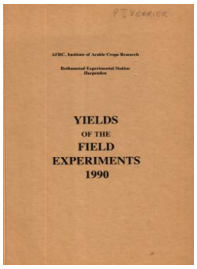
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1990

Full Table of Content



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

Rothamsted Research

Rothamsted Research (1991) *90/R/CS/311 Effects of Shallow Straw Incorporation - W. Wheat ;* Yields Of The Field Experiments 1990, pp 69 - 73 **- DOI: https://doi.org/10.23637/ERADOC-1-42**

90/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, R. Moffitt, W. Powell, A.D. Todd.

The sixth year, w. wheat.

For previous years see 85-89/R/CS/311.

Design: Single replicate of 3 x a half replicate of 2 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 16 Aug, 1989
	BALED	Baled and removed on 16 Aug
	CHOPPED	Chopped on 16 Aug
2. **CULTTIME**		Time of cultivation, to 10 cm depth:
	EARLY	Cultivated by rotary grubber on 16 Aug, 1989
	LATER	Cultivated by rotary grubber on 30 Aug

Sub plots

3. **AUTN RES**		Residues of autumn N last applied autumn 1988, kg N per annum:
	(0)	
	(50)	
4. **FUNGCIDE**		Fungicides:
	O	None
	FULL	Full programme:- Triadimefon at 0.12 kg and carbendazim at 0.25 kg in 200 l on 24 Nov, 1989. Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l on 9 Apr, 1990 Propiconazole at 0.125 kg in 200 l on 17 May Propiconazole at 0.125 kg with carbendazim at 0.25 kg and maneb at 1.6 kg in 200 l on 14 June
5. **INSCTCDE**		Insecticides:
	O	None
	CYP+PIR	Cypermethrin at 25 g in 200 l on 1 Nov, 1989 Pirimicarb at 0.14 kg in 200 l on 14 June

https://doi.org/10.23637/ERADOC-1-42

90/R/CS/311

6. **MOLLCIDE** Molluscicide:

0	None
METHCARB	Methiocarb at 0.22 kg on 6 Oct, 1989

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

Basal applications: Manures: 'Nitram' at 120 kg and later at 580 kg. Weedkillers: Glyphosate at 0.27 kg in 200 l. Chlorotoluron at 3.0 kg with cyanazine at 0.75 kg in 200 l. Bromoxynil at 0.34 kg and clopyralid at 0.07 kg with fluroxypyr at 0.15 kg in 200 l.

Seed: Pastiche, sown at 200 kg.

Cultivations, etc.:- Glyphosate applied: 21 Sept, 1989. Rotary harrowed, seed sown: 5 Oct. Chlorotoluron with cyanazine applied: 10 Nov. First N applied: 2 Mar, 1990. Second N applied: 12 Apr. Remaining weedkillers applied: 3 May. Combine harvested: 11 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	7.48	7.91	7.69
BALED	6.29	6.87	6.58
CHOPPED	5.55	7.01	6.28
Mean	6.44	7.27	6.85

AUTN RES	(0)	(50)	Mean
STRAW			
BURNT	7.73	7.65	7.69
BALED	6.50	6.66	6.58
CHOPPED	6.28	6.29	6.28
Mean	6.84	6.87	6.85

AUTN RES	(0)	(50)	Mean
CULTTIME			
EARLY	6.44	6.44	6.44
LATER	7.23	7.30	7.27
Mean	6.84	6.87	6.85

FUNGCIDE	O	FULL	Mean
STRAW			
BURNT	7.65	7.74	7.69
BALED	6.50	6.66	6.58
CHOPPED	6.27	6.30	6.28
Mean	6.81	6.90	6.85

https://doi.org/10.23637/ERADOC-1-42

90/R/CS/311

GRAIN TONNES/HECTARE

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

FUNGCIDE	O	FULL	Mean
CULTTIME			
EARLY	6.40	6.48	6.44
LATER	7.21	7.32	7.27
Mean	6.81	6.90	6.85

FUNGCIDE	O	FULL	Mean
AUTN RES			
(0)	6.83	6.85	6.84
(50)	6.79	6.95	6.87
Mean	6.81	6.90	6.85

INSCTCDE	O	CYP+PIR	Mean
STRAW			
BURNT	7.47	7.92	7.69
BALED	6.50	6.67	6.58
CHOPPED	5.92	6.65	6.28
Mean	6.63	7.08	6.85

INSCTCDE	O	CYP+PIR	Mean
CULTTIME			
EARLY	6.11	6.77	6.44
LATER	7.14	7.39	7.27
Mean	6.63	7.08	6.85

INSCTCDE	O	CYP+PIR	Mean
AUTN RES			
(0)	6.63	7.05	6.84
(50)	6.63	7.11	6.87
Mean	6.63	7.08	6.85

INSCTCDE	O	CYP+PIR	Mean
FUNGCIDE			
O	6.63	6.98	6.81
FULL	6.62	7.18	6.90
Mean	6.63	7.08	6.85

MOLLCIDE	O	METHCARB	Mean
STRAW			
BURNT	7.68	7.71	7.69
BALED	6.55	6.62	6.58
CHOPPED	6.22	6.35	6.28
Mean	6.81	6.89	6.85

https://doi.org/10.23637/ERADOC-1-42

90/R/CS/311

GRAIN TONNES/HECTARE

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

MOLLCIDE	O	METHCARB	Mean
CULTTIME			
EARLY	6.37	6.51	6.44
LATER	7.26	7.27	7.27
Mean	6.81	6.89	6.85

MOLLCIDE	O	METHCARB	Mean
AUTN RES			
(0)	6.83	6.85	6.84
(50)	6.80	6.94	6.87
Mean	6.81	6.89	6.85

MOLLCIDE	O	METHCARB	Mean
FUNGCIDE			
O	6.70	6.91	6.81
FULL	6.93	6.87	6.90
Mean	6.81	6.89	6.85

MOLLCIDE	O	METHCARB	Mean
INSCTCDE			
O	6.52	6.73	6.63
CYP+PIR	7.10	7.05	7.08
Mean	6.81	6.89	6.85

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

AUTN RES	FUNGCIDE	INSCTCDE	MOLLCIDE
0.072	0.072	0.072	0.072

STRAW*	CULTTIME*	STRAW*	CULTTIME*
AUTN RES	AUTN RES	FUNGCIDE	FUNGCIDE
0.125	0.102	0.125	0.102

AUTN RES	STRAW*	CULTTIME*	AUTN RES
FUNGCIDE	INSCTCDE	INSCTCDE	INSCTCDE
0.102	0.125	0.102	0.102

FUNGCIDE	STRAW*	CULTTIME*	AUTN RES
INSCTCDE	MOLLCIDE	MOLLCIDE	MOLLCIDE
0.102	0.125	0.102	0.102

FUNGCIDE	INSCTCDE
MOLLCIDE	MOLLCIDE
0.102	0.102

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

https://doi.org/10.23637/ERADOC-1-42

90/R/CS/311

GRAIN TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
WP.SP	20	0.250	3.6

GRAIN MEAN DM% 90.5

SUB PLOT AREA HARVESTED 0.00276

https://doi.org/10.23637/ERADOC-1-42