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# Yields of the Field Experiments 1986

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

### Rothamsted Research

Rothamsted Research (1987) *86/R/CS/312 Straw Decomposition - W. Wheat* ; Yields Of The Field Experiments 1986, pp 153 - 154 - DOI: <https://doi.org/10.23637/ERADOC-1-36>

86/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 second year, w. wheat.

For previous year see 85/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  
    WHEY              Whey at 15 kg
2. TREATMNT(2)      Treatment two:  
    NONE              None  
    FUNG ACC          Fungal accelerator, *Trichoderma harzianum*,  
                          100,000 spores per g of straw

- NOTES: (1) The whey was dissolved in water and the mixture applied by hand-held sprayer in 160 l on 12 Sept, 1985.  
(2) The fungal accelerator was applied in peptone water by hand-held sprayer in 880 l on 12 Sept, 1985.  
(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: (0:24:24) at 1000 kg. 'Nitram' at 130 kg followed by 520 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Clopyralid at 0.07 kg, bromoxynil octanoate at 0.34 kg, mecoprop at 2.5 kg and isoproturon at 2.1 kg in 200 l. Fungicides: Triadimefon at 0.12 kg and carbendazim at 0.25 kg in 500 l. Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l. Propiconazole at 0.12 kg in 500 l. Propiconazole at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg) in 200 l. Insecticide: Cypermethrin at 0.025 kg in 200 l. Pirimicarb at 0.14 kg in 500 l.

Seed: Mission, sown at 180 kg.

Cultivations, etc.: - Straw chopped: 6 Sept, 1985. Cultivated with rotary grubber: 13 Sept. PK applied: 16 Sept. Paraquat applied: 8 Oct. Seed sown: 10 Oct. Cypermethrin applied: 13 Nov. Triadimefon with carbendazim applied: 17 Dec. First N applied: 14 Mar, 1986. Second N applied: 27 Apr. Remaining weedkillers applied: 29 Apr. Prochloraz with carbendazim applied: 1 May. Propiconazole alone applied: 13 June. Propiconazole with 'Septal' applied, pirimicarb applied: 1 July. Combine harvested: 20 Aug.

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

GRAIN TONNES/HECTARE

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

TREATMNT(2)	NONE	FUNG ACC	MEAN
TREATMNT(1)			
NONE	6.41	6.46	6.44
WHEY	6.73	6.20	6.46
MEAN	6.57	6.33	6.45

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

TABLE	TREATMNT(1)	TREATMNT(2)	TREATMNT(1) TREATMNT(2)
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SED	0.332	0.332	0.470

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

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.665	10.3
GRAIN MEAN DM%	80.4		
PLOT AREA HARVESTED	0.00280		