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# Yields of the Field Experiments 2007

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Results of the  
Classical and other  
Long-term Experiments  
2007

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## R/BK/1 Broadbalk

### Rothamsted Research

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## 07/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 164th year, w. wheat, w. oats and forage maize.

For previous years see 'Details' 1967 and 1973, Station Report for 1966, pp. 229-234; Station Report for 1968, Part 2; Station Report for 1982, Part 2, pp 5-44 and Yield Books for 74-06R/BK/1.

#### Areas harvested:

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

#### 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 <sup>(1)</sup>            |
| 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 <sup>(2)</sup> |
| 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                          |

(1) FYM N3 since 2005

(2) N1+3+1 (P) KMg since 2006

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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.

(Mg\*): (none), to be reviewed in 2010/11

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

+ 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.

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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  |

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| Section | 1 | 9 | 0* | 8+ | 6** | 5 | 3 | 7 | 4 | 2 |
|---------|---|---|----|----|-----|---|---|---|---|---|
| Year    |   |   |    |    |     |   |   |   |   |   |
| 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 |
| 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 |

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. None applied since autumn 1991.
- (3) In 2003 and 2004 section 0 was used for an experiment (CS/595) investigating different herbicides to control *Equisetum arvense*.
- (4) In 2006 parts 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       |
|---------------|---|--|--------|------------|
| 05-Sep-06     | p | Weedazol-TL Sections 0-4, 6, 7, 9                                | 20.00  | l/200 l/ha |
| 28-Sep-06     | a | Topped Section 8   | 1.00   |            |
| 04-Oct-06     | f | Farm Yard Manure Strips 21, 22, excluding section 2              | 35.00  | t/ha       |
| 09-Oct-06     | f | Triple superphosphate strips 11, 13, 14, 17, 18                  | 171.00 | kg/ha      |
|               | f | Muriate of Potash Strip 14                                       | 181.00 | kg/ha      |
| 14-Oct-06     | a | Plough/S   |        |            |
| 16-Oct-06     | a | Cultipressed   |        |            |
| 09-Jan-07     | a | Erect rabbit fence   |        |            |
| 12-Mar-07     | f | Sulphate of Potash Strips 5-9, 12, 13, 15-20                     | 217.00 | kg/ha      |
| 14-Mar-07     | f | Kieserite Strips 5-9, 11, 12, 15-20, strip 10 section 9 in error | 80.00  | kg/ha      |
| 01-May-07     | a | Flexitined E and W headlands                                     |        |            |
| 08-May-07     | a | Mow / Rotavate paths   |        |            |
| 09-May-07     | a | Mow / Rotavate paths   |        |            |
| 10-May-07     | a | Remove rabbit fence S O&E's                                      |        |            |
|               | a | Flexitined O&E's   |        |            |
| 11-May-07     | a | Power Harrowed O&E's   |        |            |
| 25-May-07     | a | Mow / Rotavate paths   |        |            |
| 14-Jun-07     | a | Mow / Rotavate paths   |        |            |
| 19-Jun-07     | a | Mow / Rotavate paths   |        |            |
| 25-Jun-07     | a | Mow/Rotavate paths - down paths                                  |        |            |
| 26-Jul-07     | a | Mow / Rotavate paths   |        |            |
| 10-Aug-07     | a | Rogue wild oats/thistles/weeds                                   |        |            |
| 10-Sep-07     | a | Remove rabbit fence  |        |            |

