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

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96/R/CS/311

EFFECTS OF SHALLOW STRAW INCORPORATION

Object: To study the effects of straw incorporation by rotational ploughing, with shallow cultivation in the intervening years, on diseases and yield of winter wheat - West Barnfield I.

Sponsors: J.F. Jenkyn, R.J. Gutteridge, A.D. Todd.

The twelfth year, w. wheat.

For previous years see 85-95/R/CS/311.

Design: 6 x 4 criss-cross split into 2 sub-plots. Originally a single replicate of 3 x 2 x 2 x 2 x 2.

Whole plot dimensions: 4.5 x 12.0.

Treatments: Combinations of:-

Whole plots

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

BURNT	Burnt (duplicated)
BALED	Baled and removed (duplicated)
CHOPPED	Chopped and incorporated (duplicated)

Criss-cross with

2. **CULTIVTN** Autumn cultivations since 1993, previously all shallow cultivated:

(S)(S)S	Shallow tine cultivated to 10 cm
(P)(S)S	Shallow tine cultivated to 10 cm, (ploughed to 23 cm in autumn 1993)
(S)(P)S	Shallow tine cultivated to 10 cm, (ploughed to 23 cm in autumn 1994)
(S)(S)P	Ploughed to 23 cm, (shallow tine cultivated previously)

NOTE: Only the last letter (the treatment in 1996) is used in the experimental diary.

Experimental diary:

08-Aug-95 : T : **STRAW** BALED: Straw baled and removed.
08-Aug-95 : T : **STRAW** CHOPPED: Straw chopped with trailed chopper.
10-Aug-95 : T : **STRAW** BURNT: Straw burnt and ash incorporated with discs.
29-Sep-95 : B : Gramoxone 100 at 3.0 l in 200 l.
04-Oct-95 : T : **CULTIVTN** P: Ploughed.
 : T : **CULTIVTN** S: Heavy spring-tine cultivated twice.
16-Oct-95 : B : Rotary harrowed twice , Soissons, dressed Sibutol, drilled at 400 seeds per m².
30-Oct-95 : B : Avadex BW Granular at 22.5 kg.

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Experimental diary:

13-Nov-95 : B : MSS Iprofile at 2.6 l with Stomp 400 SC at 2.6 l in
200 l.
07-Mar-96 : B : 34.5% N at 116 kg.
15-Apr-96 : B : 34.5% N at 493 kg.
13-Jun-96 : B : Alto 100 SL at 0.6 l with Mallard 750 EC at 0.4 l in
300 l.
08-Aug-96 : B : Combine harvested.

NOTE: Samples were taken in July to assess root and stem base diseases.

GRAIN TONNES/HECTARE

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

CULTIVTN	(S) (S)S	(P) (S)S	(S) (P)S	(S) (S)P	Mean
STRAW					
BURNT	8.67	8.92	8.55	8.30	8.61
BALED	8.13	8.22	8.63	8.51	8.37
CHOPPED	8.26	8.22	8.58	8.79	8.46
Mean	8.35	8.45	8.59	8.53	8.48

GRAIN MEAN DM% 86.6

SUB-PLOT AREA HARVESTED 0.00276