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Yields of the Field Experiments 2009

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Results of the
Classical and other
Long-term Experiments
2009

R/CS/326 & W/CS/326 Amounts of Straw

Rothamsted Research

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09/R/CS/326 and 09/W/CS/326

AMOUNTS OF STRAW

Object: To study the effects of different amounts of straw, incorporated into the soil, on w. wheat – Rothamsted (R) Great Knott III, Woburn (W) Far Field I

Sponsors: M. J. Glendining, P. C. Brookes

The 23rd year, w. wheat

For previous years see Yield Books for 87-08/R & W/CS/326

Design: 4 randomised blocks of 4 plots (R)
3 randomised blocks of 4 plots (W)

Whole plot dimensions: 3.0 x 13.5 (R). 0.004 ha
3.0 x 14.5 (W).

Treatments:

STRAW Amounts of straw incorporated into the seedbed (t/ha), cumulative to previous annual dressings:

| | | R | W |
|----------|-------------------|-------|-------|
| NONE | None | - | - |
| NORMAL | Normal | 6.00 | 3.98 |
| 2 NORMAL | Twice normal | 12.00 | 7.96 |
| 4 NORMAL | Four times normal | 24.00 | 15.92 |

Experimental Diary

Great Knott III (R)

| | | | Rate | Unit |
|-----------|---|--------------------------------|--------|------------|
| 28-Aug-08 | a | Load straw Normal plots | 24.30 | kg/plot |
| | a | Load straw x 2 Plots | 48.60 | kg/plot |
| | a | Load straw x 4 Plots | 97.20 | kg/plot |
| | a | Topped to chop straw | | |
| 12-Sep-08 | p | Dow Agrosiences Glyphosate 360 | 2.00 | l/200 l/ha |
| 02-Oct-08 | a | Plough/ E | | |
| 04-Oct-08 | a | Cultipressed | | |
| 16-Oct-08 | a | Combination Drilled | | |
| | s | Hereward tr Anchor | 350.00 | seeds/m2 |
| 22-Oct-08 | p | Liberator | 0.60 | l/200 l/ha |
| 24-Oct-08 | p | Decoy Wetex | 7.00 | kg/ha |
| 20-Nov-08 | p | Karan | 5.00 | kg/ha |
| 27-Nov-08 | p | Avadex Excel 15G | 15.00 | kg/ha |
| 10-Dec-08 | p | Alpha Pendimethalin 330 EC | 4.00 | l/ha |
| | p | Arelon 500 | 3.00 | l/ha |
| | p | Hallmark with Zeon Technology | 50.00 | ml |
| 03-Mar-09 | f | Double Top | 185.00 | kg/ha |
| 14-Apr-09 | p | Pacifica | 0.40 | kg/ha |
| | p | Biopower | 1.00 | l/ha |
| 21-Apr-09 | f | Nitram | 174.00 | kg/ha |

09/R/CS/326 and 09/W/CS/326

| | | | Rate | Unit |
|-----------|---|----------------------------------|--------|-------|
| 02-May-09 | p | Splice | 1.00 | l/ha |
| | p | Bravo 500 | 1.00 | l/ha |
| | p | Talius | 0.13 | l/ha |
| | p | BASF 3C Chlormequat 720 | 2.25 | l/ha |
| 04-May-09 | p | Ally Max SX | 42.00 | g/ha |
| | p | Agriguard Fluroxypyr | 0.75 | l/ha |
| 14-May-09 | f | Nitram | 145.00 | kg/ha |
| 28-May-09 | p | Brutus | 1.50 | l/ha |
| | p | Amistar Opti | 1.25 | l/ha |
| 25-Jun-09 | a | Mow / Rotavate paths | | |
| 13-Aug-09 | a | Combine harvest discards | | |
| 15-Aug-09 | a | Combine harvest, plots for yield | | |
| | a | Sample, bale and weigh straw | | |
| 19-Aug-09 | a | Sample, bale and weigh straw | | |

