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Yields of the Field Experiments 2010

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Results of the
Classical and other
Long-term Experiments

2010

R/BK/1 Broadbalk

Rothamsted Research

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10/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 166th 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 74-09R//BK/1.

Areas harvested:

| | | |
|--------|-------------|------------------------------|
| Wheat: | Section | |
| | 0 | 0.00320 |
| | 1 | 0.00589 |
| | 2,3,6 and 7 | 0.00487 |
| | 5 | 0.00162 |
| | 8,9 | 0.00512 |
| Oats: | 4 | 0.00487 (*see note 4, below) |
| Maize: | 7 | 0.00487 |

Treatments:

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

Whole plots

| PLOT | Fertilizers and organic manures | |
|------------------|---------------------------------|----------------------------------|
| | Plot | Treatments |
| 01 (FYM)N4 | 01 | From 2001 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), to be reviewed in 2010/11.
 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), to be reviewed in 2010/11
 FYM: Farmyard manure at 35 t

Previous treatment:-

Whole plots

| PLOT | Plot | Fertilizers and organic manures:- | | |
|----------|------|-----------------------------------|----------------------|-----------------------------|
| | | 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

+ 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 |

| Section | 1 | 9 | 0* | 8+ | 6** | 5 | 3 | 7 | 4 | 2 |
|---------|---|---|----|----|-----|---|---|---|---|---|
| Year | | | | | | | | | | |
| 1989 | W | W | W | W | W | W | W | P | F | W |
| 1990 | W | W | W | W | W | F | W | W | P | W |
| 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 |

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.

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 2006 part of plots 2.2, 06, 09 and 14 on Section 4 used for a nutrition trial with the application of urea. 5m was cut off the end of these plots before the yield measurement was taken.

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Experimental Diary:

All Sections

| | | Rate | Unit |
|-----------|--|--------|-------|
| 14-Sep-09 | f TSP - Plots 110-119, 130-149, 170-180 | 171.00 | kg/ha |
| | a Spread fertiliser | | |
| | f TSP - Plots 140-149 | 181.00 | kg/ha |
| 17-Sep-09 | a Applied FYM | | |
| | a Topped - Edges of maize plots | | |
| | a Subsoiled - Headlands only | | |
| | f FYM - Plots 2.10-2.20 (not oats in section 5 plots 2.15 and 2.25) | 35.00 | t/ha |
| 18-Sep-09 | a Plough | | |
| 19-Sep-09 | a Flexitined | | |
| 21-Sep-09 | a Flexitined | | |
| | a Cultipressed | | |
| 09-Oct-09 | a Topped - Topped drain | | |
| 11-Oct-09 | a Cultipressed - Second time | | |
| 19-Nov-09 | a Erect rabbit fence - Started (Posts only) | | |
| 23-Nov-09 | a Cut Hedges - Road side | | |
| 24-Nov-09 | a Cut Hedges | | |
| | a Erect rabbit fence | | |
| 25-Nov-09 | a Erect rabbit fence | | |
| 11-Dec-09 | a Cut Hedges | | |
| 05-Jan-10 | a Repair electric fence around trial - Fence had broken in several places due to snow and frost over xmas period | | |
| 06-Apr-10 | f Potassium Sulphate - strip 5,6,7,8,9,12,13,15,16,17,18,19 and 20 on all sections | 217.00 | kg/ha |
| 06-May-10 | a Remove rabbit fence | | |
| 07-May-10 | a Mow / Rotavate paths | | |
| 12-May-10 | a Mow / Rotavate paths | | |
| | a Rotavate | | |
| 13-May-10 | a Flexitined - Headlands only | | |
| | a Rotavate - down paths | | |
| 14-May-10 | a Mow / Rotavate paths | | |
| 25-May-10 | a Mow / Rotavate paths | | |
| 14-Jun-10 | a Rotavated down paths - To finish | | |
| 16-Jun-10 | a Rotavated down paths - To finish | | |
| 17-Jun-10 | a Cut paths | | |
| | a Rotavated down paths - Finished | | |
| 09-Jul-10 | a Other operation, see note - pulled wild oats 103 in total | | |
| 14-Jul-10 | a Mow / Rotavate paths | | |
| 09-Sep-10 | a Topped - grass headlands and drain | | |