### Cropped sections:

| W. Wheat  |   |   | Rate   | unit                 |
|-----------|---|---|--------|----------------------|
| 01-Nov-06 | a | Combination drilled wheat plots                       |        |                      |
|           | s | Hereward tr Redigo Twin + Deter                       | 350.00 | seeds/m <sup>2</sup> |
| 03-Nov-06 | p | Ice Sections 0, 1, 4-7, 9                             | 4.00   | l/200 l/ha           |
| 04-Dec-06 | p | Decoy Wetex excluding section 3                       | 7.00   | kg/ha                |
| 14-Mar-07 | f | Nitraprill strips 12, 17, 18, 19, wheat               | 139.00 | kg/ha                |
| 23-Apr-07 | p | Clean Crop Wanderer all wheat except section 6        | 1.00   | l/200 l/ha           |
|           | p | Deuce all wheat except section 6                      | 1.00   | l/200 l/ha           |
| 24-Apr-07 | f | Nitraprill strips 6, 19, wheat                        | 139.00 | kg/ha                |
|           | f | Nitraprill strips 7, 18, wheat                        | 278.00 | kg/ha                |
|           | f | Nitraprill strips 21, 8, 12, wheat                    | 417.00 | kg/ha                |
|           | f | Nitraprill strips 1, 9, 10, 11, 13, 14, 17, 20, wheat | 556.00 | kg/ha                |
|           | f | Nitraprill strip 15, wheat                            | 696.00 | kg/ha                |
|           | f | Nitraprill strip 16, wheat                            | 835.00 | kg/ha                |

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|           |  | Rate   | Unit       |
|-----------|--|--------|------------|
| 09-May-07 | p Ally Max SX wheat and oats excluding section 8                       | 42.00  | g/200 l/ha |
|           | p Starane 2 wheat and oats excluding section 8                         | 0.75   | l/200 l/ha |
| 22-May-07 | p Amistar Opti wheat excluding Sec 6                                   | 1.25   | l/200 l/ha |
|           | p Opus wheat excluding Sec 6   | 0.60   | l/200 l/ha |
|           | f Nitraprill Strips 12, 17, 18, 19, wheat                              | 139.00 | kg/ha      |
| 11-Jun-07 | f Double Top 2 m on W end of plots 225 and 095                         | 40.00  | Kg N/ha    |
| 12-Jun-07 | f Double Top 2 m on W end of plots 225 and 095                         | 40.00  | Kg N/ha    |
| 14-Jun-07 | p Amistar Opti wheat, excluding section 6                              | 1.00   | l/200 l/ha |
|           | p Landgold Epoxiconazole wheat, excluding section 6                    | 0.40   | l/200 l/ha |
| 26-Aug-07 | a Combine harvest, plots for yield, and swath straw - sections 0 and 1 |        |            |
| 27-Aug-07 | a Combine harvest, plots for yield and swath straw - sections 4-9      |        |            |
|           | a Sample, bale and weigh straw section 1                               |        |            |
| 28-Aug-07 | a Combine harvest plot edges to allow straw weight to be taken         |        |            |
|           | a Sample, bale and weigh straw sections 5 & 8                          |        |            |
| 29-Aug-07 | a Combine harvest discards and swath straw                             |        |            |
|           | a Chop straw section 0   |        |            |
| 02-Sep-07 | a Baled remaining wheat straw  |        |            |

## W. Oats

|           |  | Rate`  | Unit                 |
|-----------|--|--------|----------------------|
| 02-Nov-06 | a Combination drilled oat plots                          |        |                      |
|           | s Gerald r Baytan Secure                                 | 350.00 | seeds/m <sup>2</sup> |
| 04-Dec-06 | s Decoy Wetex excluding section 3                        | 7.00   | kg/ha                |
| 19-Dec-06 | p Lexus Class - oats                                     | 60.00  | g/200 l/ha           |
|           | p Hallmark with Zeon Technology - oats                   | 50.00  | ml/200 l/ha          |
| 09-May-07 | p Ally Max SX wheat and oats excluding section 8         | 42.00  | g/200 l/ha           |
|           | p Starane 2 wheat and oats excluding section 8           | 0.75   | l/200 l/ha           |
| 24-May-07 | p Amistar - oats   | 0.60   | l/200 l/ha           |
|           | p Flexity - oats   | 0.20   | l/200 l/ha           |
| 06-Aug-07 | a Combine harvest plots for yield and swath straw - oats |        |                      |
| 08-Aug-07 | a Sample, bale and weigh straw - oats                    |        |                      |
| 11-Aug-07 | a Baled discard oat straw                                |        |                      |

