

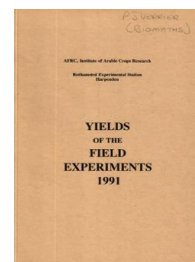
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1991

[Full Table of Content](#)



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

Rothamsted Research

Rothamsted Research (1992) *91/R/CS/311 Effects of Shallow Straw Incorporation - W. Wheat* ; Yields Of The Field Experiments 1991, pp 63 - 66 - DOI: <https://doi.org/10.23637/ERADOC-1-46>

91/R/CS/311

EFFECTS OF SHALLOW STRAW INCORPORATION

Object: To study the effects of shallow straw incorporation on straw decomposition, toxin production, pests and diseases and on the establishment, growth and yield of winter wheat - West Barnfield I.

Sponsors: R.D. Prew, D.G. Christian, R.J. Gutteridge, E.T.G. Bacon, J.F. Jenkyn, B.R. Kerry, W. Powell, A.D. Todd.

The seventh year, w. wheat.

For previous years see 85-90/R/CS/311.

Design: Single replicate of 3 x 2 x 2 x 2 x 2.

Whole plot dimensions: 9.0 x 57.0.

Treatments: Combinations of:-

Whole plots

1. **STRAW** Treatments to straw of previous wheat:

| | |
|---------|-----------------------------|
| BURNT | Burnt on 22 Aug, 1990 |
| BALED | Baled and removed on 21 Aug |
| CHOPPED | Chopped on 22 Aug |

2. **CULTTIME** Time of cultivation, to 10 cm depth:

| | |
|-------|--|
| EARLY | Cultivated by rotary grubber on 23 Aug, 1990 |
| LATER | Cultivated by rotary grubber on 14 Sept |

Sub plots

3. **FUNGCIDE** Fungicides:

| | |
|------|--|
| O | None |
| FULL | Full programme:- Triadimefon at 0.12 kg and carbendazim at 0.25 kg in 200 l on 3 Dec, 1990 Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l on 12 Apr, 1991 Propiconazole at 0.12 kg with chlorothalonil at 0.50 kg in 200 l on 20 June |

4. **INSCTCDE** Insecticides:

| | |
|---------|--|
| O | None |
| CYP+PIR | Cypermethrin at 25 g in 200 l on 6 Nov, 1990 Pirimicarb at 0.14 kg in 200 l on 2 July, 1991 |

5. **MOLLCIDE** Molluscicide:

| | |
|----------|---------------------------------------|
| O | None |
| METHCARB | Methiocarb at 0.22 kg on 11 Oct, 1990 |

NOTE: STRAW BURNT plots were disced the day after burning.

91/R/CS/311

Basal applications: Manures: 'Nitram' at 120 kg and later at 580 kg.
Weedkillers: Glyphosate at 0.18 kg and later at 1.4 kg, both in 200 l. Tri-allate at 2.2 kg. Bifenox at 0.95 kg and chlorotoluron at 3.5 kg in 200 l.

Seed: Haven, sown at 190 kg.

Cultivations, etc.:- First glyphosate applied: 8 Oct, 1990. Rotary harrowed, seed sown: 10 Oct. Tri-allate applied: 2 Nov. Bifenox and chlorotoluron applied: 13 Nov. First N applied: 4 Mar, 1991. Second N applied: 5 Apr. Second glyphosate applied: 13 Aug. Combine harvested: 20 Aug.

NOTE: Growth was measured and incidence of pests and diseases was assessed at intervals during the season. Ears of volunteers were counted prior to harvest and components of yield were measured.

