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Yields of the Field Experiments 2014

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

Rothamsted Research

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14/R/CS/326 and 14/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: A Macdonald and M. J. Glendining,

The 28th year, w. wheat

For previous years see Yield Books for 87-13/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	3.50	2.56
2 NORMAL	Twice normal	7.00	5.12
4 NORMAL	Four times normal	14.00	10.24

Experimental Diary

Great Knott III (R)

Date		Application	Rate	Units
13-Aug-13	a	Straw baled, sampled and loaded on plots	See above	-
02-Oct-13	s	Drilled var Crusoe - exp site and immediate surrounds	350	seeds/m^2
03-Oct-13	a	Power-harrowed - Exp site and immediate surrounds	-	-
05-Oct-13	a	Rolled	-	-
05-Oct-13	p	Sprayed liberator + Defy	lib@0.6	l/ha
			def@2.0	l/ha
15-Oct-13	p	Applied Major Slug Pellets	4	kg/ha
02-Dec-13	p	Sprayed Hallmark	50	ml/ha
07-Mar-14	f	Applied Double Top Fertilizer (1st N application)	148	kg/ha
29-Mar-14	p	Sprayed Artemis, Bravo 500, Moddus and BASF 3C 720	Art@1	l/ha
			Bra@1	l/ha
			Mod@150	ml/ha
			BASF@1.25	l/ha
01-Apr-14	f	Applied Nitram Fertilizer (2nd N application)	261	kg/ha
23-Apr-14	f	Applied Nitram (3rd N application)	261	kg/ha
25-Apr-14	p	Sprayed Ally Max, Kindom, Bravo 500 and Hatchet Xtra	ally@30	g/ha
			king@1.25	l/ha
			bra@1.0	l/ha
			Hatc@1.0	l/ha
16-May-14	p	Sprayed Vortex	1.5	l/ha
20-Jun-14	a	Cut Paths with Iseki and mower	-	-
31-Jul-14	a	Cut Paths - In and around exp	-	-

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05-Sep-14	a	Sampo -Harvested All Plots for Grain Yield	-	-
08-Sep-14	a	Sampled, Baled and Weighed Straw - All plots with conventional baler	-	-
10-Sep-14	a	Baled and Removed all straw swath	-	-

Far Field I (W)

Date		Application	Rate	Units
11-Sep-13	a	Straw loaded	See above	-
13-Sep-13	a	Plough	-	-
20-Sep-13	s	Drilled var. Crusoe trt Redigo Deter	400	seeds/m^2
20-Sep-13	a	Power harrowed	-	-
22-Sep-13	a	Rolled	-	-
26-Sep-13	a	Put up Rabbit Fencing	-	-
30-Sep-13	p	Sprayed Crystal	4	l/ha
30-Sep-13	p	Sprayed Hurricane	0.1	l/ha
30-Sep-13	p	Sprayed Dictate	0.2	l/ha
18-Nov-13	p	Sprayed Hallmark with Zeon Technology	50	ml/ha
28-Mar-14	f	Applied Double Top Fertilizer (1st N application)	148	kg/ha
01-Apr-14	p	Sprayed Sprinter in 147 l/ha water volume	1.5	l/ha
15-Apr-14	p	Sprayed BASF 3C in 200 l/ha water volume.	1.25	l/ha
16-Apr-14	p	Sprayed Moddus in 200 l/ha water volume.	0.2	l/ha
17-Apr-14	p	Sprayed Kingdom in 200 l/ha water volume.	1.25	l/ha
18-Apr-14	p	Sprayed Bravo 500 in 200 l/ha water volume.	1	l/ha
19-Apr-14	p	Sprayed Hunter in 200 l/ha water volume.	1	l/ha
16-Apr-14	f	Applied Nitram (2nd N application)	203	kg/ha
07-May-14	f	Applied Nitram (3rd N application)	203	kg/ha
21-May-14	p	Sprayed Vortex in 150 l/ha water volume.	1.5	l/ha
06-Jun-14	p	Sprayed Cello in 150 l/ha water volume.	0.55	l/ha
06-Jun-14	p	Sprayed Amistar in 150 l/ha water volume.	0.25	l/ha
06-Jun-14	p	Sprayed Hallmark in 150 l/ha water volume.	40	l/ha
24-Aug-14	a	Combined plots for yield	-	-
06-Sep-14	a	Straw weights done	-	-
11-Sep-14	p	Sprayed Firebrand in 200 l/ha water volume. Problem with "Auto control" on sprayer, switched to manual.	1	l/ha
12-Sep-14	p	Sprayed Samurai in 200 l/ha water volume. Problem with "Auto control" on sprayer, switched to manual.	4	l/ha
02-Oct-14	p	Sprayed Gallup 360 in 200l/ha water volume	4	l/ha
02-Oct-14	p	Sprayed Firebrand in 200l/ha water volume	1	l/ha

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14/R/CS/326

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GRAIN TONNES/HECTARE

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

       Straw_
            -      9.19
            1      9.26
            2      9.18
            4      9.01

         Mean      9.16

Standard errors of differences of means
---------------------------------------

Table                Straw_
rep.                      4
d.f.                      9
s.e.d.                0.148


Stratum standard errors and coefficients of variation
=====================================================

Variate: Grain85% Grain (at 85% dry matter) tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       3         0.211         2.3
Blocks.Plots                 9         0.210         2.3


Grain mean dm% 84.8

STRAW TONNES/HECTARE

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

            Straw_
            -      5.50
            1      5.72
            2      5.76
            4      5.53

         Mean      5.63

Standard errors of differences of means
---------------------------------------

Table                Straw_
rep.                      4
d.f.                      9
s.e.d.                0.306
```


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Stratum standard errors and coefficients of variation
=====================================================

Variate: Straw85% Straw (at 85% dry matter) tonnes/hectare

Stratum                    d.f.          s.e.         cv%

Blocks                        3         0.178         3.2
Blocks.Plots                  9         0.433         7.7


 Straw mean DM% 94.8


Plot area harvested 0.00284
```

14/W/CS/326

```
GRAIN TONNES/HECTARE

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

       Straw_
            -      7.92
            1      8.47
            2      7.71
            4      6.88

         Mean      7.75

Standard errors of differences of means
---------------------------------------

Table                Straw_
rep.                      3
d.f.                      6
s.e.d.                0.701


Stratum standard errors and coefficients of variation
=====================================================

Variate: Grain85% Grain (at 85% dry matter) tonnes/hectare

Stratum                    d.f.          s.e.         cv%

Blocks                        2         0.330         4.3
Blocks.Plots                  6         0.858        11.1


 Grain mean DM% 87.4
```


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STRAW TONNES/HECTARE

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

        Straw_
            -       4.30
            1       4.40
            2       4.51
            4       4.96

         Mean       4.54

Standard errors of differences of means
---------------------------------------

Table                Straw_
rep.                      3
d.f.                      6
s.e.d.                0.171


Stratum standard errors and coefficients of variation
=====================================================

Variate: Straw85% Straw (at 85% dry matter) tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       2         0.128         2.8
Blocks.Plots                 6         0.210         4.6


 Straw mean DM% 88.8


Plot area harvested 0.00305
```


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