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# Yields of the Field Experiments 1985

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

### Rothamsted Research

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85/R/CS/312

STRAW DECOMPOSITION

Object: To test the effects of whey and a fungal accelerator 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 first year, w. wheat.

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:

1. TREATMNT(1) Treatment one:

NONE	None
WHEY	Whey at 15 kg

2. TREATMNT(2) Treatment two:

NONE	None
FUNG ACC	Fungal accelerator, <i>Trichoderma harzianum</i> , 100,000 spores per g of straw

NOTE: Straw was chopped and incorporated to a depth of about 10 cm by a heavy spring-tine cultivator.

Basal applications: Manures: 'Nitro-Chalk' (27.5% N) at 140 kg followed by 730 kg. Weedkillers: Paraquat at 0.60 kg ion in 500 l. Isoproturon at 2.0 kg with mecoprop at 1.6 kg, ioxynil at 0.20 kg and bromoxynil at 0.20 kg in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 500 l. Propiconazole at 0.25 kg in 500 l. Propiconazole at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg) in 200 l. Insecticide: Pirimicarb at 0.14 kg in 500 l.

Seed: Avalon, sown at 220 kg.

Cultivations, etc.: - Straw chopped: 17 Aug, 1984. Treatments applied, heavy spring-tine cultivated twice: 21 Aug. Disced: 22 Aug. Paraquat applied: 28 Sept. Rotary harrowed: 11 Oct. Seed sown: 12 Oct. Spring-tine cultivated: 13 Oct. First N applied: 28 Feb, 1985. Remaining weedkillers applied: 10 Apr. Second N applied: 12 Apr. Prochloraz and carbendazim applied: 17 Apr. Propiconazole applied: 4 June. Propiconazole with 'Septal' applied: 2 July. Insecticide applied: 8 July. Combine harvested: 29 Aug. Previous crops: Potatoes 1983, w. wheat 1984.

NOTE: Samples of wheat straw were taken during September, October and November 1984 for observations on the rate of straw decomposition.

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GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

TREATMNT(2) TREATMNT(1)	NONE	FUNG ACC	MEAN
NONE	9.38	9.66	9.52
WHEY	9.43	9.41	9.42
MEAN	9.41	9.54	9.47

\*\*\*\*\* STANDARD ERRORS OF DIFFERENCES OF MEANS \*\*\*\*\*

TABLE	TREATMNT(1)	TREATMNT(2)	TREATMNT(1) TREATMNT(2)
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SED	0.141	0.141	0.200

\*\*\*\*\* STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION \*\*\*\*\*

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.283	3.0

GRAIN MEAN DM% 85.9

PLOT AREA HARVESTED 0.00280