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Yields of the Field Experiments

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R/BK/1 Broadbalk

Rothamsted Research

Rothamsted Research (2016) *R/BK/1 Broadbalk ;* Yields Of The Field Experiments , pp 7 - 16 **- DOI: https://doi.org/10.23637/ERADOC-1-249**

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16/R/BK/1

BROADBALK

Object: To study the effects of organic manures and inorganic fertilisers on continuous w. wheat and wheat in rotation. From 1968 two three-year rotations were included: potatoes, beans, w. wheat and fallow, w. wheat, w. wheat. In 1979 the first rotation was changed to fallow, potatoes, w. wheat. In 1980 the second rotation reverted to continuous w. wheat. Since 1985 part of the second rotation was added to the first to extend the rotation to fallow, potatoes, w. wheat, w. wheat, w. wheat. In 1996 the fallow was replaced by w. oats and potatoes replaced by maize in 1997.
The 173rd year, w. wheat, w. oats and forage maize.
For previous years see 'Details' 1967 and 1973, Station Report for 1966, pp. 229-231; Station Report for 1968, Part 2; Station Report for 1982, Part 2, pp 5-44 and Yield Books for 74-15/R/BK/1.

Areas harvested[a]:

	Section	
Wheat:	0	0.00320
	1	0.00589
	2,4,7 and 6	0.00487
	9	0.00512
Oats:	3	0.00487
Maize:	5	0.00162

[a] Harvest areas in the 2007-2010 yield books were incorrectly assigned, but yields were correct.

Treatments:
In 2001 a number of the treatments were changed. The treatments are now:-
Whole plots

PLOT	Fertilizers and organic manures Treatments Plot	From 2001
01 (FYM)N4	01	N4
21FYMN3	2.1	FYM N2 (1)
22FYM	2.2	FYM
03Nil	03	None
05(P)KMg	05	(P) K Mg
06N1 (P) KMg	06	N1 (P) K Mg
07N2(P)KMg	07	N2 (P) K Mg
08N3(P)KMg	08	N3 (P) K Mg
09N4(P)KMg	09	N4 (P) K Mg
10N4	10	N4
11N4PMg	11	N4 P Mg
12N1+3+1(P)K2Mg2	12	N1+3+1 (P) K2 Mg2 (2)
13N4PK	13	N4 P K
14N4PK*(Mg*)	14	N4 P K* (Mg*)
15N5(P)KMg	15	N5 (P) K Mg
16N6(P)KMg	16	N6 (P) K Mg
17N1+4+1PKMg	17	N1+4+1 P K Mg
18N1+2+1PKMg	18	N1+2+1 P K Mg
19N1+1+1KMg	19	N1+1+1 K Mg
20N4KMg	20	N4 K Mg

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(1) FYM N3 since 2005
(2) N1+3+1 (P) KMg since 2006

W. oats; Nitrogen and farmyard manure were not applied.

N1, N2, N3, N4, N5, N6: 48, 96, 144, 192, 240, 288 kg N as 33.5% N; to be applied at the same time as the second dressings in the split nitrogen plots for wheat and to the seedbed for forage maize.

Split N to wheat

N1+1+1, 1+2+1 etc: Rates as above. Timings: first two weeks of March, GS31 or mid-April (whichever comes first) and GS37/mid-May.

Split N to forage maize

N2+1, 2+2, 2+3,2+4: Rates as above. Timings: to the seedbed and post-emergence.
P: 35 kg P as triple superphosphate
(P): (none since 2001), to be reviewed in 2015/16.
K: 90 kg K as potassium sulphate.
K2: 180 kg K as potassium sulphate (plus 450 kg K autumn 2000 only)
K*: 90 kg K as potassium chloride
Mg: 12 kg Mg as kieserite.
Mg2: 24 kg Mg as kieserite.(plus 60kg Mg, autumn 2000 only).
(Mg*): (none since 2001), to be reviewed in 2015/16
FYM: Farmyard manure at 35 t

