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

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98/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.

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The 14th year, w. wheat.

For previous years see 85-97/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 P94	Shallow tine cultivated to 10 cm, (ploughed to 20 cm in autumn 1993)
S P95	Shallow tine cultivated to 10 cm, (ploughed to 20 cm in autumn 1994)
S P96	Shallow tine cultivated to 10 cm, (ploughed to 20 cm in autumn 1995)
S P97	Shallow tine cultivated to 10 cm, (ploughed to 20 cm in autumn 1996)

Experimental diary:

11-Aug-97 : T : **STRAW** BALED: Straw baled and removed.
 : T : **STRAW** BURNT: Straw burnt and ash incorporated.
 : T : **STRAW** CHOPPED: Straw chopped with trailed chopper.
12-Aug-97 : B : Discd.
05-Sep-97 : B : Scythe LC at 1.5 l with Vassgro Non Ionic at 1.0 l in 200 l.
11-Oct-97 : B : Scythe LC at 3.0 l in 200 l.
14-Oct-97 : B : Heavy spring-tine cultivated to 10 cm.
14-Oct-97 : B : Rotary harrowed, Soissons, dressed Anchor, drilled at 400 seeds per m².
16-Oct-97 : B : Draza at 5.5 kg.

98/R/CS/311

Experimental diary:

13-Jan-98 : B : Hawk at 2.5 l with Sprayprover at 1.0 l in 200 l.
17-Feb-98 : B : 34.5% N at 120 kg.
16-Mar-98 : B : Ally at 20 g with MSS Optica at 1.0 l in 200 l.
28-Apr-98 : B : 34.5% N at 580 kg. Tripart Brevis at 1.5 l in 200 l.
29-May-98 : B : Folicur at 0.7 l in 200 l.
04-Jun-98 : T : **CULTIVTN** S P95: Roundup at 3.0 l in 200 l.
12-Jun-98 : B : Bavistin DF at 0.5 kg with Folicur at 0.5 l in 100 l.
08-Aug-98 : B : Combine harvested.

- NOTES:** (1) Plant samples were taken in July to assess root and stem base diseases.
(3) All **CULTIVTN** S P95 plots were destroyed with herbicide to reduce brome infestation in readiness for modifications to the experiment, these are omitted from the table of results.

GRAIN TONNES/HECTARE

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

CULTIVTN	S P94	S P96	S P97	Mean
STRAW				
BURNT	8.66	8.19	8.50	8.45
BALED	6.04	6.05	7.59	6.56
CHOPPED	5.57	6.83	7.81	6.74
Mean	6.76	7.02	7.97	7.25

GRAIN MEAN DM% 87.8

SUB-PLOT AREA HARVESTED 0.00276