | 6.52 | 3.83 | 5.18 |
| MEAN | 6.32 | 5.46 | 5.89 |

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

| TABLE | CROP VAR | INPUT | CROP VAR INPUT |
|-------|----------|-------|-------------------|
| ----- | ----- | ----- | ----- |
| SED | 0.404 | 0.255 | 0.571 |

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|------|
| BLOCK.WP | 18 | 0.699 | 11.9 |

GRAIN MEAN DM% 83.3

PLOT AREA HARVESTED 0.00275