Previous treatment:-
Whole plots

PLOT		Fertilizers and organic manures:-		
	Plot	Treatments until 1967	Treatments from 1968	Treatments from 1985 – 2000
01DN4PK	01	-	D N2 P K	D N4 P K
21DN2	21	D	D N2	D N2
22D	22	D	D	D
030	03	None	None	None
05F	05	P K Na Mg	P K (Na) Mg	PK Mg
06N1F	06	N1 P K Na Mg	N1 P K (Na) Mg	N1 P K Mg
07N2F	07	N2 P K Na Mg	N2 P K (Na) Mg	N2 P K Mg
08N3F	08	N3 P K Na Mg	N3 P K (Na) Mg	N3 P K Mg
09N4F	09	N*1 P K Na Mg	N4 P K (Na) Mg	N4 P K Mg
10N2	10	N2	N2	N2
11N2P	11	N2 P	N2 P	N2 P
12N2PNA	12	N2 P Na	N2 P Na	N2 P Na
13N2PK	13	N2 P K	N2 P K	N2 P K
14N2PKMG	14	N2 P Mg	N2 P K Mg	N2 P K Mg
15N5F	15	N2 P K Na Mg	N3 P K(Na) Mg	N5 P K Mg
16N6F	16	N*2 P K Na Mg	N2 P K (Na) Mg	N6 P K Mg
17N1+3FH	17	N2 (A)	N2 ½[P K (Na) Mg]	N1+3 ½[P K Mg] (A)+
18N0+3FH	18	P K Na Mg (A)	N2 ½[P K (Na) Mg]	N0+3 ½[P K Mg] (A)+
19(C)	19	C	C	(C) (since 1989)
20N2KMG	20	N2 K Na Mg	N2 K (Na) Mg	N2 K Mg

(A) Alternating each year

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+ This change since 1980. Treatments shown are those to w.wheat; autumn N alternates. Maize received N3 ½ [PK Mg] on both plots 17 and 18. These treatments shown incorrectly in 1999-2002 Yield books.
W. oats; Nitrogen and dung were not applied.

N1, N2, N3, N4, N5, N6:	48, 96, 144, 192, 240, 288 kg N as sulphate of ammonia until 1967, except N* which was nitrate of soda. All as 'Nitro-Chalk' in spring from 1968 to 1985, as 34.5% N since 1986.
N0+3; N1+3:	None in autumn + 144 kg N in spring; 48 kg N in autumn + 144 kg N in spring.
P:	35 kg P as triple superphosphate in 1974 and since 1988, single superphosphate in other years
K:	90 kg K as sulphate of potash
Na:	55 kg Na as sulphate of soda
(Na):	16 kg Na as sulphate of soda until 1973
Mg:	30kg Mg annually to Plot 14 (applied at 26 kg 1990 to 2000), 35 kg Mg every third year to other plots since 1974 (applied at 30 kg in 1991, 1994, 1997 and 2000 and at 15 kg on half rate treatments). All as kieserite since 1974, previously as sulphate of magnesia annually.
D:	Farmyard manure at 35 t
(C):	Castor meal to supply 96 kg N until 1988, none since
F:	Full rate P K (Na) Mg as above
H:	Half rate of above.

Strips of sub-plots: Until 1967 wheat alone was grown on the experiment, with some bare fallowing. From 1968, the experiment was divided into 10 sections with the following cropping:-

SECTION

Section	1	9	0*	8+	6**	5	3	7	4	2
Year										
1968	W	W	W	W	F	W	W	P	W	BE
1969	W	W	W	W	W	F	W	BE	P	W
1970	W	W	W	W	W	W	F	W	BE	P
1971	W	W	W	W	F	W	W	P	W	BE
1972	W	W	W	F	W	F	W	BE	P	W
1973	W	W	W	W	W	W	F	W	BE	P
1974	W	W	W	W	F	W	W	P	W	BE
1975	W	W	W	W	W	F	W	BE	P	W
1976	W	W	W	W	W	W	F	W	BE	P
1977	W	W	W	W	F	W	W	P	W	BE
1978	W	W	W	W	W	F	W	BE	P	W
1979	W	W	W	W	W	W	F	W	P	F
1980	W	W	W	W	W	W	W	F	W	P
1981	W	W	W	F	W	W	W	P	F	W
1982	W	W	W	W	W	W	W	W	P	F
1983	W	W	W	W	W	W	W	F	W	P
1984	W	W	W	W	W	W	W	P	F	W
1985	W	W	W	W	W	F	W	W	P	W
1986	W	W	W	W	W	P	F	W	W	W
1987	W	W	W	W	W	W	P	W	W	F
1988	W	W	W	F	W	W	W	F	W	P
1989	W	W	W	W	W	W	W	P	F	W
1990	W	W	W	W	W	F	W	W	P	W

