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93/R/CS/311 Effects of Shallow Straw Incorporation - S. Wheat

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93/R/CS/311

EFFECTS OF SHALLOW STRAW INCORPORATION

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

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The ninth year, s. wheat.

For previous years see 85-92/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
 BALED Baled and removed
 CHOPPED Chopped
2. **CULTTIME[92]** Residual effect of time of cultivation, to 10 cm depth:

 (EARLY) As soon as possible after harvest
 (LATER) At least 14 days after EARLY

Sub plots

3. **FUNGCIDE[92]** Residual effect of fungicides:

 (O) None
 (FULL) Full programme:-
 Triadimefon and carbendazim in winter, prochloraz in
 spring plus propiconazole alone and with
 chlorothalonil in summer
4. **INSECTICIDE[92]** Residual effect of insecticides:

 (O) None
 (CYP+PR) Cypermethrin in autumn and pirimicarb in summer
5. **MOLLCIDE[92]** Residual effect of molluscicide:

 (O) None
 (METHCB) Methiocarb after drilling

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Experimental Diary:

18-Aug-92 : T : **STRAW BALED**: Straw baled and removed.
 : T : **STRAW BURNT**: Straw burnt and ash incorporated with discs.
 : T : **STRAW CHOPPED**: Straw chopped with trailed straw chopper.
 13-Oct-92 : B : Gramoxone 100 at 2.0 l with Vassgro Spreader at 0.10 l in 200 l.
 09-Mar-93 : B : Cultivated by rotary grubber to 10 cm, spring-tine cultivated.
 10-Mar-93 : B : Rotary harrowed, Canon, dressed Cerevax, drilled at 400 seeds per square metre.
 12-Mar-93 : B : Rolled.
 23-Apr-93 : B : 34.5% N at 290 kg.
 18-May-93 : B : Ally at 30 g and Starane 2 at 1.0 l in 200 l.
 25-Aug-93 : B : Combine harvested.

NOTES: (1) Owing to prolonged wet weather in the autumn winter wheat was not sown and was replaced by spring wheat.
 (2) Foot and root rots were measured in July. Fertile ears were counted in June and thousand grain weights were measured at harvest.

GRAIN TONNES/HECTARE

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

CULTTIME [92]	(EARLY)	(LATER)	Mean
STRAW			
BURNT	6.47	6.58	6.53
BALED	6.02	6.38	6.20
CHOPPED	5.73	6.22	5.97
Mean	6.07	6.40	6.23
FUNGCIDE [92]			
	(O)	(FULL)	Mean
BURNT	6.37	6.69	6.53
BALED	5.97	6.43	6.20
CHOPPED	5.90	6.04	5.97
Mean	6.08	6.39	6.23
FUNGCIDE [92]			
CULTTIME [92]			
(EARLY)	5.87	6.27	6.07
(LATER)	6.29	6.50	6.40
Mean	6.08	6.39	6.23

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GRAIN TONNES/HECTARE

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

INSCTCDE [92]	(O)	(CYP+PR)	Mean
STRAW			
BURNT	6.54	6.51	6.53
BALED	6.10	6.30	6.20
CHOPPED	5.96	5.98	5.97

Mean 6.20 6.27 6.23

INSCTCDE [92]	(O)	(CYP+PR)	Mean
CULTTIME [92]			
(EARLY)	6.06	6.08	6.07
(LATER)	6.35	6.45	6.40

Mean 6.20 6.27 6.23

INSCTCDE [92]	(O)	(CYP+PR)	Mean
FUNGCIDE [92]			
(O)	6.00	6.16	6.08
(FULL)	6.40	6.37	6.39

Mean 6.20 6.27 6.23

MOLLCIDE [92]	(O)	(METHCB)	Mean
STRAW			
BURNT	6.50	6.56	6.53
BALED	6.36	6.04	6.20
CHOPPED	5.90	6.05	5.97

Mean 6.25 6.22 6.23

MOLLCIDE [92]	(O)	(METHCB)	Mean
CULTTIME [92]			
(EARLY)	6.08	6.07	6.07
(LATER)	6.43	6.37	6.40

Mean 6.25 6.22 6.23

MOLLCIDE [92]	(O)	(METHCB)	Mean
FUNGCIDE [92]			
(O)	6.04	6.13	6.08
(FULL)	6.47	6.31	6.39

Mean 6.25 6.22 6.23

MOLLCIDE [92]	(O)	(METHCB)	Mean
INSCTCDE [92]			
(O)	6.26	6.15	6.20
(CYP+PR)	6.25	6.28	6.27

Mean 6.25 6.22 6.23

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GRAIN TONNES/HECTARE

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

FUNGCIDE[92]	INSCTCDE[92]	MOLLCIDE[92]	STRAW*	
			FUNGCIDE[92]	
0.077	0.077	0.077	0.134	
CULTTIME[92]*	STRAW*	CULTTIME[92]*	FUNGCIDE[92]	
FUNGCIDE[92]	INSCTCDE[92]	INSCTCDE[92]	INSCTCDE[92]	
0.109	0.134	0.109	0.109	
STRAW*	CULTTIME[92]*	FUNGCIDE[92]	INSCTCDE[92]	
MOLLCIDE[92]	MOLLCIDE[92]	MOLLCIDE[92]	MOLLCIDE[92]	
0.134	0.109	0.109	0.109	

* Within the same level of STRAW, CULTTIME[92] or STRAW.CULTTIME[92] only

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

Stratum	d.f.	s.e.	cv%
WP.SP	27	0.268	4.3

GRAIN MEAN DM% 83.5

SUB PLOT AREA HARVESTED 0.00276