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85/R/WW/1 and 85/W/WW/1 Varieties - W. Wheat

Rothamsted Research

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85/R/WW/1 and 85/W/WW/1

WINTER WHEAT

VARIETIES

Object: To study a selection of newer varieties of w. wheat and the effects of growth regulator on them on land in rotation (pathogen free) and after wheat (pathogen infected) - Rothamsted Sawyers I (pathogen free RH) and Fosters West (pathogen infected RD), Woburn Horsepool Lane Close (pathogen free WH).

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

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

Sub plot dimensions: (RH, RD) 3.0 x 12.0, (WH) 4.0 x 12.0.

Treatments: All combinations of:-

Whole plots

1. INSCTCDE Insecticide:
NONE None
PIRIMICA Pirimicarb at 0.14 kg in 250 l

Sub plots

2. VARIETY Varieties:
AVALON Avalon (on RH and WH only, duplicated on RH)
AVALON A Avalon (grown after Avalon, RD only)
AVALON N Avalon (grown after Norman, RD only)
BOXER Boxer
BRIMSTON Brimstone
BROCK Brock
GALAHAD Galahad
GAWAIN Gawain
LONGBOW Longbow
MOULIN Moulin
NORMAN Norman (on RH and WH only, duplicated on RH)
NORMAN A Norman (grown after Avalon, RD only)
NORMAN N Norman (grown after Norman, RD only)
RAPIER Rapier
RENARD Renard

Basal applications:

Sawyers I (RH): Manures: N at 190 kg as 'Nitro-Chalk' (27.5% N)).
Weedkillers: Mecoprop at 1.6 kg with bromoxynil at 0.20 kg and ioxynil at 0.20 kg and isoproturon at 2.0 kg in 200 l.
Fungicides: Captafol at 0.96 kg with fenpropimorph at 0.75 kg and carbendazim at 0.15 kg in 200 l. Insecticide: Pirimicarb at 0.14 kg in 500 l.

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Fosters West (RD): Manures: K at 250 kg as muriate of potash. N at 190 kg as 'Nitro-Chalk' (27.5% N). Weedkillers: Isoproturon at 2.0 kg. Clopyralid at 0.07 kg with bromoxynil at 0.34 kg and mecoprop at 2.5 kg applied with the prochloraz and carbendazim in 200 l. Fungicides: Prochloraz at 0.40 kg with carbendazim at 0.15 kg. Propiconazole on two occasions, on the first occasion at 0.25 kg in 200 l on the second occasion at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg) in 200 l. Insecticide: Pirimicarb at 0.14 kg in 500 l.

Horsepool Lane Close (WH): Manures: N on two occasions at 40 kg and 90 kg as 'Nitro-Chalk' (27.5% N). Weedkillers: Mecoprop at 2.0 kg with bromoxynil at 0.25 kg and ioxynil at 0.25 kg in 250 l. Fungicides: Propiconazole on two occasions, on the first occasion at 0.25 kg with tridemorph at 0.19 kg in 250 l, on the second occasion at 0.12 kg with tridemorph at 0.19 kg and with carbendazim and maneb (as 'Septal' at 2.5 kg) in 250 l. Insecticide: Pirimicarb at 0.14 kg in 250 l.

Seed: Sawyers I (RH), Fosters West (RD): Varieties sown at 180 kg.
Horsepool Lane Close (WH): Varieties sown at 190 kg.

Cultivations, etc.:-

Sawyers I (RH): Ploughed: 3 Oct, 1984. Spring-tine cultivated, rotary harrowed, seed sown: 16 Oct. Weedkillers applied: 10 Apr, 1985. N applied: 12 Apr. Fungicides applied: 28 June. Insecticide applied: 8 July. Combine harvested: 2 Sept. Previous crops: S. barley 1983, s. beans 1984.

Fosters West (RD): K applied: 24 Sept, 1984. Ploughed: 25 Sept. Spring-tine cultivated, rotary harrowed, seed sown: 16 Oct. Weedkillers with prochloraz and carbendazim applied: 10 Apr, 1985. N applied: 12 Apr. Propiconazole applied: 3 June. Propiconazole with 'Septal' applied: 2 July. Insecticide applied: 8 July. Combine harvested: 31 Aug. Previous crops: W. beans 1983, w. wheat 1984.

Horsepool Lane Close (WH): Rotary cultivated with tine attachment: 1 Nov, 1984. Power harrowed, seed sown: 2 Nov. N applied: 12 Mar 1985, 18 Apr. Weedkillers applied: 18 Apr. Propiconazole and tridemorph applied: 15 June. Propiconazole with tridemorph and 'Septal' applied: 2 July. Insecticide applied: 10 July. Combine harvested: 9 Sept. Previous crops: W. oats 1983, potatoes 1984.