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Section Year	1	9	0*	8+	6**	5	3	7	4	2
1991	W	W	W	W	W	P	F	W	W	W
1992	W	W	W	W	W	W	P	W	W	F
1993	W	W	W	W	W	W	W	F	W	P
1994	W	W	W	F	W	W	W	P	F	W
1995	W	W	W	W	W	F	W	W	P	W
1996	W	W	W	W	W	P	O	W	W	W
1997	W	W	W	W	W	W	M	W	W	O
1998	W	W	W	W	W	W	W	O	W	M
1999	W	W	W	W	W	W	W	M	O	W
2000	W	W	W	W	W	O	W	W	M	W
2001	W	W	W	F	W	M	O	W	W	W
2002	W	W	W	W	W	W	M	W	W	O
2003	W	W	F	W	W	W	W	O	W	M
2004	W	W	F	W	W	W	W	M	O	W
2005	W	W	W	W	W	O	W	W	M	W
2006	W	W	W	W	W	M	O	W	W	W
2007	W	W	W	W	W	W	M	W	W	O
2008	W	W	W	F	W	W	W	O	W	M
2009	W	W	W	W	W	W	W	M	O	W
2010	W	W	W	W	W	O	W	W	M	W
2011	W	W	W	W	W	M	O	W	W	W
2012	W	W	W	W	W	W	M	W	W	O
2013	W	W	W	W	W	W	W	O	W	M
2014	W	W	W	W	W	W	W	M	O	W
2015[++]	W	W	W	F	W	O	W	W	M	W
2016	W	W	W	F	W	M	O	W	W	W

W = w. wheat, O = w. oats (spring oats 2001), P = potatoes, BE = s. beans, F = fallow, M = forage maize
* Straw incorporated since autumn 1986. ** No sprays except weedkillers since 1985.
+ No weedkillers.
[++] Spring Wheat in 2015

NOTES:

(1) For a fuller record of treatments see 'Details' etc.

(2) From autumn 1975 to autumn 1986, chalk was applied at 2.9t each autumn to all plots in sets of Sections on a three-year cycle. Year 1: Sections 1, 2, 3. Year 2: Sections 6, 7, 8, 9. Year 3: Sections 0, 4, 5. From autumn 1988 until autumn 1992 a five-year cycle was used. Year 1: Sections 1, 3. Year 2: Sections 2, 8. Year 3: Sections 7, 9. Year 4: Sections 4, 6. Year 5: Sections 0, 5 (omitted). No chalk was applied after autumn 1991 until autumn 2007 when differential amounts were applied to selected plots (see "Results 2008").

(3) In 2003 and 2004 section 0 was used for an experiment (CS/595) investigating different herbicides to control *Equisetum arvense*.

(4) In 2013 the wheat variety changed from Hereward to Crusoe, but it was sown very late (22nd February 2013) because of the very wet autumn and winter of 2012-13.

(5) Spring wheat (var Mulika) and winter oats (var Gerald) were sown in March 2015, instead of in autumn/winter 2014, because the very wet soil conditions in autumn 2014 prevented sowing of a winter crop. The whole site was spring-tine cultivated in March 2015 instead of being ploughed. Section 8 was left in bare fallow and had two in-season cultivations (inversion ploughing) to control weeds.

