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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 def@2.0	l/ha 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 (1 st N application)	148	kg/ha
29-Mar-14	p Sprayed Artemis, Bravo 500, Moddus and BASF 3C 720	Art@1 Bra@1 Mod@150 BASF@1.25	l/ha l/ha ml/ha l/ha
01-Apr-14	f Applied Nitram Fertilizer (2 nd N application)	261	kg/ha
23-Apr-14	f Applied Nitram (3 rd N application)	261	kg/ha
25-Apr-14	p Sprayed Ally Max, Kindom, Bravo 500 and Hatchet Xtra	ally@30 king@1.25 bra@1.0 Hatc@1.0	g/ha l/ha l/ha 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	-	-

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 (1 st 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 (2 nd N application)	203	kg/ha
07-May-14	f	Applied Nitram (3 rd 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

14/R/CS/326

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

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

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

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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