Far Field I (W)

| | | | Rate | Unit |
|-----------|---|----------------------------------|--------|---------------|
| 16-Sep-08 | a | Load straw Normal plots | 17.31 | kg/plot |
| | a | Load straw x 2 Plots | 34.63 | kg/plot |
| | a | Load straw x 4 Plots | 69.25 | kg/plot |
| 25-Sep-08 | a | Topped to chop straw | | |
| 14-Oct-08 | a | Plough/ NW | | |
| | a | Power Harrowed | | |
| | a | Accord Drilled | | |
| | s | Hereward tr Anchor | 350.00 | seeds/m2 |
| | a | Rolled | 1.00 | |
| 11-Dec-08 | p | Avadex Excel 15G | 15.00 | kg/ha |
| 11-Mar-09 | f | Double Top | 185.00 | kg/ha |
| 20-Apr-09 | p | Pacifica | 0.50 | kg/ha |
| | p | Biopower | 1.00 | l/ha |
| 29-Apr-09 | f | Nitram | 145.00 | kg/ha |
| 10-May-09 | p | Cherokee | 1.25 | l/ha |
| | p | Cycocel | 2.25 | l/ha |
| | p | Headland Manganese 500 | 1.00 | L in 200 l/ha |
| 03-Jun-09 | p | Opus | 0.80 | L in 200 l/ha |
| | p | Amistar | 1.00 | L in 200 l/ha |
| 05-Jun-09 | f | Nitram | 116.00 | kg/ha |
| 24-Aug-09 | a | Combine harvest, plots for yield | | |
| | a | Sample, bale and weigh straw | | |

09/R/CS/326

GRAIN TONNES/HECTARE

**** Tables of means ****

| | |
|-----------|------|
| Treatment | |
| - | 7.68 |
| 1 | 7.97 |
| 2 | 8.28 |
| 4 | 8.39 |
| Mean | 8.08 |

Standard errors of differences of means

| | |
|--------|-----------|
| Table | Treatment |
| s.e.d. | 0.308 |

Stratum standard errors and coefficients of variation

| Stratum | d.f. | s.e. | cv% |
|----------------|------|-------|-----|
| Blocks.Plots | 9 | 0.436 | 5.4 |
| Grain mean dm% | | 85.6 | |

STRAW TONNES/HECTARE

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

| | |
|-----------|------|
| Treatment | |
| - | 4.27 |
| 1 | 4.23 |
| 2 | 4.67 |
| 4 | 4.71 |
| Mean | 4.47 |

Standard errors of differences of means

| | |
|--------|-----------|
| Table | Treatment |
| s.e.d. | 0.387 |

Stratum standard errors and coefficients of variation

Straw (at 85% dry matter) tonnes/hectare

| Stratum | d.f. | s.e. | cv% |
|---------------------|------|---------|------|
| Blocks.Plots | 9 | 0.548 | 12.3 |
| Straw mean dm% | | 89.4 | |
| Plot area harvested | | 0.00270 | |

09/W/CS/326

GRAIN TONNES/HECTARE

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

| Treatment | |
|-----------|------|
| - | 4.58 |
| 1 | 5.23 |
| 2 | 4.91 |
| 4 | 4.80 |
| Mean | 4.88 |

Standard errors of differences of means

| Table | Treatment |
|--------|-----------|
| s.e.d. | 0.569 |

Stratum standard errors and coefficients of variation

| Stratum | d.f. | s.e. | cv% |
|--------------|------|-------|------|
| Blocks.Plots | 6 | 0.697 | 14.3 |

GRAIN MEAN DM% 88.3

STRAW TONNES/HECTARE

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

| Treatment | |
|-----------|------|
| - | 3.21 |
| 1 | 3.18 |
| 2 | 3.21 |
| 4 | 3.04 |
| Mean | 3.16 |

Standard errors of differences of means

| Table | Treatment |
|--------|-----------|
| s.e.d. | 0.406 |

Stratum standard errors and coefficients of variation

| Stratum | d.f. | s.e. | cv% |
|--------------|------|-------|------|
| Blocks.Plots | 6 | 0.497 | 15.7 |

STRAW MEAN DM% 86.8

Plot area harvested 0.00290