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Experimental Diary:

Date		Application	Rate	Units
All Sections				
01/10/2015	f	Applied MOP Fertiliser - Strip 14; All Sections	181	kg/ha
01/10/2015	f	Applied FYM - Strips 2.2 and 2.1; All Sections except Section 3	35	t/ha
01/10/2015	a	Ploughed (Thrown Southwards)	-	-
01/10/2015	f	Applied TSP - To strips 11, 13, 14, 17 + 18; All Sections	171	kg/ha
02/10/2015	a	Started Ploughing all field (Thrown Northwards)	-	-
04/10/2015	a	Cultipressed	-	-
12/10/2015	a	Powerharrowed	-	-
15/10/2015	a	Ring Rolled	-	-
11/11/2015	a	Hedge Cutting	-	-
12/11/2015	a	Hedge Cutting	-	-
07/01/2016	a	Erected Electric Fence (West end to stop rabbits)	-	-
11/04/2016	f	Applied SOP - Strips 5, 6, 7, 8, 9, 12, 13, 15, 16, 17, 18, 19 + 20; All Sections	217	kg/ha
13/04/2016	f	Applied Kieserite Fertiliser - Strips 5, 6, 7, 8, 9, 11, 12, 15, 16, 17, 18, 19 + 20; All Sections	80	kg/ha
20/04/2016	a	Marked out and Mowed all paths	-	-
24/05/2016	a	Mowed All Paths	-	-
06/06/2016	a	Cut Cross Paths	-	-
25/07/2016	a	Cut Cross Paths	-	-
09/08/2016	a	Combined the immediate surrounds of trials	-	-
12/08/2016	a	Completed Straw Weights	-	-
19/08/2016	a	Started to mop up leftover wheat with Claas	-	-
19/08/2016	a	Baled and removed all swaths from Claas	-	-
23/08/2016	a	Mopped Up remaining crop	-	-
27/08/2016	a	Removed Bales	-	-
W Wheat				
14/10/2015	s	Drilled Crusoe trt Redigo Deter - Sections 0, 1, 2, 4, 6, 7 + 9	350	seed/m^2
19/10/2015	p	Sprayed WW - Liberator - Sections 0, 1, 2, 4, 6, 7 + 9	0.6	lt/ha
19/10/2015	p	Sprayed WW -Stomp Aqua - Sections 0, 1, 2, 4, 6, 7 + 9	1.75	lt/ha
12/11/2015	p	Applied TDS Major - Sections 0, 1, 2, 4, 6, 7 + 9	5	kg/ha
21/03/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 12, 17, 18 + 19	139	kg/ha
07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 6, 19	139	kg/ha

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07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 7, 18	278	kg/ha
07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 2.1, 8, 12	417	kg/ha
07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 1, 9, 10, 11, 13, 14, 17	556	kg/ha
07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strip 15	696	kg/ha
07/04/2016	f	Applied Nitram @34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strip 16	835	kg/ha
13/04/2016	p	Sprayed Moddus - Sections 0, 1, 2, 4, 7, + 9	150	ml/ha
13/04/2016	p	Sprayed 3C Chlormequat750 - Sections 0, 1, 2, 4, 7 + 9	1.25	lt/ha
13/04/2016	p	Sprayed Odin - Sections 0, 1, 2, 4, 7 + 9	500	ml/ha
13/04/2016	p	Sprayed Mirage 40ec - Sections 0, 1, 2, 4, 7 + 9	500	ml/ha
13/04/2016	p	Sprayed Bravo500 - Sections 0, 1, 2, 4, 7 + 9	1	lt/ha
13/04/2016	p	Sprayed Moddus - Section 6 only	150	ml/ha
13/04/2016	p	Sprayed 3C Chlormequat750 - Section 6 only	1.25	lt/ha
30/04/2016	p	Sprayed Chex - Sections 0, 1, 2, 4, 6, 7 + 9	250	ml/ha
30/04/2016	p	Sprayed Pacifica - Sections 0, 1, 2, 4, 6, 7 + 9	500	ml/ha
30/04/2016	p	Sprayed Bio Power - Sections 0, 1, 2, 4, 6, 7 + 9	1	lt/ha
05/05/2016	f	Applied Nitram @ 34.5%N - Sections 0, 1, 2, 4, 6, 7 + 9; Strips 12, 17, 18 + 19	139	kg/ha
12/05/2016	p	Sprayed Keystone - Sections 0, 1, 2, 4, 7 + 9	800	ml/ha
12/05/2016	p	Sprayed Balear720 - Sections 0, 1, 2, 4, 7 + 9	700	ml/ha
03/06/2016	p	Sprayed Vortex - Sections 0, 1, 2, 4, 7 + 9	909	ml/ha
03/06/2016	p	Sprayed Bassoon - Sections 0, 1, 2, 4, 7 + 9	600	ml/ha
10/07/2016	p	Sprayed Cello - Sections 0, 1, 2, 4, 7 + 9	550	ml/ha
10/08/2016	a	Combined All Plots for yield - Sections 0, 1, 2, 4, 6, 7 + 9	-	-