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Cropped Sections

Winter Wheat

| | | | Rate | Unit |
|-----------|---|--|--------|-------|
| 13-Oct-09 | a | Combination Drilled | | |
| | s | Hereward - At 350 seeds per m ² | 141.00 | kg/ha |
| 14-Oct-09 | a | Rolled | | |
| 15-Oct-09 | p | Liberator - 200 lt water (Wheat only and not section 8) | 0.60 | l/ha |
| 10-Dec-09 | p | Lexus Class | 60.00 | g/ha |
| | p | Hallmark with Zeon Technology | 50.00 | ml/ha |
| 19-Mar-10 | f | Nitram - strips 12 and 17-19 | 139.00 | kg/ha |
| 20-Apr-10 | f | Nitram - strips 1, 2.1 and 16-20 | | |
| 05-May-10 | p | Bravo 500 - sections 0,1,2,3,7,8 & 9 | 1.00 | l/ha |
| | p | Tracker - sections 0,1,2,3,7,8 & 9 | 1.00 | l/ha |
| | p | Talius - sections 0,1,2,3,7,8 & 9 | 0.13 | l/ha |
| | p | Chlormequat 3C - sections 0,1,2,3,7,8 & 9 | 2.25 | l/ha |
| 17-May-10 | f | Nitram - Strip 12,17,18,19 ww only | 139.00 | kg/ha |
| 20-May-10 | p | Ally Max SX - sections 0,1,2,3,6,7 and 9 | 42.00 | g/ha |
| 20-May-10 | p | Starane 2 - sections 0,1,2,3,6,7 and 9 | 1.00 | l/ha |
| 02-Jun-10 | p | Comet - 200 lt water (sections 0, 1, 2, 3, 7, 8, 9) | 0.60 | l/ha |
| | p | Opus - 200 lt water (sections 0, 1, 2, 3, 7, 8, 9) | 0.60 | l/ha |
| 31-Aug-10 | a | Combine harvest, plots for yield - Sections 0 and 1 | | |
| 01-Sep-10 | a | Combine harvest remaining wheat - sections 2,3,6,7,8 & 9 | | |
| | a | Sample, bale and weigh straw - sections 2,3,6,7,8 & 9 | | |
| 03-Sep-10 | a | Combine harvest discards | | |
| 04-Sep-10 | a | Baled | | |
| 08-Sep-10 | a | Other operation, see note - removed bales | | |

Winter Oats

| | | | | |
|-----------|---|--|--------|-------|
| 13-Oct-09 | a | Combination drilled | | |
| | s | Gerald - At 350 seeds per m ² | 125.00 | kg/ha |
| 20-May-10 | p | Ally Max 5s - Section 5 | | |
| | p | Starane 2 - Section 5 | | |
| 03-Aug-10 | a | Combine harvest, plots for yield - Section 5 only | | |
| | a | Baled - Section 5 only | | |
| | a | Cut harvest strips, weighed and sampled - Section 5 only | | |
| 16-Aug-10 | a | Combine harvest discards - combined headlands | | |

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Forage Maize

| | | Rate | Unit |
|-----------|--|--------|----------------------|
| 09-Apr-10 | p Rosate 36 - Maize section only (200 lt water) | 4.00 | l/ha |
| 26-Apr-10 | a Nodet Drilled | | |
| | s Hudson - Maize section only | 10.20 | seeds/m ² |
| | a Flexi Tined - Maize area | | |
| | a Power harrowed - Maize area | | |
| 27-Apr-10 | f Nitram - Strips 12 and 17-19 | | |
| 28-Apr-10 | a Rolled - Maize plots | | |
| 04-Jun-10 | p Callisto - 200 lt water maize section only | 0.75 | l/ha |
| | p Samson Extra - 200 lt water maize section only | 0.75 | l/ha |
| 07-Jun-10 | f Nitram - plot 194 | 139.00 | kg/ha |
| | f Nitram - plot184 | 278.00 | kg/ha |
| | f Nitram - plot 124 | 417.00 | kg/ha |
| | f Nitram - plot 174 | 556.00 | kg/ha |
| 27-Sep-10 | a Harvest Maize Plots | | |
| | a Other operation, - cut maize discards | | |
| 28-Sep-10 | a Other operation, - cut maize discards | | |

Wilderness

| | | | |
|-----------|-------------------------|--|--|
| 26-Nov-09 | a Topped - Grass area | | |
| | a Topped - Stubbed area | | |
| 23-Apr-10 | a Cut grass area | | |