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| Forage Maize |   |  | Rate   | Unit                 |
|--------------|---|--|--------|----------------------|
| 21-Apr-07    | p | Clinic Ace - section 3, pre Maize  | 4.00   | l/200 l/ha           |
| 01-May-07    | a | Flexitined maize plots   |        |                      |
| 02-May-07    | f | Maize N and 1 <sup>st</sup> N Nitraprill plot 063, maize                           | 139.00 | kg/ha                |
|              | f | Maize N and 1 <sup>st</sup> N Nitraprill Plots 073, 123, 173, 183, 193, maize      | 278.00 | kg/ha                |
|              | f | Maize N and 1 <sup>st</sup> N Nitraprill Plots 213, 083, maize                     | 417.00 | kg/ha                |
|              | f | Maize N and 1 <sup>st</sup> N Nitraprill Plots 013, 093, 103, 113, 133, 143, maize | 556.00 | kg/ha                |
|              | f | Maize N and 1 <sup>st</sup> N Nitraprill Plot 153, maize                           | 696.00 | kg/ha                |
|              | f | Maize N and 1 <sup>st</sup> N Nitraprill Plot 163, maize                           | 835.00 | kg/ha                |
|              | a | Power Harrowed Maize plots   |        |                      |
|              | a | Nodet drilled maize plots  |        |                      |
|              | s | Hudson Tr Mesurol maize plots  | 10.20  | seeds/m <sup>2</sup> |
|              | a | Rolled maize plots   |        |                      |
| 06-Jun-07    | f | 2 <sup>nd</sup> split N Nitraprill Plot 193, maize                                 | 139.00 | kg/ha                |
|              | f | 2 <sup>nd</sup> split N Nitraprill Plot 183, maize                                 | 278.00 | kg/ha                |
|              | f | 2 <sup>nd</sup> split N Nitraprill Plot 123, maize                                 | 417.00 | kg/ha                |
|              | f | 2 <sup>nd</sup> split N Nitraprill Plot 173, maize                                 | 556.00 | kg/ha                |
| 14-Jun-07    | p | Samson maize plots   | 1.50   | l/200 l/ha           |
| 19-Jun-07    | p | Callisto maize plots   | 0.75   | l/200 l/ha           |
| 18-Sep-07    | a | Cut harvest strips, weighed and sampled - maize                                    |        |                      |
| 25-Sep-07    | a | Cut maize discards   |        |                      |
| Wilderness   |   |  | Rate   | Unit                 |
| 30-Apr-07    | a | Topped Wilderness, middle section  |        |                      |
| 01-Jun-07    | a | Topped grazed section  |        |                      |
| 18-Jun-07    | a | Topped Wilderness, middle section  |        |                      |
| 25-Sep-07    | a | Topped Wilderness, middle section  |        |                      |
| 21-Dec-07    | a | Topped Wilderness, middle section  |        |                      |

Note: Samples of wheat and oat grain and straw, and maize were taken for chemical analysis. Unground wheat grain and straw from section 1 and maize from section 3 were archived.



