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Yields of the Field Experiments 2015

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

Rothamsted Research

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15/R/CS/477

CONTINUOUS MAIZE

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

Sponsors: A. J. Macdonald

The 19th and final year, forage maize and s. barley

Notes: This experiment was discontinued from harvest 2015. For previous years see Yield Books for 97-14/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
02/10/2014	f	Applied MOP	181	kg/ha
02/10/2014	f	Applied TSP	171	kg/ha
08/10/2014	f	Applied Maize tops to plots 3,6,9,12,16,18	10	t/ha
05/03/2015	p	Sprayed Samurai	2.5	l/ha
05/03/2015	p	Sprayed Fire Brand	1	l/ha
18/03/2015	s	Drilled Spring Barley, Tipple trt Beret Multi	350	seeds/m^2
18/03/2015	a	Rolled all new drilling	-	-
14/04/2015	a	Powerharrowed Maize Plots 1, 3, 4, 5, 7, 8, 9, 11, 13, 14, 15 + 18		
15/04/2015	s	Drilled Maize cv Severus trt measurol - Plots 1, 3, 4, 5, 7, 8, 9, 11, 13, 14, 15 + 18	10	seeds/m^2
16/04/2015	f	Applied Doubletop Fertiliser onto all Plots	356	kg/ha
13/05/2015	p	Sprayed Kingdom onto Barley	1.5	l/ha
13/05/2015	p	Sprayed Bravo 500 onto Barley	1.3	l/ha
15/06/2015	p	Sprayed Kingdom onto Barley only	1.3	l/ha
17/06/2015	p	Sprayed Samson Extra - sprayed Maize ONLY	500	ml/ha
17/06/2015	p	Sprayed Callisto - sprayed Maize ONLY	750	ml/ha
19/06/2015	p	Sprayed Axial onto Barley	300	ml/ha
19/06/2015	p	Sprayed Adigor onto Barley	1	l/ha

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15/07/2015	p	Sprayed Samurai sprayed weeds between maize rows only - knapsack used with shroud.	5	l/ha
02/09/2015	a	Harvested commercial OEs	-	-
07/09/2015	a	Harvested All Barley Plots for grain yield	-	-
09/09/2015	a	Removed Bales from commercial area	-	-
17/09/2015	a	removed round bales from field	-	-
21/09/2015	a	Harvested all Maize Plots for yield by hand	-	-
29/09/2015	a	Harvested all maize 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      1.73
           MT      2.49
         M(B)      2.62
         (B)M      3.85

         Mean      2.67

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

Table            Treatment
rep.                     3
d.f.                     6
s.e.d.               0.912

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

Variate: TPlDm Total plant dry matter tonnes/hectare

Stratum                   d.f.          s.e.         cv%

Blocks                       2         0.254         9.5
Blocks.Plots                 6         1.117        41.8

MEAN DM% 30.8

Plot area harvested 0.00108
```

Note: Maize yields were very poor in 2015 because of problems with weed control.

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SPRING BARLEY

WHOLE CROP TONNES/HECTARE (85% DM)

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

    Treatment
           BT      7.06
            B      6.46

         Mean      6.76

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

Table            Treatment
rep.                     3
d.f.                     2
s.e.d.               0.159

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

Variate: TPlDm Total plant dry matter tonnes/hectare

Stratum                  d.f.          s.e.         cv%

Blocks                      2         0.490         7.3
Blocks.Plots                2         0.195         2.9

MEAN DM% 30.8

Plot area harvested 0.00525
```


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15/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 19th and final year, forage maize and s. barley

Notes: This experiment was discontinued from harvest 2015. For previous years see Yield Books for 97-14/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

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
21/10/2014	f	Applied Maize tops - Plots 2,4,12,13,16 and 17	10	t/ha
22/10/2014	f	Applied MOP Fertiliser	181	kg/ha
22/10/2014	f	Applied TSP	171	kg/ha
02/03/2015	a	Spring tined	-	-
13/03/2015	s	Drilled Spring Barley - Tipple dr Beret Multi - Plots 1,2,4,15,16,18	350	seeds/m^2
13/03/2015	a	Rolled barley plots	-	-
20/04/2015	p	Sprayed Hallmark in 200 l/ha water volume - Barley only	40	ml/ha
20/04/2015	p	Sprayed Compitox Plus in 200 l/ha water volume - Barley only	1	l/ha
20/04/2015	s	Drilled Maize plots - Severus dr Mesurol	10.2	seeds/m^2
24/04/2015	f	Applied Double Top Fertilizer - All plots	356	kg/ha
30/05/2015	p	Sprayed Sprinter in 131 l/ha water volume - Barley only	1.5	l/ha
30/05/2015	p	Sprayed Refine Max in 131 l/ha water volume - Barley only	75	g/ha
30/05/2015	p	Sprayed Mobius in 131 l/ha water volume - Barley only	0.6	l/ha
30/05/2015	p	Sprayed Crescent in 131 l/ha water volume - Barley only	0.75	l/ha
15/06/2015	p	Sprayed Samson Extra 6% in 200 l/ha water volume - Maize Only	0.5	l/ha
15/06/2015	p	Sprayed Callisto in 200 l/ha water volume - Maize Only	0.75	l/ha
07/07/2015	a	Cut paths	-	-
11/09/2015	a	Combined plots for yield - Sampo	-	-
11/09/2015	a	Combined O+Es - Claas	-	-

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15/W/CS/478

MAIZE WHOLE CROP TONNES/HECTARE (100% DM)

Note: No maize yields were taken due to poor crop performance, resulting from poor weed control. Samples were taken by hand for analysis and archiving only.

```
SPRING BARLEY

GRAIN TONNES/HECTARE

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

    Treatment
           BT      3.60
            B      3.14

         Mean      3.37

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

Table            Treatment
rep.                     3
d.f.                     2
s.e.d.               0.130

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

Stratum                  d.f.          s.e.         cv%

Blocks                      2         0.005         0.2
Blocks.Plots                2         0.160         4.7

Grain mean DM% 86.8

Plot area harvested 0.00525
```


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