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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

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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
CHOP	PLOUGH	3.82	3.74
	TINE CLT	3.66	3.30
BALED	PLOUGH	3.92	3.56
	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
CHOP	PLOUGH	3.68	3.88
	TINE CLT	3.43	3.53
BALED	PLOUGH	3.69	3.79
	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
CHOP	5 SEPT	3.73	3.86
	20 AUG	3.83	3.75
BALED	5 SEPT	3.29	3.57
	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
PLOUGH	5 SEPT	3.37	3.64
	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	STR DISP	CULTIVTN	STR DISP
	CULTIVTN	SOW DATE	SOW DATE	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	SOW DATE	STR DISP	STR DISP
	SDBED N	SDBED N	CULTIVTN	CULTIVTN
			SOW DATE	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	CULTIVTN	STR DISP
	SOW DATE	SOW DATE	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