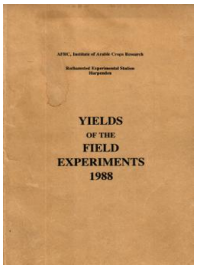
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1988

Full Table of Content



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

Rothamsted Research

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88/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 - Whittlocks.

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 31.0.

Treatments: All combinations of:-

Whole plots

1. **STR DISP** Disposal of straw:

BURN	Burnt 14 Aug, 1987
CHOP	Chopped 18 Aug
BALE	Baled 14 Aug and bales removed

2. **CULTIVTN** Method of primary cultivation:

TINE CULT	Tine cultivated, without inversion
PLOUGH	Ploughed 18 Aug, 1987

Sub plots

3. **SOW DATE** Dates of sowing:

20 AUG	20 Aug, 1987
11 SEPT	11 Sept

Sub sub plots

4. **SDBED N** Seedbed nitrogen (kg N) as 'Nitram' on 19 Aug, 1987:

0
50

NOTES: (1) All plots were rotary harrowed on 19 Aug, 1987.
(2) **STR DISP** BURN plots were disced on 15 Aug.
(3) **CULTIVTN** TINE CULT plots were cultivated by rotary grubber and **CULTIVTN** PLOUGH plots were disced on 19 Aug.
(4) All plots were harrowed before drilling. **SOW DATE** 11 SEPT plots were also rotary harrowed before drilling. All plots were harrowed in and rolled after drilling.
(5) **SOW DATE** 20 AUG plots were sprayed with metazachlor at 0.75 kg in 380 l on 21 Aug, 1987 and at 0.50 kg in 200 l on 1 Oct. **SOW DATE** 11 SEPT plots received metazachlor at 1.2 kg in 200 l on 1 Oct.

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Basal applications: Manures: 'Nitram' at 580 kg. Weedkiller: TCA at 16 kg in 200 l. Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Enhance' at 0.50 l) in 520 l.

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

Cultivations, etc.:- Weedkiller applied: 20 Aug, 1987. N applied: 18 Feb, 1988. Desiccant with wetting agent applied: 20 July. Combine harvested: 26 July. Previous crops: W. wheat 1986, w. barley 1987.

NOTE: Emergence counts were made in autumn and plant counts in mid-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	3.05	3.20	3.12
CHOP	3.35	3.16	3.25
BALE	3.19	3.33	3.26
Mean	3.20	3.23	3.21

SOW DATE	20 AUG	11 SEPT	Mean
STR DISP			
BURN	2.79	3.45	3.12
CHOP	2.77	3.74	3.25
BALE	2.77	3.76	3.26
Mean	2.78	3.65	3.21

SOW DATE	20 AUG	11 SEPT	Mean
CULTIVTN			
TINE CULT	2.74	3.65	3.20
PLOUGH	2.82	3.64	3.23
Mean	2.78	3.65	3.21

SDBED N	0	50	Mean
STR DISP			
BURN	3.19	3.06	3.12
CHOP	3.35	3.16	3.25
BALE	3.25	3.28	3.26
Mean	3.26	3.16	3.21

SDBED N	0	50	Mean
CULTIVTN			
TINE CULT	3.21	3.18	3.20
PLOUGH	3.31	3.14	3.23
Mean	3.26	3.16	3.21

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88/R/RA/6

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SDBED N	0	50	Mean
SOW DATE			
20 AUG	2.84	2.72	2.78
11 SEPT	3.69	3.61	3.65
Mean	3.26	3.16	3.21

	CULTIVTN	TINE CULT		PLOUGH	
STR DISP	SOW DATE	20 AUG	11 SEPT	20 AUG	11 SEPT
BURN		3.03	3.06	2.55	3.84
CHOP		2.53	4.17	3.01	3.31
BALE		2.66	3.73	2.88	3.78

	CULTIVTN	TINE CULT		PLOUGH	
STR DISP	SDBED N	0	50	0	50
BURN		3.13	2.96	3.25	3.15
CHOP		3.52	3.18	3.18	3.13
BALE		2.99	3.40	3.51	3.15

	SOW DATE	20 AUG		11 SEPT	
STR DISP	SDBED N	0	50	0	50
BURN		2.70	2.89	3.68	3.22
CHOP		2.95	2.59	3.75	3.73
BALE		2.86	2.68	3.64	3.87

	SOW DATE	20 AUG		11 SEPT	
CULTIVTN	SDBED N	0	50	0	50
TINE CULT		2.79	2.70	3.64	3.67
PLOUGH		2.89	2.74	3.74	3.55

		SOW DATE	20 AUG		11 SEPT	
STR DISP	CULTIVTN	SDBED N	0	50	0	50
BURN	TINE CULT		2.86	3.20	3.39	2.73
	PLOUGH		2.54	2.57	3.96	3.72
CHOP	TINE CULT		2.87	2.20	4.17	4.17
	PLOUGH		3.04	2.98	3.33	3.28
BALE	TINE CULT		2.63	2.69	3.34	4.12
	PLOUGH		3.09	2.67	3.93	3.63

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

STR DISP	CULTIVTN	SOW DATE	SDBED N
0.044	0.036	0.252	0.093

STR DISP CULTIVTN	STR DISP SOW DATE	CULTIVTN SOW DATE	STR DISP SDBED N
0.062	0.312	0.254	0.122

Except when comparing means with the same level(s) of

STR DISP	0.436		0.160
CULTIVTN		0.356	

CULTIVTN SDBED N	SOW DATE SDBED N	STR DISP CULTIVTN SOW DATE	STR DISP CULTIVTN SDBED N
0.099	0.268	0.441	0.172

Except when comparing means with the same level(s) of

CULTIVTN	0.131		
SOW DATE		0.131	
STR DISP.CULTIVTN			0.617	0.227

STR DISP SOW DATE SDBED N	CULTIVTN SOW DATE SDBED N	STR DISP CULTIVTN SOW DATE SDBED N
0.351	0.286	0.496

Except when comparing means with the same level(s) of

STR DISP	0.465	
CULTIVTN		0.380
STR DISP.CULTIVTN		0.658
STR DISP.SOW DATE	0.227	
CULTIVTN.SOW DATE		0.185
STR DISP.SDBED N	0.465	
CULTIVTN.SDBED N		0.380
STR DISP.CULTIVTN.SOW DATE		0.321
STR DISP.CULTIVTN.SDBED N		0.658

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	5	0.062	1.9
BLOCK.WP.SP1	6	0.617	19.2
BLOCK.WP.SP1.SP2	12	0.321	10.0

GRAIN MEAN DM% 79.7

PLOT AREA HARVESTED 0.00345

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