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WHEAT

GRAIN TONNES/HECTARES

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

| SECTION<br>PLOT     | 5/W1 | 4/W2 | 7/W3 | 8/W6 | 6/W30 | 0/W3 | 1/W41 | 9/W49 | Mean |
|---------------------|------|------|------|------|-------|------|-------|-------|------|
| 01 (FYM) N4         | 8.60 | 6.68 | 6.23 | *    | 3.96  | *    | *     | *     | 6.37 |
| 21 FYMN3            | 9.90 | 9.00 | 8.48 | 2.48 | 5.01  | 5.24 | 6.21  | 7.96  | 6.78 |
| 22 FYM              | 5.31 | 3.86 | 3.66 | 2.18 | 3.91  | 2.55 | 3.94  | 4.96  | 3.80 |
| 03 N11              | 1.07 | 1.07 | 1.17 | 1.33 | 0.97  | 0.50 | 0.85  | 0.17  | 0.99 |
| 05 (P) KMg          | 1.33 | 1.20 | 1.03 | 2.24 | 0.92  | 0.41 | 1.05  | 0.71  | 1.11 |
| 06 N1 (P) KMg       | 3.29 | 3.14 | 1.52 | 1.70 | 1.56  | 1.14 | 2.02  | 2.19  | 2.07 |
| 07 N2 (P) KMg       | 4.96 | 4.30 | 2.46 | 1.35 | 1.59  | 2.16 | 3.22  | 2.24  | 2.78 |
| 08 N3 (P) KMg       | 5.67 | 5.14 | 3.34 | 1.92 | 1.89  | 1.97 | 3.12  | 2.89  | 3.24 |
| 09 N4 (P) KMg       | 7.31 | 6.04 | 5.22 | 2.27 | 2.90  | 4.28 | 4.93  | 4.89  | 4.73 |
| 10 N4               | 6.04 | 3.79 | 0.66 | 0.79 | 1.73  | 0.76 | 1.11  | 0.35  | 1.90 |
| 11 N4 PMg           | 4.64 | 2.96 | 3.31 | 1.80 | 1.87  | 2.56 | 2.54  | 3.19  | 2.86 |
| 12 N1+3+1 (P) K2Mg2 | 8.29 | 6.39 | 5.19 | 2.59 | 2.68  | 4.62 | 4.82  | 5.19  | 4.97 |
| 13 N4 PK            | 7.15 | 5.40 | 4.45 | 1.54 | 2.54  | 3.52 | 4.29  | 4.20  | 4.14 |
| 14 N4 PK* (Mg*)     | 6.91 | 5.05 | 3.68 | 1.46 | 2.48  | 3.46 | 4.31  | 4.52  | 3.98 |
| 15 N5 (P) KMg       | 7.89 | 6.11 | 4.12 | 1.30 | 2.13  | 3.39 | 3.90  | 4.30  | 4.14 |
| 16 N6 (P) KMg       | 9.00 | 7.50 | 5.91 | 1.77 | 4.10  | 5.67 | 5.29  | 4.97  | 5.53 |
| 17 N1+4+1 PKMg      | 8.76 | 7.71 | 6.05 | 2.01 | 4.29  | 5.41 | 5.16  | 4.80  | 5.52 |
| 18 N1+2+1 PKMg      | 7.98 | 6.79 | 5.48 | 2.19 | 2.84  | 3.76 | 3.77  | 2.61  | 4.43 |
| 19 N1+1+1 KMg       | 6.02 | 5.11 | 4.02 | 1.81 | 2.42  | 2.73 | 3.91  | 1.30  | 3.42 |
| 20 N4 KMg           | *    | *    | *    | *    | *     | 0.99 | 0.41  | *     | 0.70 |

GRAIN MEAN DM% 82.2

STRAW TONNES/HECTARES

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

| SECTION<br>PLOT     | 5/W1 | 4/W2 | 7/W3 | 8/W6 | 6/W30 | 0/W3 | 1/W41 | 9/W49 | Mean |
|---------------------|------|------|------|------|-------|------|-------|-------|------|
| 01 (FYM) N4         | 3.51 | *    | *    | *    | *     | *    | *     | *     | 3.51 |
| 21 FYMN3            | 4.58 | *    | *    | 5.51 | *     | *    | 2.21  | *     | 4.10 |
| 22 FYM              | 2.49 | *    | *    | 4.80 | *     | *    | 1.93  | *     | 3.08 |
| 03 N11              | 0.13 | *    | *    | 2.31 | *     | *    | 0.16  | *     | 0.87 |
| 05 (P) KMg          | 0.26 | *    | *    | 4.83 | *     | *    | 0.23  | *     | 1.77 |
| 06 N1 (P) KMg       | 0.86 | *    | *    | 2.86 | *     | *    | 0.33  | *     | 1.35 |
| 07 N2 (P) KMg       | 1.73 | *    | *    | 3.23 | *     | *    | 0.84  | *     | 1.93 |
| 08 N3 (P) KMg       | 1.26 | *    | *    | 3.17 | *     | *    | 0.81  | *     | 1.74 |
| 09 N4 (P) KMg       | 2.35 | *    | *    | 4.69 | *     | *    | 1.62  | *     | 2.89 |
| 10 N4               | 1.38 | *    | *    | 3.48 | *     | *    | 0.30  | *     | 1.72 |
| 11 N4 PMg           | 0.90 | *    | *    | 4.41 | *     | *    | 0.56  | *     | 1.96 |
| 12 N1+3+1 (P) K2Mg2 | 2.27 | *    | *    | 5.24 | *     | *    | 1.38  | *     | 2.96 |
| 13 N4 PK            | 1.90 | *    | *    | 4.51 | *     | *    | 1.23  | *     | 2.55 |
| 14 N4 PK* (Mg*)     | 1.78 | *    | *    | 5.89 | *     | *    | 0.92  | *     | 2.86 |
| 15 N5 (P) KMg       | 2.24 | *    | *    | 6.56 | *     | *    | 1.19  | *     | 3.33 |
| 16 N6 (P) KMg       | 3.03 | *    | *    | 5.89 | *     | *    | 1.60  | *     | 3.51 |
| 17 N1+4+1 PKMg      | 2.81 | *    | *    | 4.26 | *     | *    | 1.39  | *     | 2.82 |
| 18 N1+2+1 PKMg      | 2.79 | *    | *    | 5.39 | *     | *    | 1.04  | *     | 3.07 |
| 19 N1+1+1 KMg       | 1.85 | *    | *    | 5.01 | *     | *    | 1.15  | *     | 2.67 |
| 20 N4 KMg           | *    | *    | *    | *    | *     | *    | 0.02  | *     | 0.02 |

