ROTHAMSTED RESEARCH

Yields of the Field Experiments 2011

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

Rothamsted Research

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11/R/CS/477

CONTINUOUS MAIZE

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

Sponsors: A. J. Macdonald

The 15th year, forage maize and s. barley

For previous years see Yield Books for 97-10/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

Experimental diary

			Rate	Unit
29-Sep-10	a	Spread maize on plots - 300 kg per plot, on plots 3,6,9,12,16,18.	10	t/ha
30-Sep-10	p	Sprayed Barbarian - Water volume = 200 l/ha	4	l/ha
07-Oct-10	f	Triple Super Phosphate - Whole Experiment	171	kg/ha
07-Oct-10	f	Muriate of Potash - To whole experiment	181	kg/ha
10-Oct-10	a	Ploughed		
24-Mar-11	a	Spring tined		
25-Mar-11	s	Drilled Optic sp Barley trt Beret Multi @ 350 seeds/m^2. See plan for plots drilled barley and plots to be drilled Maize	153	kg/ha
25-Mar-11	a	Rolled - Spring barley plots and O+Es		
13-Apr-11	a	Flexi Tined - Ready to drill		
26-Apr-11	s	Drilled Hudson tr Mesurol @ 10.2 seeds/m^2 - Maize plots.		
26-Apr-11	a	Rolled maize plots		
26-Apr-11	p	Power harrow (Roadtare) Maize plots		
04-May-11	f	Applied Double Top Fertilizer - Barley and Maize	356	kg/ha

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09-May-11	p	Sprayed Acanto Prima,	1.6	kg/ha
		Harmony M SX	100	g/ha
		and Headland Charge in 200 l water.	0.75	l/ha
02-Jun-11	a	Cut paths		
14-Jun-11	p	Sprayed Bravo 500,	1.0	l/ha
		Flexity	0.2	l/ha
		and Mobius	0.43	l/ha
20-Jun-11	a	Cut paths		
30-Jun-11	p	Sprayed Callisto	1.0	l/ha
		and Samson in 200 l water	0.5	l/ha
30-Jul-11	p	Sprayed Statis 360 in 200l water - Sp barley only.	3	l/ha
01-Aug-11	a	Cut paths		
22-Aug-11	a	Combined s. barley for yields		
23-Sep-11	a	Cut Maize for yields - and discards		
12-Oct-11	a	Rolled		

MAIZE

WHOLE CROP (AT 100% DRY MATTER) TONNES/HECTARE

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

Treatment	
M	7.14
MT	6.60
Mean	6.87

Standard errors of differences of means

Table	Treatment
s.e.d.	0.451

Stratum standard errors and coefficients of variation

Stratum	d.f.	s.e.	cv%
Blocks.Plots	2	0.552	8.0

MEAN DM% 18.4

PLOT AREA HARVESTED 0.00108

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SPRING BARLEY

GRAIN TONNES/HECTARE

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

Treatment	
(M)B	4.98
BT	5.35
B	4.66
B(M)	6.06
Mean	5.26

Standard errors of differences of means

Table	Treatment
s.e.d.	0.296

Stratum standard errors and coefficients of variation

Stratum	d.f.	s.e.	cv%
Blocks.Plots	6	0.362	6.9

Grain mean dm% 82.4

Plot area harvested 0.00525

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11/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 15th year, forage maize and s. barley

For previous years see Yield Books for 97-10/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

Experimental diary

			Rate	**Unit**
23-Nov-10	a	Spread chopped maize as scheduled. - Relevant plots only.		
23-Nov-10	a	Ploughed. - Dowdeswell 4 furrow at 14".		
25-Mar-11	a	Flexi Tined.		
25-Mar-11	s	Combination Drilled Optic @ 350 seeds/m^2. Cambridge rolled - Spring barley plots only.		
25-Apr-11	f	Broadcast Double Top. 27%N, 30% SO_3.	356	kg/ha.
05-May-11	a	Rotary Harrowed. Drilled Hudson dressed Mesurol. @ 10.2 seeds/m^2 - Maize plots.		
20-May-11	p	Sprayed Thor in 200l water - Spring Barley	20	g/ha.
07-Jun-11	p	Sprayed Callisto	1.0	l/ha
		with Samson in 220 l water - Maize plots only.	0.75	l/ha
01-Sep-11	a	Combined s. barley for yield		
02-Sep-11	a	Combined O+Es		
07-Sep-11	a	Baled and removed straw		
26-Sep-11	a	Cut Maize for yields		
06-Oct-11	a	Cut discards - Cut remainder of maize, bale and clear bales		

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MAIZE

WHOLE CROP (AT 100% DRY MATTER) TONNES/HECTARE

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

Treatment	
M	9.92
MT	10.72
Mean	10.32

Standard errors of differences of means

Table	Treatment
s.e.d.	1.663

Stratum standard errors and coefficients of variation

Stratum	d.f.	s.e.	cv%
Blocks.Plots	2	2.036	19.7

MEAN DM% 32.7

PLOT AREA HARVESTED 0.00108

SPRING BARLEY

GRAIN TONNES/HECTARE

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

Treatment	
(M)B	3.80
BT	3.96
B	3.50
B(M)	4.56
Mean	3.95

Standard errors of differences of means

Table	Treatment
s.e.d.	0.150

Stratum standard errors and coefficients of variation

Stratum	d.f.	s.e.	cv%
Blocks.Plots	6	0.183	4.6

Grain mean dm% 83.4 Plot area harvested 0.00525

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