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Yields of the Field Experiments 2014

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R/CS/477 & W/CS/478 Continuous Maize

Rothamsted Research

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14/R/CS/477

CONTINUOUS MAIZE

Object: To monitor the fate of organic carbon in the soil organic matter – Hoosfield

Sponsors: A. J. Macdonald

The 18th year, forage maize and s. barley

For previous years see Yield Books for 97-13/R/CS/477

Design: 3 randomised blocks of 6 plots.

Plot dimensions: 12.0 x 25.0

Treatments:-

CROP Crop and straw treatments:

M Continuous maize, stubble incorporated
(M)B S. barley after five years maize, stubble incorporated
MT Maize, stubble plus 10 t maize tops incorporated
B(M) S. barley, after ten years of Maize, straw removed
BT Continuous spring barley, straw removed plus 10 t maize tops incorporated
B Continuous spring barley, straw removed
Note: Cropping was changed from Maize to S. barley on the BM treatment in 2010, but returned to maize again in 2013.

Experimental diary

Date		Application	Rate	Units
01-Oct-13	a	Topping	-	-
08-Oct-13	a	ploughed	-	-
08-Oct-13	a	Applied Maize tops	10	t/ha
08-Oct-13	f	Applied MOP Fertiliser	181	kg/ha
08-Oct-13	f	Applied TSP Fertilizer	171	kg/ha
26-Mar-14	p	Sprayed Firebrand	1.0	l/ha
26-Mar-14	p	Sprayed Samurai	2.0	l/ha
31-Mar-14	p	Spring-tined All site and surrounds	-	-
31-Mar-14	p	Power-harrowed All site and surrounds	-	-
02-Apr-14	s	Drilled Barley var. Tipple	350	seeds/m^2
04-Apr-14	a	Rolled Barley Plots	-	-
16-Apr-14	a	Applied Doubletop N Fertilizer to all plots	356	kg/ha
15-May-14	a	Flexi-tined Maize Plots	-	-
15-May-14	a	Power-harrowed Maize Plots	-	-
16-May-14	s	Drilled Maize plots var. Hudson dr mesurol	11.5	seeds/m^2
20-May-14	p	Sprayed Simba SX - Barley only	20	g/ha
20-May-14	p	SprayedHatchet Xtra - Barley only	600	ml/ha
20-May-14	p	Sprayed Cello - Barley only	600	ml/ha
18-Jun-14	p	Sprayed Mobius - Barley only	400	ml/ha
19-Jun-14	p	Sprayed Samson Extra 6% - Maize only	500	ml/ha
19-Jun-14	p	Sprayed Callitso - Maize only	750	ml/ha
05-Sep-14	a	Claas Round Baler - Baled and Removed OE	-	-

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		Straw - This is the area that needs to be removed in order for the plots to be harvested.		
05-Sep-14	a	Sampo Harvested all barley plots for yield	-	-
30-Sep-14	a	Harvested all maize plots for yield - harvested by hand	-	-
30-Sep-14	a	Harvested and removed all leftover Maize - Maize plots only	-	-
01-Oct-14	a	Harvesting Leftover maize from Trial - all maize harvested and removed	-	-

NOTE: Samples of barley grain and maize (whole crop) were taken for chemical analyses.

```
MAIZE

WHOLE CROP TONNES/HECTARE (100% DM)

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

    Treatment
            M     10.71
           MT     11.24
         M(B)     14.04
         (B)M     14.83

         Mean     12.71
Standard errors of differences of means
---------------------------------------

Table            Treatment
rep.                     3
d.f.                     6
s.e.d.               1.458

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

Variate: TPlDm Total plant dry matter tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       2         1.218         9.6
Blocks.Plots                 6         1.785        14.0

MEAN DM% 30.8

Plot area harvested 0.00108
```

Note: The barley yields were not recorded because of a problem with the Sampo plot-combine. Consequently, these yields have been excluded.

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14/W/CS/478

CONTINUOUS MAIZE

Object: To monitor the fate of organic carbon in the soil organic matter – Woburn, Stackyard AI

Sponsors: A. J. Macdonald

The 18th year, forage maize and s. barley

For previous years see Yield Books for 97-13/W/CS/478

Design: 3 randomised blocks of 6 plots.