NOTE: Take-all was assessed on Fosters West (RD).

85/R/WW/1

SAWYERS I HEALTHY SITE

GRAIN TONNES/HECTARE

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

| INSCTCDE | NONE | PIRIMICA | MEAN |
|----------|-------|----------|-------|
| VARIETY | | | |
| AVALON | 9.00 | 9.26 | 9.13 |
| BOXER | 9.99 | 9.97 | 9.98 |
| BRIMSTON | 8.55 | 9.07 | 8.81 |
| BROCK | 9.92 | 10.39 | 10.16 |
| GALAHAD | 10.10 | 10.34 | 10.22 |
| GAWAIN | 9.65 | 10.06 | 9.85 |
| LONGBOW | 8.41 | 8.90 | 8.65 |
| MOULIN | 7.94 | 8.14 | 8.04 |
| NORMAN | 8.53 | 8.74 | 8.64 |
| RAPIER | 9.49 | 9.89 | 9.69 |
| RENARD | 9.64 | 10.17 | 9.91 |
| MEAN | 9.20 | 9.54 | 9.37 |

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

| TABLE | VARIETY | INSCTCDE* | |
|-------|---------|-----------|---------|
| | | VARIETY | |
| ----- | | | |
| SED | 0.218 | 0.309 | MIN REP |
| | 0.189 | 0.268 | MAX-MIN |
| | 0.154 | 0.218 | MAX REP |

* WITHIN THE SAME LEVEL OF INSCTCDE ONLY

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

| STRATUM | DF | SE | CV% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 28 | 0.309 | 3.3 |
| GRAIN MEAN DM% | 83.6 | | |
| PLOT AREA HARVESTED | 0.00245 | | |

85/R/WW/1

FOSTERS WEST DISEASED SITE

GRAIN TONNES/HECTARE

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

| INSCTCDE | NONE | PIRIMICA | MEAN |
|----------|-------|----------|-------|
| VARIETY | | | |
| AVALON A | 8.92 | 8.81 | 8.86 |
| AVALON N | 9.04 | 9.22 | 9.13 |
| BOXER | 9.22 | 8.51 | 8.87 |
| BRIMSTON | 8.99 | 10.02 | 9.51 |
| BROCK | 9.13 | 9.05 | 9.09 |
| GALAHAD | 9.40 | 10.44 | 9.92 |
| GAWAIN | 9.86 | 10.55 | 10.21 |
| LONGBOW | 9.94 | 10.30 | 10.12 |
| MOULIN | 7.51 | 7.57 | 7.54 |
| NORMAN A | 9.65 | 10.08 | 9.87 |
| NORMAN N | 10.18 | 10.16 | 10.17 |
| RAPIER | 9.61 | 9.88 | 9.75 |
| RENARD | 9.36 | 8.59 | 8.97 |
| MEAN | 9.29 | 9.47 | 9.38 |

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

| TABLE | VARIETY | INSCTCDE* VARIETY |
|-------|---------|----------------------|
| ----- | ----- | ----- |
| SED | 0.342 | 0.483 |

* WITHIN THE SAME LEVEL OF INSCTCDE ONLY

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 24 | 0.483 | 5.1 |

GRAIN MEAN DM% 83.0

PLOT AREA HARVESTED 0.00245

85/W/WW/1

HORSEPOOL LANE CLOSE (W)

GRAIN TONNES/HECTARE

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

| INSC TCDE | NONE | PIRIMICA | MEAN |
|-----------|-------|----------|-------|
| VARIETY | | | |
| AVALON | 9.55 | 9.12 | 9.34 |
| BOXER | 9.78 | 9.31 | 9.55 |
| BRIMSTON | 8.66 | 8.48 | 8.57 |
| BROCK | 9.99 | 10.10 | 10.04 |
| GALAHAD | 9.78 | 9.69 | 9.74 |
| GAWAIN | 8.75 | 8.93 | 8.84 |
| LONGBOW | 10.07 | 9.69 | 9.88 |
| MOULIN | 7.28 | 6.88 | 7.08 |
| NORMAN | 10.40 | 10.31 | 10.36 |
| RAPIER | 8.95 | 9.01 | 8.98 |
| RENARD | 10.24 | 10.09 | 10.17 |
| MEAN | 9.41 | 9.24 | 9.32 |

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

| TABLE | VARIETY | INSC TCDE* VARIETY |
|-------|---------|-----------------------|
| ----- | ----- | ----- |
| SED | 0.233 | 0.330 |

* WITHIN THE SAME LEVEL OF INSC TCDE ONLY

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

| STRATUM | DF | SE | CV% |
|---------------------|---------|-------|-----|
| BLOCK.WP | 20 | 0.330 | 3.5 |
| GRAIN MEAN DM% | 81.8 | | |
| PLOT AREA HARVESTED | 0.00330 | | |