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## Yields of the Field Experiments 1997

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

#### Rothamsted Research

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97/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 13th year, w. wheat.

For previous years see 85-96/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. <b>STRAW</b> | Treatments to straw of previous wheat: |
| BURNT           | Burnt (duplicated)                     |
| BALED           | Baled and removed (duplicated)         |
| CHOPPED         | Chopped and incorporated (duplicated)  |

Criss-cross with

- |                    |  |
|--------------------|--|
| 2. <b>CULTIVTN</b> | 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) |
| P97                | Ploughed to 20 cm, (shallow tine cultivated previously)              |

**NOTE:** Only the first letter (the treatment in 1997) is used in the experimental diary.

**Experimental diary:**

- 08-Aug-96 : T : **STRAW** BALED: Straw baled and removed.  
08-Aug-96 : T : **STRAW** CHOPPED: Straw chopped with trailer chopper.  
20-Aug-96 : T : **STRAW** BURNT: Straw burnt and ash incorporated with discs.  
30-Sep-96 : B : Gramoxone 100 at 3.0 l in 200 l.  
09-Oct-96 : T : **CULTIVTN** P: Ploughed.  
                  : T : **CULTIVTN** S: Heavy spring-tine cultivated.  
10-Oct-96 : B : Rotary harrowed twice, Soissons, dressed Sibutol and Gammasan 30, drilled at 380 seeds per m<sup>2</sup>.  
15-Nov-96 : B : Avadex Excel 15G at 15.0 kg.  
27-Nov-96 : B : Stefes IPU at 1.0 l with Stomp 400 SC at 2.5 l in 200 l.

97/R/CS/311

**Experimental diary:**

03-Mar-97 : B : 34.5% N at 116 kg.  
04-Apr-97 : B : 34.5% N at 580 kg.  
08-Aug-97 : B : Combine harvested.

**NOTE:** Plant samples were taken in July to assess root and stem base diseases.

**GRAIN TONNES/HECTARE**

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

CULTIVTN	S P94	S P95	S P96	P97	Mean
<b>STRAW</b>					
BURNT	7.17	6.80	6.94	7.05	6.99
BALED	5.00	6.18	6.15	6.09	5.85
CHOPPED	5.24	6.06	6.42	6.68	6.10
Mean	5.80	6.35	6.50	6.61	6.32

GRAIN MEAN DM% 86.4

SUB-PLOT AREA HARVESTED 0.00288