W Oats

14/10/2015	s	Drilled Mascani Oats, trt Kinto - Section 3 only	350	seed/m^2
12/11/2015	p	Applied TDS Major - Sections 3	5	kg/ha
21/12/2015	p	Sprayed Oats with Excalibur and Hallmark	180	g/ha
21/12/2015	p	Sprayed Oats with Excalibur and Hallmark	40	ml/ha
27/04/2016	p	Sprayed Ally Max	30	g/ha
27/04/2016	p	Sprayed BASF 3C Chlormequat750	2	lt/ha
27/04/2016	p	Sprayed Cello	800	ml/ha
27/04/2016	p	Sprayed Hurler	1	lt/ha
06/06/2016	p	Sprayed Folicur - Sections 3 only	750	ml/ha
08/08/2016	a	Combined all Plots on Section 3	-	-
08/08/2016	a	Completed Straw Weights on Section 3	-	-
09/08/2016	a	Completed Straw weight on section 3	-	-
14/10/2015	s	Drilled Mascani, trt Kinto - Section 3 only	350	seeds/m^2
12/11/2015	p	Applied TDS Major - Sections 3	5	kg/ha

Maize

19/04/2016	p	Sprayed Firebrand - Section 5 only	1	lt/ha
19/04/2016	p	Sprayed Samurai - Section 5 only	3	lt/ha

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22/04/2016	a	Springtined - Section 5	-	-
03/05/2016	a	Flexitined - Section 5 only	-	-
05/05/2016	s	Drilled Severus Maize - trt Mesurol - Section 5 only	10.2	seed/m^2
05/05/2016	a	Powerharrow - Section 5 only - Prior to Drilling	-	-
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 065	139	kg/ha
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 075, 125, 175, 185, 195	278	kg/ha
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 085, 215 (plot 215 applied by hand)	417	kg/ha
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 095, 105, 115, 135, 145	556	kg/ha
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 155	696	kg/ha
17/05/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 165	835	kg/ha
07/06/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 195	139	kg/ha
07/06/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 185	278	kg/ha
07/06/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 175	556	kg/ha
07/06/2016	f	Applied Nitram @34.5%N - Section 5 only - Plot 125	417	kg/ha
19/07/2016	a	Hand Rotavated inter-row - Section 5 only	-	-
21/09/2016	a	Harvested Maize plots for yield - Section 5 only	-	-

Fallows

27/10/2015	a	Flexitined bare fallow - Section 8 only
23/03/2016	a	Powerharrowed - Section 8 only
17/05/2016	a	Topped Weeds - Section 8 only
19/05/2016	a	Ploughed - Section 8
06/06/2016	a	Powerharrowed - Section 8 only
19/07/2016	a	Power harrowed all fallows
20/07/2016	a	Power Harrow - Section 8 only
25/07/2016	a	Flexitined Section 8
05/08/2016	a	Ploughed (thrown Northwards) - Section 8 only
05/08/2016	a	Ring Rolled - Section 8

Wilderness

04/01/2016	a	Cleared fallen tree
27/10/2016	a	Topped Grass

NOTE: Samples of grain and straw were taken for chemical analysis. Unground grain and straw samples from selected treatments were archived.