GRAIN TONNES/HECTARE

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

| CULTTIME | EARLY | LATER | Mean |
|-----------------|-------|---------|------|
| STRAW | | | |
| BURNT | 8.84 | 8.42 | 8.63 |
| BALED | 9.00 | 9.23 | 9.11 |
| CHOPPED | 8.78 | 8.23 | 8.51 |
| Mean | 8.87 | 8.63 | 8.75 |
| FUNGCIDE | 0 | FULL | Mean |
| STRAW | | | |
| BURNT | 7.71 | 9.55 | 8.63 |
| BALED | 8.39 | 9.84 | 9.11 |
| CHOPPED | 7.66 | 9.35 | 8.51 |
| Mean | 7.92 | 9.58 | 8.75 |
| FUNGCIDE | 0 | FULL | Mean |
| CULTTIME | | | |
| EARLY | 8.17 | 9.57 | 8.87 |
| LATER | 7.66 | 9.59 | 8.63 |
| Mean | 7.92 | 9.58 | 8.75 |
| INSCTCDE | 0 | CYP+PIR | Mean |
| STRAW | | | |
| BURNT | 8.44 | 8.82 | 8.63 |
| BALED | 9.05 | 9.18 | 9.11 |
| CHOPPED | 8.51 | 8.50 | 8.51 |
| Mean | 8.66 | 8.83 | 8.75 |

91/R/CS/311

GRAIN TONNES/HECTARE

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

| INSC TCDE | O | CYP+PIR | Mean |
|------------------|------|---------|------|
| CULT TIME | | | |
| EARLY | 8.72 | 9.02 | 8.87 |
| LATER | 8.61 | 8.65 | 8.63 |
| Mean | 8.66 | 8.83 | 8.75 |

| INSC TCDE | O | CYP+PIR | Mean |
|------------------|------|---------|------|
| FUNG CIDE | | | |
| O | 7.76 | 8.08 | 7.92 |
| FULL | 9.57 | 9.59 | 9.58 |
| Mean | 8.66 | 8.83 | 8.75 |

| MOLL CIDE | O | METH CARB | Mean |
|------------------|------|-----------|------|
| STRAW | | | |
| BURNT | 8.57 | 8.69 | 8.63 |
| BALED | 9.02 | 9.21 | 9.11 |
| CHOPPED | 8.53 | 8.48 | 8.51 |
| Mean | 8.71 | 8.79 | 8.75 |

| MOLL CIDE | O | METH CARB | Mean |
|------------------|------|-----------|------|
| CULT TIME | | | |
| EARLY | 8.84 | 8.91 | 8.87 |
| LATER | 8.58 | 8.68 | 8.63 |
| Mean | 8.71 | 8.79 | 8.75 |

| MOLL CIDE | O | METH CARB | Mean |
|------------------|------|-----------|------|
| FUNG CIDE | | | |
| O | 7.84 | 7.99 | 7.92 |
| FULL | 9.57 | 9.59 | 9.58 |
| Mean | 8.71 | 8.79 | 8.75 |

| MOLL CIDE | O | METH CARB | Mean |
|------------------|------|-----------|------|
| INSC TCDE | | | |
| O | 8.64 | 8.69 | 8.66 |
| CYP+PIR | 8.77 | 8.90 | 8.83 |
| Mean | 8.71 | 8.79 | 8.75 |

91/R/CS/311

GRAIN TONNES/HECTARE

*** Standard errors of differences of means ***

| | | | |
|------------------|------------------|------------------|-----------------|
| | | | STRAW* |
| FUNGCIDE | INSCDCDE | MOLLCIDE | FUNGCIDE |
| 0.111 | 0.111 | 0.111 | 0.192 |
| CULTTIME* | STRAW* | CULTTIME* | FUNGCIDE |
| FUNGCIDE | INSCDCDE | INSCDCDE | INSCDCDE |
| 0.156 | 0.192 | 0.156 | 0.156 |
| STRAW* | CULTTIME* | FUNGCIDE | INSCDCDE |
| MOLLCIDE | MOLLCIDE | MOLLCIDE | MOLLCIDE |
| 0.192 | 0.156 | 0.156 | 0.156 |

* Within the same level of **STRAW**, **CULTTIME** or **STRAW.CULTTIME** only

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

| | | | |
|---------|------|-------|-----|
| Stratum | d.f. | s.e. | cv% |
| WP.SP | 27 | 0.383 | 4.4 |

GRAIN MEAN DM% 89.6

SUB PLOT AREA HARVESTED 0.00276