NOTE: Samples of wheat and oat grain and straw and forage maize were taken for chemical analysis. Unground wheat grain and straw from Section 1 and maize samples from Section 4 were archived

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WHEAT

GRAIN TONNES/HECTARE

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

| SECTION PLOT | 7/W1 | 2/W2 | 3/W3 | 6/W33 | 0/W6 | 1/W44 | 9/W52 | 8/W2 | Mean |
|-----------------|------|------|------|-------|------|-------|-------|------|------|
| 01(FYM)N4 | 8.86 | 7.24 | 7.26 | 5.97 | * | * | * | * | 7.33 |
| 21FYMN3 | 9.18 | 8.42 | 8.11 | 7.35 | 5.93 | 5.89 | 5.47 | 2.26 | 6.58 |
| 22FYM | 5.75 | 5.17 | 4.86 | 4.52 | 3.95 | 3.79 | 4.45 | 3.54 | 4.51 |
| 03Nil | 2.14 | 1.02 | 0.89 | 0.95 | 1.03 | 1.02 | 0.66 | 0.72 | 1.05 |
| 05(P)KMg | 1.95 | 1.27 | 1.27 | 1.17 | 1.33 | 1.25 | 1.12 | 1.74 | 1.39 |
| 06N1(P)KMg | 3.84 | 3.48 | 3.62 | 2.86 | 3.72 | 3.74 | 3.07 | 2.34 | 3.33 |
| 07N2(P)KMg | 5.46 | 4.90 | 5.04 | 4.36 | 5.23 | 5.85 | 4.04 | 3.36 | 4.78 |
| 08N3(P)KMg | 6.79 | 5.85 | 5.99 | 5.32 | 6.04 | 6.09 | 4.51 | 4.27 | 5.61 |
| 09N4(P)KMg | 8.19 | 6.80 | 6.86 | 6.67 | 6.21 | 6.47 | 5.57 | 4.77 | 6.44 |
| 10N4 | 5.29 | 4.25 | 3.68 | 2.94 | 1.87 | 1.67 | 1.40 | 1.27 | 2.80 |
| 11N4PMg | 6.87 | 5.76 | 4.90 | 6.08 | 5.32 | 4.98 | 5.39 | 5.01 | 5.54 |
| 12N1+3+1(P)KMg | 8.75 | 8.15 | 7.72 | 7.22 | 6.86 | 7.12 | 6.49 | 4.08 | 7.05 |
| 13N4PK | 7.66 | 7.39 | 6.67 | 6.31 | 6.42 | 6.23 | 5.47 | 3.45 | 6.20 |
| 14N4PK*(Mg*) | 7.64 | 6.72 | 6.18 | 5.86 | 6.34 | 6.60 | 4.95 | 4.14 | 6.05 |
| 15N5(P)KMg | 8.16 | 6.52 | 6.55 | 6.69 | 6.88 | 6.55 | 6.08 | 3.04 | 6.31 |
| 16N6(P)KMg | 8.80 | 8.07 | 7.74 | 7.84 | 6.87 | 6.86 | 5.94 | 2.88 | 6.87 |
| 17N1+4+1PKMg | 9.03 | 8.70 | 8.27 | 7.84 | 6.98 | 6.60 | 5.42 | 2.93 | 6.97 |
| 18N1+2+1PKMg | 8.34 | 7.93 | 7.59 | 4.95 | 6.85 | 6.15 | 5.07 | 2.85 | 6.22 |
| 19N1+1+1KMg | 7.32 | 5.62 | 5.40 | 3.59 | 5.64 | 4.57 | 5.22 | 2.46 | 4.98 |
| 20N4KMg | * | * | * | * | 1.12 | 0.66 | * | * | 0.89 |
| GRAIN MEAN DM% | 86.1 | | | | | | | | |

