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Yields of the Field Experiments 1987

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87/R/RA/6 Straw Treatments Before Sowing - W. Oilseed Rape

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87/R/RA/6

WINTER OILSEED RAPE

STRAW TREATMENTS BEFORE SOWING

Object: To study the effects of a range of methods of treating cereal straw on the establishment and yield of w. oilseed rape sown on two dates, with and without seedbed N - Great Knott II.

Sponsors: R.J. Darby, D.P Yeoman.

Design: 2 randomised blocks of 6 plots split into 2 sub plots each split into 2 sub sub plots.

Whole plot dimensions: 6.0 x 33.0.

Treatments: All combinations of:-

Whole plots

- | | |
|-------------|------------------------------------|
| 1. STR DISP | Disposal of straw: |
| BURN | Burnt on 13 Aug, 1986 |
| CHOP | Chopped on 8 Aug |
| BALE | Baled on 7 Aug |
| 2. CULTIVTN | Method of primary cultivation: |
| TINE CULT | Tine cultivated, without inversion |
| PLOUGH | Ploughed on 15 Aug, 1986 |

Sub plots

- | | |
|-------------|------------------|
| 3. SOW DATE | Dates of sowing: |
| 20 AUG | 20 Aug, 1986 |
| 5 SEPT | 5 Sept |

Sub sub plots

- | | |
|------------|------------------------------------------------------|
| 4. SDBED N | Seedbed nitrogen (kg N) as 'Nitram' on 18 Aug, 1986: |
| 0 | |
| 50 | |

- NOTES: (1) All plots were disced and rotary harrowed on 18 Aug, 1986.
(2) STR DISP BURN plots were spring-tine cultivated on 14 Aug.
(3) CULTIVTN TINE CULT plots were heavy spring-tine cultivated on 18 Aug, and except for STR DISP BURN plots were also rotary cultivated the same day.
(4) CULTIVTN PLOUGH plots were rolled immediately after ploughing.
(5) All plots were harrowed immediately after sowing. All SOW DATE 5 SEPT plots were rolled immediately after harrowing.

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Basal applications: Manures: 'Nitram' at 580 kg. Weedkillers: Clopyralid and propyzamide (as 'Matrikerb' at 1.6 kg) in 500 l. Metazachlor at 0.75 kg in 280 l. Molluscicide: Methiocarb at 0.22 kg. Bird repellent: 'Hoppit' at 3.0 l in 500 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Agral' at 0.50 l) in 500 l.

Seed: Bienvenu, dressed gamma HCH, thiram and fenpropimorph, sown at 8.0 kg.

Cultivations, etc.:— Molluscicide applied to all plots, metazachlor applied to SOWDATE 20 AUG only: 20 Aug, 1986. Metazachlor applied to SOWDATE 5 SEPT: 6 Sept. Remaining weedkillers applied: 20 Nov. Bird repellent applied: 24 Dec. N applied: 18 Feb, 1987. Desiccant with wetting agent applied: 30 July. Combine harvested: 5 Aug. Previous crops: S. wheat 1985, w. barley 1986.

NOTE: Emergence counts were made in autumn and plant counts in mid-March.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

| CULTIVTN | TINE CLT | PLOUGH | Mean |
|----------|----------|--------|------|
| STR DISP | | | |
| BURN | 3.84 | 3.78 | 3.81 |
| CHOP | 3.48 | 3.74 | 3.61 |
| BALED | 3.67 | 3.63 | 3.65 |
| Mean | 3.66 | 3.72 | 3.69 |
| SOW DATE | 20 AUG | 5 SEPT | Mean |
| STR DISP | | | |
| BURN | 3.83 | 3.79 | 3.81 |
| CHOP | 3.79 | 3.43 | 3.61 |
| BALED | 3.86 | 3.44 | 3.65 |
| Mean | 3.82 | 3.55 | 3.69 |
| SOW DATE | 20 AUG | 5 SEPT | Mean |
| CULTIVTN | | | |
| TINE CLT | 3.82 | 3.51 | 3.66 |
| PLOUGH | 3.83 | 3.60 | 3.72 |
| Mean | 3.82 | 3.55 | 3.69 |
| SDBED N | 0 | 50 | Mean |
| STR DISP | | | |
| BURN | 3.67 | 3.95 | 3.81 |
| CHOP | 3.56 | 3.66 | 3.61 |
| BALED | 3.52 | 3.77 | 3.65 |
| Mean | 3.58 | 3.79 | 3.69 |