Plot dimensions: 9.0 x 25.00

Treatments:-

CROP Crop and straw treatments:

M Continuous maize, stubble incorporated
(M)B S. barley after five years maize, stubble incorporated
MT Maize, stubble plus 10 t maize tops incorporated
B(M) S. barley, after ten years of maize, straw removed
BT Continuous spring barley, straw removed plus 10 t maize tops incorporated
B Continuous spring barley, straw removed

Note: Cropping was changed from Maize to S. barley on the BM treatment in 2010, but returned again to maize in 2013.

NOTE: Samples of barley grain and maize (whole crop) were taken for chemical analyses.

Experimental diary

Date		Application	Rate	Units
07-Oct-13	f	Applied TSP Fertilizer	171	kg/ha
08-Oct-13	f	Applied MOP Fertiliser	181	kg/ha
16-Oct-13	a	Applied Maize tops to Plots 2,4,12,13,16 and 17.	10	t/ha
30-Oct-13	a	Ploughed	-	-
20-Jan-14	p	Sprayed Samurai in 200 l/ha water volume.	4.0	l/ha
24-Feb-14	p	Spring tined	-	-
13-Mar-14	s	Drilled Barley var. Tipple tr Raxil Star	350	seeds/m^2
14-Mar-14	a	Rolled	-	-
01-Apr-14	p	Sprayed Sprinter in 147 l/ha water	1.5	l/ha
30-Apr-14	p	Sprayed Hallmark with Zeon Technology in 200 l/ha water volume	40	ml/ha
12-May-14	f	Applied Doubletop N Fertilizer to all plots	356	kg/ha
19-May-14	a	Spring Tined. Maixe prep	-	-
20-May-14	s	Drilled Maize plots var. Hudson tr. Mesural	10.1	seeds/m^2
20-May-14	a	Rolled prior to drilling	-	-
21-May-14	p	Sprayed Refine Max - in 150 l/ha water volume barley only	75	g/ha
21-May-14	p	Sprayed Kingdom - in 150 l/ha water volume - barley only	1.25	l/ha
21-May-14	p	Sprayed Bravo 500 - in 150 l/ha water volume - barley only	1.0	l/ha

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21-May-14	p	Sprayed Hatchet Xtra - in 150 l/ha water volume - barley only	0.75	l/ha
13-Jun-14	p	Sprayed Fezan - Barley only	0.6	l/ha
13-Jun-14	p	Sprayed Hallmark - Barley only	40	ml/ha
01-Jul-14	p	Sprayed Callisto in 200 l/ha water volume	0.75	l/ha
01-Jul-14	p	Sprayed Samson Extra in 200 l/ha water volume	0.5	l/ha
24-Aug-14	a	Combined barley plots for yield	-	-
06-Sep-14	a	Baled and Removed	-	-
02-Oct-14	a	Cut Maize for yields	-	-
02-Oct-14	a	Mowed and Baled Discards	-	-
02-Oct-14	p	Sprayed Gallup 360 in 200 l/ha water volume.	4.0	l/ha
02-Oct-14	p	Sprayed Firebrand in 200 l/ha water volume.	1.0	l/ha

```
MAIZE WHOLE CROP TONNES/HECTARE (100% DM)

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

    Treatment
            M      2.69
           MT      5.52
         M(B)      3.54
         (B)M      5.68

         Mean      4.36

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

Table            Treatment
rep.                     3
d.f.                     6
s.e.d.               0.949

Stratum standard errors and coefficients of variation
=====================================================
Stratum                  d.f.          s.e.         cv%

Blocks                      2         1.011        23.2
Blocks.Plots                6         1.162        26.7

Mean DM% 34.6

Plot area harvested 0.00108
```


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14/W/CS/478

SPRING BARLEY

GRAIN TONNES/HECTARE

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

Treatment	
BT	4.10
B	3.26
Mean	3.68

Standard errors of differences of means

Table	Treatment
rep.	3
d.f.	2
s.e.d.	0.516

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

Stratum	d.f.	s.e.	cv%
Blocks	2	0.105	2.9
Blocks.Plots	2	0.632	17.2

Grain mean DM% 84.8

Plot area harvested 0.00525

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