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16/R/BK/1

WHEAT

GRAIN TONNES/HECTARE

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

SECTION PLOT	4/W1	7/W2	2/W3	6/W39	0/W12	1/W50	9/W58	Mean
01(FYM)N4	11.58	9.38	6.73	4.87	*	*	*	8.14
21FYMN3	12.15	10.61	9.83	6.30	7.01	8.91	9.84	9.23
22FYM	6.45	4.97	5.01	4.48	3.42	3.89	5.65	4.84
03Nil	1.75	0.42	0.43	0.40	0.63	0.90	0.74	0.75
05(P)KMg	2.06	0.34	0.35	0.51	0.78	0.97	0.80	0.83
06N1(P)KMg	4.94	2.54	2.90	2.24	2.63	2.85	2.59	2.95
07N2(P)KMg	7.71	3.50	3.83	3.20	4.20	4.55	4.48	4.50
08N3(P)KMg	9.31	5.54	6.71	3.81	6.09	5.66	6.70	6.26
09N4(P)KMg	10.20	6.30	9.05	4.92	6.52	7.10	7.16	7.32
10N4	7.45	1.00	3.71	1.36	0.75	1.43	0.99	2.38
11N4PMg	6.69	7.69	6.57	3.77	6.11	5.71	6.36	6.13
12N1+3+1(P)KMg	11.48	8.85	10.36	4.73	7.53	8.79	9.81	8.79
13N4PK	10.09	6.62	8.28	4.21	6.37	7.73	8.21	7.36
14N4PK*(Mg*)	9.36	6.31	5.65	3.83	4.22	4.90	7.62	5.98
15N5(P)KMg	11.09	5.65	7.54	3.84	6.02	7.79	9.67	7.37
16N6(P)KMg	11.66	7.74	8.73	4.45	7.00	7.55	9.63	8.11
17N1+4+1PKMg	12.62	9.86	10.95	4.82	8.67	8.25	9.90	9.30
18N1+2+1PKMg	10.33	8.97	9.20	5.33	7.66	7.48	8.99	8.28
19N1+1+1KMg	8.81	3.46	6.76	4.05	6.54	6.07	6.97	6.10
20N4KMg	*	*	*	*	1.55	0.74	*	1.15
Mean	8.72	5.78	6.45	3.74	4.93	5.33	6.45	5.91

GRAIN MEAN DM% 87.5

STRAW TONNES/HECTARE

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

SECTION PLOT	4/W1	7/W2	2/W3	6/W39	0/W12	1/W50	9/W58	Mean
01(FYM)N4	4.82	*	*	*	*	*	*	4.82
21FYMN3	5.95	*	*	*	*	4.75	*	5.35
22FYM	2.30	*	*	*	*	2.25	*	2.27
03Nil	0.13	*	*	*	*	0.18	*	0.16
05(P)KMg	0.19	*	*	*	*	0.17	*	0.18
06N1(P)KMg	1.91	*	*	*	*	1.33	*	1.62
07N2(P)KMg	2.93	*	*	*	*	2.29	*	2.61
08N3(P)KMg	3.60	*	*	*	*	2.52	*	3.06
09N4(P)KMg	4.16	*	*	*	*	3.40	*	3.78
10N4	2.00	*	*	*	*	0.68	*	1.34
11N4PMg	2.21	*	*	*	*	2.56	*	2.38
12N1+3+1(P)KMg	4.58	*	*	*	*	4.30	*	4.44
13N4PK	3.78	*	*	*	*	3.50	*	3.64
14N4PK*(Mg*)	2.85	*	*	*	*	2.27	*	2.56
15N5(P)KMg	4.33	*	*	*	*	3.51	*	3.92
16N6(P)KMg	5.07	*	*	*	*	3.36	*	4.22
17N1+4+1PKMg	6.24	*	*	*	*	3.81	*	5.03
18N1+2+1PKMg	4.35	*	*	*	*	3.10	*	3.72
19N1+1+1KMg	3.97	*	*	*	*	2.94	*	3.46
20N4KMg	*	*	*	*	*	0.35	*	0.35
Mean	3.44	*	*	*	*	2.49	*	2.96

STRAW MEAN DM% 84.5

Note: No yields are reported on section 8 in 2015 and 2016 because it was left in bare fallow to control weeds.

