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Results of the Classical and Other Long-term Experiments 2004

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04/R/CS/326 and 04/W/CS/326 - Amount of Straw

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04/R/CS/326 and 04/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 17th year, w. wheat.

For previous years see 87-03/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, cumulative to previous annual dressings:

		R	W
NONE	None	-	-
NORMAL	Normal	2.04	2.70
2 NORMAL	Twice normal	4.08	5.41
4 NORMAL	Four times normal	8.16	10.82

Experimental diary:

Great Knott III (R):

18-Aug-03 : T : : Straw treatments applied.
18-Aug-03 : T : : Chopped straw.
24-Sep-03 : B : : Ploughed 35 cm furrows.
25-Sep-03 : B : : Cultipress
27-Sep-03 : B : : Cultipress
: B : : Combination drilled, Hereward, tr. Sibutol Secur, at
350 seeds/m² with the Accord drill.
21-Oct-03 : B : : Decoy Wetex at 5 kg.
07-Nov-03 : B : : Crystal at 4.0 l in 200 l.
17-Mar-04 : B : : Sulphur Gold at 167 kg. (50 kg N).
09-Apr-04 : B : : tm)Topik at 0.125 l in 100 l.
: B : : tm)Amber at 0.5 l in 100 l.
17-Apr-04 : B : : tm)Ally at 30 g in 200 l.
: B : : tm)Starane XL at 1.5 l in 200 l.
06-May-04 : B : : Sulphur Gold at 467 kg. (140 kg N).
13-May-04 : B : : tm)Opus at 0.75 l in 200 l.
: B : : tm)Moddus at 0.15 l in 200 l.
13-Jun-04 : B : : tm)Folicur at 0.7 l in 200 l.
: B : : tm)Amistar at 0.5 l in 200 l.
: B : : tm)Hallmark with Zeon Technology at 50 ml in 200 l.
31-Aug-04 : B : : Combine harvested plots for yield.
: T : : Straw baled and weighed.

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Experimental diary:

Far Field I (W):

19-Aug-03 : B : : CleanCrop Egret applied at 4.0 l on 200 l.
29-Aug-03 : T : : Straw treatments applied.
29-Sep-03 : B : : Muriate of potash at 250 kg.
05-Oct-03 : B : : Ploughed 30 cm furrows.
06-Oct-03 : B : : Cultipress
07-Oct-03 : B : : Drilled, Consort, tr. Sibutol Secur at 300 seeds/m²
with the Accord drill.
17-Dec-03 : B : : tm)Arelon 500 at 3.5 l in 200 l.
: B : : tm)Treflan at 1.5 l in 200 l.
12-Mar-04 : B : : tm)Cutonic Copper Ultra at 0.25 l in 200 l.
: B : : tm)Aventis Manganese 500 at 1.5 l in 200 l.
18-Mar-04 : B : : Sulphur Gold 30% N, 7.6% S at 167 kg.
29-Mar-04 : B : : Duplosan KV at 1.0 l in 200 l.
19-Apr-04 : B : : tm)Ally at 30 g in 200 l.
: B : : tm)Biotril 24/16 at 0.5 l in 200 l.
: B : : tm)Phase II at 1.0 l in 200 l.
03-May-04 : B : : Sulphur Gold 30% N, 7.6% S at 467 kg.
03-Jun-04 : B : : tm)Opus at 0.5 l in 200 l.
: B : : tm)Twist at 0.75 l in 200 l.
05-Jul-04 : B : : Aphox at 280 g in 200 l.
05-Sep-04 : T : : Combine harvested plots for yield
: T : : Swathed straw
07-Sep-04 : T : : Sampled, baled and weighed straw.

NOTE: (1) Grain and straw samples were taken for N analysis.
(2) Because of operational difficulties while harvesting the grain yield of one plot was lost, with treatment combination 4 NORMAL. An estimated value was used in the analysis.

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GRAIN TONNES/HECTARE

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

STRAW	
NONE	7.59
NORMAL	7.54
2 NORMAL	7.40
4 NORMAL	7.16
Mean	7.42

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

STRAW
0.215

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

Stratum	d.f.	s.e.	cv%
Blocks.Plots	9	0.304	4.1
GRAIN MEAN DM%	82.1		

STRAW TONNES/HECTARE

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

STRAW	
NONE	4.17
NORMAL	4.31
2 NORMAL	4.52
4 NORMAL	4.64
Mean	4.41

STRAW MEAN DM% 85.4

PLOT AREA HARVESTED 0.00284

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GRAIN TONNES/HECTARE

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

STRAW	
NONE	5.38
NORMAL	5.58
2 NORMAL	5.63
4 NORMAL	5.51
Mean	5.53

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

STRAW	
	0.264

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

Stratum	d.f.	s.e.	cv%
Blocks.Plots	5	0.323	5.9
GRAIN MEAN DM%		89.3	

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STRAW TONNES/HECTARE

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

STRAW	
NONE	1.85
NORMAL	1.68
2 NORMAL	1.98
4 NORMAL	2.15
Mean	1.92

STRAW MEAN DM% 90.4

PLOT AREA HARVESTED 0.00305