87/R/RA/6

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

| | | | |
|----------|----------|--------|--------|
| SDBED N | 0 | 50 | Mean |
| CULTIVTN | | | |
| TINE CLT | 3.52 | 3.81 | 3.66 |
| PLOUGH | 3.65 | 3.78 | 3.72 |
| Mean | 3.58 | 3.79 | 3.69 |
| SDBED N | 0 | 50 | Mean |
| SOW DATE | | | |
| 20 AUG | 3.72 | 3.93 | 3.82 |
| 5 SEPT | 3.45 | 3.66 | 3.55 |
| Mean | 3.58 | 3.79 | 3.69 |
| STR DISP | SOW DATE | 20 AUG | 5 SEPT |
| BURN | CULTIVTN | | |
| | TINE CLT | 3.84 | 3.84 |
| | PLOUGH | 3.82 | 3.74 |
| CHOP | TINE CLT | 3.66 | 3.30 |
| | PLOUGH | 3.92 | 3.56 |
| BALED | TINE CLT | 3.95 | 3.38 |
| | PLOUGH | 3.76 | 3.50 |
| STR DISP | SDBED N | 0 | 50 |
| BURN | CULTIVTN | | |
| | TINE CLT | 3.66 | 4.02 |
| | PLOUGH | 3.68 | 3.88 |
| CHOP | TINE CLT | 3.43 | 3.53 |
| | PLOUGH | 3.69 | 3.79 |
| BALED | TINE CLT | 3.46 | 3.87 |
| | PLOUGH | 3.59 | 3.67 |
| STR DISP | SDBED N | 0 | 50 |
| BURN | SOW DATE | | |
| | 20 AUG | 3.61 | 4.04 |
| | 5 SEPT | 3.73 | 3.86 |
| CHOP | 20 AUG | 3.83 | 3.75 |
| | 5 SEPT | 3.29 | 3.57 |
| BALED | 20 AUG | 3.73 | 3.99 |
| | 5 SEPT | 3.32 | 3.56 |
| CULTIVTN | SDBED N | 0 | 50 |
| TINE CLT | SOW DATE | | |
| | 20 AUG | 3.66 | 3.97 |
| | 5 SEPT | 3.37 | 3.64 |
| PLOUGH | 20 AUG | 3.78 | 3.88 |
| | 5 SEPT | 3.52 | 3.68 |

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

| | SOW DATE | 20 AUG | 5 SEPT | |
|---------------------------|----------|--------|--------|-----------|
| STR DISP CULTIVTN SDBED N | | 0 | 50 | 0 50 |
| BURN TINE CLT | | 3.55 | 4.12 | 3.76 3.92 |
| PLOUGH | | 3.66 | 3.97 | 3.69 3.79 |
| CHOP TINE CLT | | 3.69 | 3.64 | 3.17 3.43 |
| PLOUGH | | 3.96 | 3.87 | 3.42 3.71 |
| BALED TINE CLT | | 3.74 | 4.17 | 3.19 3.58 |
| PLOUGH | | 3.72 | 3.81 | 3.46 3.54 |

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

| Table | STR DISP | CULTIVTN | SOW DATE | SDBED N |
|--------|----------|----------|----------|---------|
| s.e.d. | 0.158 | 0.129 | 0.043 | 0.055 |

| Table | STR DISP CULTIVTN | STR DISP SOW DATE | CULTIVTN SOW DATE | STR DISP SDBED N |
|-------------------------------------------------------|----------------------|----------------------|----------------------|---------------------|
| s.e.d. | 0.223 | 0.166 | 0.136 | 0.172 |
| Except when comparing means with the same level(s) of | | | | |
| STR DISP | | 0.075 | | 0.096 |
| CULTIVTN | | | 0.061 | |

| Table | CULTIVTN SDBED N | SOW DATE SDBED N | STR DISP CULTIVTN SOW DATE | STR DISP CULTIVTN SDBED N |
|-------------------------------------------------------|---------------------|---------------------|----------------------------------|---------------------------------|
| s.e.d. | 0.140 | 0.070 | 0.235 | 0.243 |
| Except when comparing means with the same level(s) of | | | | |
| CULTIVTN | 0.078 | | | |
| SOW DATE | | 0.078 | | |
| STR DISP.CULTIVTN | | | 0.106 | 0.135 |

| Table | STR DISP SOW DATE SDBED N | CULTIVTN SOW DATE SDBED N | STR DISP CULTIVTN SOW DATE SDBED N |
|-------------------------------------------------------|---------------------------------|---------------------------------|---------------------------------------------|
| s.e.d. | 0.192 | 0.157 | 0.271 |
| Except when comparing means with the same level(s) of | | | |
| STR DISP | 0.122 | | |
| CULTIVTN | | 0.099 | |
| STR DISP.CULTIVTN | | | 0.172 |
| STR DISP.SOW DATE | 0.135 | | |
| CULTIVTN.SOW DATE | | 0.111 | |
| STR DISP.SDBED N | 0.122 | | |
| CULTIVTN.SDBED N | | 0.099 | |
| STR DISP.CULTIVTN.SOW DATE | | | 0.192 |
| STR DISP.CULTIVTN.SDBED N | | | 0.172 |

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

| Stratum | d.f. | s.e. | cv% |
|-----------------|------|-------|-----|
| BLOCK.WP | 5 | 0.223 | 6.0 |
| BLOCK.WP.SP | 6 | 0.106 | 2.9 |
| BLOCK.WP.SP.SSP | 12 | 0.192 | 5.2 |

GRAIN MEAN DM% 86.7 SUB PLOT AREA HARVESTED 0.00368