STRAW MEAN DM% 86.2

07/R/BK/1

W.OATS

TONNES/HECTARE

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

| PLOT                  | GRAIN | STRAW |
|-----------------------|-------|-------|
| 01 (FYM) [N4]         | 5.10  | 2.57  |
| 21 [FYMN2]            | 6.87  | 4.13  |
| 22 [FYM]              | 7.21  | 4.18  |
| 03Nil                 | 1.93  | 0.65  |
| 05 (P) KMg            | 2.52  | 0.85  |
| 06 [N1] (P) KMg       | 2.96  | 1.14  |
| 07 [N2] (P) KMg       | 3.29  | 1.24  |
| 08 [N3] (P) KMg       | 3.74  | 1.77  |
| 09 [N4] (P) KMg       | 3.65  | 1.77  |
| 10 [N4]               | 5.11  | 2.37  |
| 11 [N4] PMg           | 5.31  | 2.40  |
| 12 [N1+3+1] (P) K2Mg2 | 3.97  | 1.61  |
| 13 [N4] PK            | 3.39  | 1.41  |
| 14 [N4] PK* (Mg*)     | 3.32  | 1.57  |
| 15 [N5] (P) KMg       | 3.85  | 1.67  |
| 16 [N6] (P) KMg       | 5.87  | 2.93  |
| 17 [N1+4+1] PKMg      | 5.37  | 2.63  |
| 18 [N1+2+1] PKMg      | 3.45  | 1.62  |
| 19 [N1+1+1] KMg       | 2.60  | 1.25  |
| MEAN DM%              | 87.3  | 84.8  |

PLOT AREA HARVESTED 0.00487

FORAGE MAIZE

WHOLE CROP (100% DM) TONNES/HECTARES

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

| PLOT             | Whole Crop |
|------------------|------------|
| 01 (FYM) N4      | 14.74      |
| 21 FYMN3         | 14.58      |
| 22 FYM           | 13.99      |
| 03Nil            | 2.15       |
| 05 (P) KMg       | 3.57       |
| 06N1 (P) KMg     | 6.67       |
| 07N2 (P) KMg     | 9.20       |
| 08N3 (P) KMg     | 11.35      |
| 09N4 (P) KMg     | 12.82      |
| 10N4             | 0.93       |
| 11N4PMg          | 3.66       |
| 12N2+3 (P) K2Mg2 | 10.90      |
| 13N4PK           | 11.19      |
| 14N4PK* (Mg*)    | 11.06      |
| 15N5 (P) KMg     | 11.43      |
| 16N6 (P) KMg     | 11.10      |
| 17N2+4PKMg       | 9.25       |
| 18N2+2PKMg       | 8.79       |
| 19N2+1KMg        | 7.37       |
| MEAN%DM          | 24.40      |

PLOT AREA HARVESTED 0.00162