STRAW TONNES/HECTARE

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

| SECTION PLOT | 7/W1 | 2/W2 | 3/W3 | 6/W33 | 0/W6 | 1/W44 | 9/W52 | 8/W2 | Mean |
|-----------------|------|------|------|-------|------|-------|-------|------|------|
| 01(FYM)N4 | 4.83 | * | * | * | * | * | * | * | 4.83 |
| 21FYMN3 | 4.92 | * | * | * | * | 3.40 | * | 4.47 | 3.31 |
| 22FYM | 3.38 | * | * | * | * | 2.15 | * | 4.39 | 3.31 |
| 03Nil | 0.53 | * | * | * | * | 0.33 | * | 0.31 | 0.39 |
| 05(P)KMg | 0.40 | * | * | * | * | 0.34 | * | 1.69 | 0.81 |
| 06N1(P)KMg | 1.39 | * | * | * | * | 1.47 | * | 1.98 | 1.62 |
| 07N2(P)KMg | 2.43 | * | * | * | * | 2.30 | * | 2.47 | 2.40 |
| 08N3(P)KMg | 2.99 | * | * | * | * | 2.54 | * | 2.84 | 2.79 |
| 09N4(P)KMg | 3.90 | * | * | * | * | 2.82 | * | 3.54 | 3.42 |
| 10N4 | 2.45 | * | * | * | * | 0.89 | * | 1.12 | 1.49 |
| 11N4PMg | 2.78 | * | * | * | * | 1.94 | * | 2.73 | 2.48 |
| 12N1+3+1(P)KMg | 4.48 | * | * | * | * | 3.60 | * | 4.53 | 4.21 |
| 13N4PK | 3.66 | * | * | * | * | 2.75 | * | 3.27 | 3.22 |
| 14N4PK*(Mg*) | 3.12 | * | * | * | * | 3.06 | * | 3.23 | 3.13 |
| 15N5(P)KMg | 3.57 | * | * | * | * | 3.06 | * | 3.69 | 3.44 |
| 16N6(P)KMg | 4.41 | * | * | * | * | 3.29 | * | 4.00 | 3.90 |
| 17N1+4+1PKMg | 4.97 | * | * | * | * | 3.56 | * | 4.17 | 4.23 |
| 18N1+2+1PKMg | 3.98 | * | * | * | * | 3.28 | * | 4.23 | 3.83 |
| 19N1+1+1KMg | 3.58 | * | * | * | * | 2.49 | * | 3.63 | 3.23 |
| 20N4KMg | * | * | * | * | * | 0.22 | * | * | 0.22 |
| STRAW MEAN DM% | 89.3 | | | | | | | | |

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W. OATS
TONNES/HECTARE

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

| PLOT | GRAIN | STRAW |
|------------------|-------|-------|
| 01(FYM)[N4] | 6.22 | 3.29 |
| 21[FYMN2] | 7.30 | 4.52 |
| 22[FYM] | 6.88 | 3.84 |
| 03Nil | 2.17 | 0.73 |
| 05 (P) KMg | 1.76 | 0.35 |
| 06[N1](P)KMg | 2.11 | 0.70 |
| 08[N2](P)KMg | 2.62 | 0.96 |
| 08[N3](P)KMg | 3.58 | 1.58 |
| 09[N4](P)KMg | 4.78 | 1.96 |
| 10[N4] | 5.79 | 2.69 |
| 11[N4]PMg | 6.10 | 2.63 |
| 12[N1+3+1](P)KMg | 5.13 | 2.47 |
| 13[N4]PK | 4.20 | 1.85 |
| 14[N4]PK*(Mg*) | 4.47 | 2.04 |
| 15[N5](P)KMg | 6.25 | 3.25 |
| 16[N6](P)KMg | 7.34 | 4.03 |
| 17[N1+4+1]PKMg | 7.11 | 3.80 |
| 18[N1+2+1]PKMg | 3.32 | 1.53 |
| MEAN DM% | 86.7 | 71.6 |

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

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

| PLOT | WHOLE CROP |
|--------------|------------|
| 01(FYM)N4 | 16.77 |
| 21FYMN3 | 17.87 |
| 22FYM | 14.91 |
| 03Nil | 2.02 |
| 05(P)KMg | 4.46 |
| 06N1(P)KMg | 7.95 |
| 07N2(P)KMg | 11.28 |
| 08N3(P)KMg | 11.85 |
| 09N4(P)KMg | 11.79 |
| 10N4 | 2.50 |
| 11N4PMg | 8.13 |
| 12N2+3(P)KMg | 14.49 |
| 13N4PK | 13.08 |
| 14N4PK*(Mg*) | 13.64 |
| 15N5(P)KMg | 14.22 |
| 16N6(P)KMg | 12.75 |
| 17N2+4PKMg | 12.27 |
| 18N2+2PKMg | 11.49 |
| 19N2+1KMg | 5.00 |
| MEAN DM% | 29.5 |

ERRATUM

see 2016 page16 (supplied)

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:

| <i>Treatment/ Section</i> | <i>Year</i> | | | | | | |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| | 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.