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# Yields of the Field Experiments 1987

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## 87/R/CS/312 Straw Decomposition - W. Wheat

### Rothamsted Research

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87/R/CS/312

STRAW DECOMPOSITION

Object: To test the effects of two basidiomycetes on the decomposition of wheat straw from a preceding crop and on the establishment and yield of a following crop - West Barnfield I.

Sponsor: S.H.T. Harper.

The third year, w. wheat.

For previous years see 85-86/R/CS/312.

Design: 4 randomised blocks of 4 plots.

Whole plot area: 4.5 x 12.0.

Treatments: All combinations of treatments applied to chopped straw in the field, cumulative to applications in the first year:

- |                |  |
|----------------|--|
| 1. TREATMNT[1] | Treatment one:   |
| NONE           | None   |
| BASID 1        | Basidiomycete 1, cumulative to whey at 15 kg in 1985 and 1986        |
| 2. TREATMNT[2] | Treatment two:   |
| NONE           | None   |
| BASID 2        | Basidiomycete 2, cumulative to a fungal accelerator in 1985 and 1986 |

- NOTES: (1) Basidiomycetes 1 and 2 were naturally occurring fungi found in soil at Rothamsted and Woburn respectively.  
(2) The basidiomycete fungus was colonised on wheat seed and this was spread on the surface at 1 seed per square cm on 25 Sept, 1986.  
(3) Straw was chopped by a trailed straw chopper and incorporated to a depth of about 10 cm by a rotary grubber.

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. Fungicides: Triadimefon at 0.12 kg and carbendazim at 0.25 kg in 200 l. Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l. Propiconazole at 0.12 kg in 200 l. Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.5 kg in 200 l. Insecticide: Pirimicarb at 0.14 kg in 200 l. Molluscicide: Methiocarb at 0.22 kg.

Seed: Mission, sown at 190 kg.

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Cultivations, etc.:- Straw chopped: 21 Aug, 1986. Cultivated with rotary grubber: 26 Sept. Methiocarb applied: 29 Sept. Paraquat applied: 3 Oct. Rotary harrowed: 6 Oct. Seed sown: 7 Oct. First N applied: 19 Mar, 1987. Isoproturon applied: 31 Mar. Triadimefon and carbendazim applied: 14 Apr. Second N, clopyralid, bromoxynil and mecoprop applied: 18 Apr. Prochloraz and carbendazim applied: 27 Apr. Propiconazole applied: 28 May. Propiconazole with carbendazim and maneb applied, insecticide applied separately: 23 June. Combine harvested: 19 Aug.

NOTE: Samples of straw were taken throughout the season for observations on the rate of decomposition.

GRAIN TONNES/HECTARE

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

TREATMNT[2] TREATMNT[1]	NONE	BASID 2	Mean
NONE	6.85	6.54	6.70
BASID 1	6.68	6.28	6.48
Mean	6.76	6.41	6.59

\*\*\* Standard errors of difference's of means \*\*\*

Table	TREATMNT[1]	TREATMNT[2]	TREATMNT[1] TREATMNT[2]
s.e.d.	0.258	0.258	0.364

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	9	0.515	7.8

GRAIN MEAN DM% 83.2

PLOT AREA HARVESTED 0.00288