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# Yields of the Field Experiments 1987

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

### Rothamsted Research

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87/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.

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The third year, w. wheat.

For previous years see 85-86/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 8 Sept, 1986
BALED	Baled and removed on 21 Aug
CHOPPED	Chopped on 21 Aug

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

EARLY	Cultivated by rotary grubber on 9 Sept, 1986
LATER	Cultivated by rotary grubber on 26 Sept

Sub plots

3. AUT N Autumn N as 'Nitram' applied just before cultivation:

0	None
50	50 kg N on 9 Sept, 1986 (CULTTIME EARLY), 25 Sept (CULTTIME LATER)

4. FUNGCIDE Fungicides:

0	None
FULL	Full programme:- Triadimefon at 0.125 kg and carbendazim at 0.25 kg in 500 l on 14 Apr, 1987 Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l on 27 Apr Propiconazole at 0.125 kg in 200 l on 28 May Propiconazole at 0.125 kg with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l on 23 June

5. INSCTCDE Insecticide:

0	None
PIR	Pirimicarb at 0.14 kg in 200 l on 23 June, 1987

87/R/CS/311

6. MOLLICIDE Molluscicide:

0 None  
METHCARB Methiocarb at 0.22 kg, as pellets, broadcast on  
29 Sept, 1986

Basal applications: Manures: 'Nitram' at 130 kg and later at 590 kg.  
Weedkillers: Paraquat at 0.60 kg ion in 200 l. Isoproturon at 2.5 kg  
in 200 l. Clopyralid at 0.05 kg and bromoxynil at 0.24 kg with  
mecoprop at 1.8 kg in 200 l.

Seed: Mission, sown at 190 kg.

Cultivations, etc.: - Paraquat applied: 3 Oct, 1986. Rotary harrowed:  
6 Oct. Seed sown: 7 Oct. First N applied: 19 Mar, 1987.  
Isoproturon applied: 31 Mar. Second N, clopyralid, bromoxynil and  
mecoprop applied: 18 Apr. Combine harvested: 19 Aug.

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

87/R/CS/311

GRAIN TONNES/HECTARE

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

CULTTIME	EARLY	LATER	Mean
STRAW			
BURNT	6.19	6.10	6.14
BALED	6.78	6.83	6.81
CHOPPED	6.82	5.89	6.36
Mean	6.60	6.28	6.44
AUT N	0	50	Mean
STRAW			
BURNT	6.07	6.21	6.14
BALED	6.68	6.93	6.81
CHOPPED	6.41	6.31	6.36
Mean	6.39	6.48	6.44
AUT N	0	50	Mean
CULTTIME			
EARLY	6.54	6.65	6.60
LATER	6.23	6.32	6.28
Mean	6.39	6.48	6.44
MOLLCIDE	0	METHCARB	Mean
STRAW			
BURNT	6.00	6.29	6.14
BALED	6.69	6.92	6.81
CHOPPED	6.42	6.30	6.36
Mean	6.37	6.50	6.44
MOLLCIDE	0	METHCARB	Mean
CULTTIME			
EARLY	6.46	6.73	6.60
LATER	6.28	6.27	6.28
Mean	6.37	6.50	6.44
MOLLCIDE	0	METHCARB	Mean
AUT N			
0	6.39	6.39	6.39
50	6.35	6.62	6.48
Mean	6.37	6.50	6.44
FUNGCIDE	0	FULL	Mean
STRAW			
BURNT	5.86	6.43	6.14
BALED	6.43	7.18	6.81
CHOPPED	6.03	6.68	6.36
Mean	6.11	6.77	6.44

87/R/CS/311

GRAIN TONNES/HECTARE

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

FUNGCIDE	0	FULL	Mean
CULTTIME			
EARLY	6.32	6.88	6.60
LATER	5.90	6.65	6.28
Mean	6.11	6.77	6.44
FUNGCIDE	0	FULL	Mean
AUT N			
0	6.09	6.68	6.39
50	6.12	6.85	6.48
Mean	6.11	6.77	6.44
FUNGCIDE	0	FULL	Mean
MOLLCIDE			
0	5.99	6.75	6.37
METHCARB	6.23	6.78	6.50
Mean	6.11	6.77	6.44
INSCTCDE	0	PIR	Mean
STRAW			
BURNT	5.99	6.29	6.14
BALED	6.78	6.83	6.81
CHOPPED	6.27	6.45	6.36
Mean	6.35	6.52	6.44
INSCTCDE	0	PIR	Mean
CULTTIME			
EARLY	6.51	6.69	6.60
LATER	6.19	6.36	6.28
Mean	6.35	6.52	6.44
INSCTCDE	0	PIR	Mean
AUT N			
0	6.29	6.48	6.39
50	6.40	6.57	6.48
Mean	6.35	6.52	6.44
INSCTCDE	0	PIR	Mean
MOLLCIDE			
0	6.18	6.56	6.37
METHCARB	6.51	6.49	6.50
Mean	6.35	6.52	6.44

87/R/CS/311

GRAIN TONNES/HECTARE

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

INSCTCDE FUNG CIDE	0	PIR	Mean
0	6.05	6.17	6.11
FULL	6.65	6.88	6.77
Mean	6.35	6.52	6.44

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

Table s.e.d.	AUT N 0.105	FUNG CIDE 0.105	INSCTCDE 0.105	MOLL CIDE 0.105
Table s.e.d.	STRAW* AUT N 0.183	CULTTIME* AUT N 0.149	STRAW* FUNG CIDE 0.183	CULTTIME* FUNG CIDE 0.149
Table s.e.d.	AUT N FUNG CIDE 0.149	STRAW* INSCTCDE 0.183	CULTTIME* INSCTCDE 0.149	AUT N INSCTCDE 0.149
Table s.e.d.	FUNG CIDE INSCTCDE 0.149	STRAW* MOLL CIDE 0.183	CULTTIME* MOLL CIDE 0.149	AUT N MOLL CIDE 0.149
Table s.e.d.	FUNG CIDE MOLL CIDE 0.149	INSCTCDE MOLL CIDE 0.149		

\* 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	20	0.365	5.7

GRAIN MEAN DM% 84.2

SUB PLOT AREA HARVESTED 0.00288