

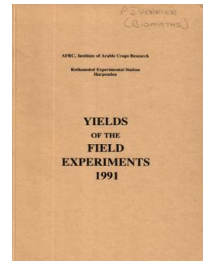
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91/R/CS/311 Effects of Shallow Straw Incorporation - W. Wheat

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91/R/CS/311

EFFECTS OF SHALLOW STRAW INCORPORATION

Object: To study the effects of shallow straw incorporation on straw decomposition, toxin production, pests and diseases and on the establishment, growth and yield of winter wheat - West Barnfield I.

Sponsors: R.D. Prew, D.G. Christian, R.J. Gutteridge, E.T.G. Bacon, J.F. Jenkyn, B.R. Kerry, W. Powell, A.D. Todd.

The seventh year, w. wheat.

For previous years see 85-90/R/CS/311.

Design: Single replicate of 3 x 2 x 2 x 2 x 2.

Whole plot dimensions: 9.0 x 57.0.

Treatments: Combinations of:-

Whole plots

1. **STRAW** Treatments to straw of previous wheat:

BURNT	Burnt on 22 Aug, 1990
BALED	Baled and removed on 21 Aug
CHOPPED	Chopped on 22 Aug

2. **CULTTIME** Time of cultivation, to 10 cm depth:

EARLY	Cultivated by rotary grubber on 23 Aug, 1990
LATER	Cultivated by rotary grubber on 14 Sept

Sub plots

3. **FUNGICIDE** Fungicides:

O	None
FULL	Full programme:- Triadimefon at 0.12 kg and carbendazim at 0.25 kg in 200 l on 3 Dec, 1990 Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l on 12 Apr, 1991 Propiconazole at 0.12 kg with chlorothalonil at 0.50 kg in 200 l on 20 June

4. **INSCTCDE** Insecticides:

O	None
CYP+PIR	Cypermethrin at 25 g in 200 l on 6 Nov, 1990 Pirimicarb at 0.14 kg in 200 l on 2 July, 1991

5. **MOLLCIDE** Molluscicide:

O	None
METHCARB	Methiocarb at 0.22 kg on 11 Oct, 1990

NOTE: STRAW BURNT plots were disced the day after burning.

91/R/CS/311

Basal applications: Manures: 'Nitram' at 120 kg and later at 580 kg.
Weedkillers: Glyphosate at 0.18 kg and later at 1.4 kg, both in 200 l. Tri-allate at 2.2 kg. Bifenox at 0.95 kg and chlorotoluron at 3.5 kg in 200 l.

Seed: Haven, sown at 190 kg.

Cultivations, etc.:- First glyphosate applied: 8 Oct, 1990. Rotary harrowed, seed sown: 10 Oct. Tri-allate applied: 2 Nov. Bifenox and chlorotoluron applied: 13 Nov. First N applied: 4 Mar, 1991. Second N applied: 5 Apr. Second glyphosate applied: 13 Aug. Combine harvested: 20 Aug.

NOTE: Growth was measured and incidence of pests and diseases was assessed at intervals during the season. Ears of volunteers were counted prior to harvest and components of yield were measured.

GRAIN TONNES/HECTARE

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

CULTTIME	EARLY	LATER	Mean
STRAW			
BURNT	8.84	8.42	8.63
BALED	9.00	9.23	9.11
CHOPPED	8.78	8.23	8.51
Mean	8.87	8.63	8.75
FUNGCIDE	O	FULL	Mean
STRAW			
BURNT	7.71	9.55	8.63
BALED	8.39	9.84	9.11
CHOPPED	7.66	9.35	8.51
Mean	7.92	9.58	8.75
FUNGCIDE	O	FULL	Mean
CULTTIME			
EARLY	8.17	9.57	8.87
LATER	7.66	9.59	8.63
Mean	7.92	9.58	8.75
INSCTCDE	O	CYP+PIR	Mean
STRAW			
BURNT	8.44	8.82	8.63
BALED	9.05	9.18	9.11
CHOPPED	8.51	8.50	8.51
Mean	8.66	8.83	8.75

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GRAIN TONNES/HECTARE

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

INSCTCDE	O	CYP+PIR	Mean
CULTTIME			
EARLY	8.72	9.02	8.87
LATER	8.61	8.65	8.63
Mean	8.66	8.83	8.75

INSCTCDE	O	CYP+PIR	Mean
FUNGCIDE			
O	7.76	8.08	7.92
FULL	9.57	9.59	9.58
Mean	8.66	8.83	8.75

MOLLCIDE	O	METHCARB	Mean
STRAW			
BURNT	8.57	8.69	8.63
BALED	9.02	9.21	9.11
CHOPPED	8.53	8.48	8.51
Mean	8.71	8.79	8.75

MOLLCIDE	O	METHCARB	Mean
CULTTIME			
EARLY	8.84	8.91	8.87
LATER	8.58	8.68	8.63
Mean	8.71	8.79	8.75

MOLLCIDE	O	METHCARB	Mean
FUNGCIDE			
O	7.84	7.99	7.92
FULL	9.57	9.59	9.58
Mean	8.71	8.79	8.75

MOLLCIDE	O	METHCARB	Mean
INSCTCDE			
O	8.64	8.69	8.66
CYP+PIR	8.77	8.90	8.83
Mean	8.71	8.79	8.75

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GRAIN TONNES/HECTARE

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

		STRAW*	
FUNGCIDE	INSCTCDE	MOLLCIDE	FUNGCIDE
0.111	0.111	0.111	0.192
CULTTIME*		STRAW*	
FUNGCIDE	INSCTCDE	CULTTIME*	FUNGCIDE
0.156	0.192	INSCTCDE	INSCTCDE
		0.156	0.156
STRAW*		CULTTIME*	
MOLLCIDE	MOLLCIDE	FUNGCIDE	INSCTCDE
0.192	0.156	MOLLCIDE	MOLLCIDE
		0.156	0.156

* Within the same level of **STRAW**, **CULTTIME** or **STRAW.CULTTIME** only

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

Stratum	d.f.	s.e.	cv%
WP.SP	27	0.383	4.4

GRAIN MEAN DM% 89.6

SUB PLOT AREA HARVESTED 0.00276