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16/R/BK/1

OATS

TONNES/HECTARE (85% DM)

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

Plot	Treatment	GRAIN	STRAW
13	01(FYM)[N4]	4.12	2.42
213	21[FYMN3]	5.82	4.53
223	22[FYM]	5.23	3.42
33	03Nil	1.17	0.54
53	05(P)KMg	1.62	0.67
63	06[N1](P)KMg	1.90	0.92
73	07[N2](P)KMg	2.30	1.10
83	08[N3](P)KMg	2.34	1.11
93	09[N4](P)KMg	2.72	1.34
103	10[N4]	3.84	2.03
113	11[N4]PMg	3.81	2.02
123	12[N1+3+1](P)KMg	2.49	1.10
133	13[N4]PK	2.50	1.15
143	14[N4]PK*(Mg*)	1.85	0.81
153	15[N5](P)KMg	2.90	1.40
163	16[N6](P)KMg	3.24	1.67
173	17[N1+4+1]PKMg	3.58	2.13
183	18[N1+2+1]PKMg	2.42	1.26
193	19[N1+1+1]KMg	2.45	1.18
	MEAN	2.96	1.62

PLOT AREA HARVESTED 0.00487

MAIZE

TONNES/HECTARE (100% DM)

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

Plot	Treatment	Whole Crop
15	01(FYM)N4	12.57
215	21FYMN3	9.43
225	22FYM	8.66
35	03Nil	0.80
55	05(P)KMg	2.33
65	06N1(P)KMg	4.36
75	07N2(P)KMg	4.95
85	08N3(P)KMg	5.47
95	09N4(P)KMg	5.40
105	10N4	3.80
115	11N4PMg	3.15
125	12N2+3(P)KMg	5.74
135	13N4PK	6.82
145	14N4PK*(Mg*)	7.29
155	15N5(P)KMg	5.77
165	16N6(P)KMg	6.02
175	17N2+4PKMg	4.92
185	18N2+2PKMg	7.89
195	19N2+1KMg	4.68
	MEAN	5.79

PLOT AREA HARVESTED 0.00189

Mean DM% 29.7

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Maize Yields (100% DM) shown in previous yield books (2009-2015) were found to be in error because an increase in the crop row spacing from 0.6m to 0.7m was not accounted for.
The corrected yields are given below:

Year	***2009***	***2010***	***2011***	***2012***	***2013***	***2014***	***2015***
Treatment/ Section	***7***	***4***	***5***	***3***	***2***	***7***	***4***
01(FYM)N4	11.81	14.37	8.67	14.32	3.51	13.30	14.31
21FYMN3	13.84	15.32	9.26	18.24	6.65	15.46	16.61
22FYM	12.37	12.78	11.95	11.21	8.75	15.87	12.12
03Nil	0.58	1.73	1.49	1.65	1.34	1.45	2.63
05(P)KMg	5.20	3.82	2.86	3.56	3.32	4.25	4.05
06N1(P)KMg	7.12	6.82	5.05	5.75	5.90	7.77	7.13
07N2(P)KMg	8.51	9.67	7.90	8.85	4.48	9.87	8.88
08N3(P)KMg	8.25	10.15	5.27	10.85	6.14	8.57	10.85
09N4(P)KMg	8.34	10.10	5.83	10.16	4.52	8.96	10.12
10N4	0.94	2.15	1.09	0.96	2.07	2.79	2.83
11N4PMg	5.19	6.97	3.88	5.44	4.36	4.36	7.71
12N2+3(P)KMg	8.55	12.42	7.32	9.33	6.52	11.11	14.64
13N4PK	8.89	11.21	7.20	10.72	8.80	9.58	15.00
14N4PK*(Mg*)	8.76	11.69	7.01	9.82	9.52	11.33	14.47
15N5(P)KMg	7.82	12.19	5.63	9.94	7.03	10.06	13.15
16N6(P)KMg	7.40	10.93	4.33	9.13	6.57	8.59	14.18
17N2+4PKMg	8.18	10.52	5.19	9.13	3.46	8.99	12.35
18N2+2PKMg	8.45	9.85	5.88	11.46	5.95	8.98	11.94
19N2+1KMg	3.49	4.28	2.56	5.43	3.10	4.53	5.10
Mean	7.56	9.31	5.70	8.73	5.37	8.73	10.42
Mean DM%	20.90	29.50	18.80	25.90	25.10	29.80	23.20
Plot Area Harvested	0.00189						

Note: In 2013 herbicide was applied accidentally to maize. Consequently, the maize yields given above for 2013 are unreliable.

https://doi.org/10.23637/ERADOC-1-249