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89/R/RA/4 Straw Treatment Before Sowing - W. Oilseed Rape

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89/R/RA/4

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 - Appletree.

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

Design: 3 randomised blocks of 6 plots split into 2 sub plots each split into 2 sub sub plots.

Whole plot dimensions: 6.0 x 31.0.

Treatments: All combinations of:-

Whole plots

- | | |
|-------------|---|
| 1. STR DISP | Disposal of straw: |
| BURN | Burnt 17 Aug, 1988 |
| CHOP | Chopped 17 Aug |
| BALE | Baled 9 Aug and bales removed |
| 2. CULTIVTN | Method of primary cultivation, on 19 Aug, 1988: |
| TINE CULT | Tine cultivated, without inversion |
| PLOUGH | Ploughed |

Sub plots

- | | |
|-------------|------------------|
| 3. SOW DATE | Dates of sowing: |
| 25 AUG | 25 Aug, 1988 |
| 8 SEPT | 8 Sept |

Sub sub plots

- | | |
|------------|--|
| 4. SDBED N | Seedbed nitrogen (kg N) as 'Nitram' on 23 Aug, 1988: |
| 0 | |
| 50 | |

NOTES: (1) All plots were rotary cultivated on 22 Aug, 1988.
(2) CULTIVTN TINE CULT plots were cultivated twice by rotary grubber and CULTIVTN PLOUGH plots once on 24 Aug.
(3) All plots were rotary harrowed and harrowed before drilling. All plots were harrowed in and rolled after drilling.

Basal applications: Manure: 'Nitram' at 440 kg. Weedkillers: Metazachlor at 1.2 kg with fluazifop-p-butyl at 0.19 kg and a wetting agent ('Enhance' at 0.26 l) in 260 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Agral' at 0.50 l) in 500 l.

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

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Cultivations, etc.:- Weedkillers with wetting agent applied: 30 Sept, 1988. Basal N applied: 14 Feb, 1989. Desiccant with wetting agent applied: 11 July. Combine harvested: 17 July. Previous crops: W. wheat 1987, w. barley 1988.

NOTE: Emergence counts were made in autumn and plant counts in early March. Percentages of oil in the grain were measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

CULTIVTN	TINE	CULT	PLOUGH	Mean
STR DISP				
BURN		1.84	2.16	2.00
CHOP		1.56	2.23	1.90
BALE		2.32	2.39	2.36
Mean		1.91	2.26	2.08
SOW DATE 25 AUG 8 SEPT Mean				
STR DISP				
BURN		1.75	2.24	2.00
CHOP		1.77	2.02	1.90
BALE		2.16	2.55	2.36
Mean		1.90	2.27	2.08
SOW DATE 25 AUG 8 SEPT Mean				
CULTIVTN				
TINE	CULT	1.91	1.91	1.91
	PLOUGH	1.89	2.63	2.26
Mean		1.90	2.27	2.08
SDBED N 0 50 Mean				
STR DISP				
BURN		1.86	2.13	2.00
CHOP		1.83	1.97	1.90
BALE		2.27	2.44	2.36
Mean		1.99	2.18	2.08
SDBED N 0 50 Mean				
CULTIVTN				
TINE	CULT	1.83	1.99	1.91
	PLOUGH	2.15	2.37	2.26
Mean		1.99	2.18	2.08
SDBED N 0 50 Mean				
SOW DATE				
	25 AUG	1.78	2.01	1.90
	8 SEPT	2.19	2.35	2.27
Mean		1.99	2.18	2.08

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

	SOW DATE	25 AUG	8 SEPT	
STR DISP	CULTIVTN			
BURN	TINE CULT	1.73	1.94	
	PLOUGH	1.76	2.55	
CHOP	TINE CULT	1.66	1.47	
	PLOUGH	1.89	2.57	
BALE	TINE CULT	2.32	2.32	
	PLOUGH	2.01	2.78	
	SDBED N	0	50	
STR DISP	CULTIVTN			
BURN	TINE CULT	1.68	1.99	
	PLOUGH	2.04	2.27	
CHOP	TINE CULT	1.53	1.60	
	PLOUGH	2.13	2.34	
BALE	TINE CULT	2.27	2.37	
	PLOUGH	2.27	2.52	
	SDBED N	0	50	
STR DISP	SOW DATE			
BURN	25 AUG	1.70	1.80	
	8 SEPT	2.02	2.46	
CHOP	25 AUG	1.57	1.98	
	8 SEPT	2.08	1.95	
BALE	25 AUG	2.07	2.26	
	8 SEPT	2.47	2.63	
	SDBED N	0	50	
CULTIVTN	SOW DATE			
TINE CULT	25 AUG	1.76	2.05	
	8 SEPT	1.89	1.92	
PLOUGH	25 AUG	1.80	1.97	
	8 SEPT	2.49	2.77	
	SDBED N	0	50	
STR DISP	CULTIVTN	SOW DATE		
BURN	TINE CULT	25 AUG	1.58	1.88
		8 SEPT	1.77	2.10
	PLOUGH	25 AUG	1.82	1.71
		8 SEPT	2.27	2.83
CHOP	TINE CULT	25 AUG	1.44	1.88
		8 SEPT	1.61	1.32
	PLOUGH	25 AUG	1.70	2.09
		8 SEPT	2.56	2.58
BALE	TINE CULT	25 AUG	2.25	2.40
		8 SEPT	2.29	2.34
	PLOUGH	25 AUG	1.88	2.13
		8 SEPT	2.65	2.91

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

	STR DISP	CULTIVTN	SOW DATE	SDBED N
	0.216	0.176	0.072	0.071
	STR DISP	STR DISP	CULTIVTN	STR DISP
	CULTIVTN	SOW DATE	SOW DATE	SDBED N
	0.306	0.234	0.191	0.233
Except when comparing means with the same level(s) of				
STR DISP		0.125		0.122
CULTIVTN			0.102	
	CULTIVTN	SOW DATE	STR DISP	STR DISP
	SDBED N	SDBED N	CULTIVTN	CULTIVTN
			SOW DATE	SDBED N
	0.190	0.101	0.330	0.329
Except when comparing means with the same level(s) of				
CULTIVTN	0.100			
SOW DATE		0.100		
STR DISP.CULTIVTN			0.177	0.173
	STR DISP	CULTIVTN	STR DISP	
	SOW DATE	SOW DATE	CULTIVTN	
	SDBED N	SDBED N	SOW DATE	
			SDBED N	
	0.264	0.215	0.373	
Except when comparing means with the same level(s) of				
STR DISP	0.175			
CULTIVTN		0.143		
STR DISP.CULTIVTN			0.248	
STR DISP.SOW DATE	0.173			
CULTIVTN.SOW DATE		0.141		
STR DISP.CULTIVTN.SDBED N			0.244	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.374	18.0
BLOCK.WP.SP	12	0.217	10.4
BLOCK.WP.SP.SSP	24	0.299	14.4

GRAIN MEAN DM% 72.7

PLOT AREA HARVESTED 0.00345