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## Yields of the Field Experiments 1984

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### 84/R/AG/6 Agdell - W. Wheat

#### Rothamsted Research

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84/R/AG/6

AGDELL

Object: To study, by crop yields and soil analyses, the residual values of phosphate and potash applied in the period 1848-1951 and further dressings since 1964.

The 15th year of revised scheme, w. wheat.

For previous years see 'Details' 1967 and 1973, and 74-83/R/AG/6.

Treatments: All combinations of:-

Whole plots

1. OLDRESO Fertilizers and organic manures applied to roots every fourth year, in the period 1848-1948:

|          |               |
|----------|---------------|
| NONE     | None          |
| PKNAMG   | P K Na Mg     |
| NPKNAMGC | N P K Na Mg C |

N: 48 kg N as sulphate of ammonia  
P: 41 kg P as superphosphate  
K: 224 kg K as sulphate of potash  
Na: 16 kg Na as sulphate of soda  
Mg: 11 kg Mg as sulphate of magnesia  
C: Castor meal at 2240 kg supplying about 112 kg N

2. RN CROP Rotation 1848-1951 and crop in 1984:

|          |                                                                                                             |
|----------|-------------------------------------------------------------------------------------------------------------|
| F/WHEAT  | With fallow: Roots (turnips or swedes), s. barley, fallow, w. wheat 1848-1951. Wheat in 1984 (after fallow) |
| L/FALLOW | With legume: Roots, s. barley, legume (clover or beans), w. wheat 1848-1951. Fallow in 1984.                |

Half plots

3. 1964RESO Residues of 1964 treatments:

P  
K

Quarter plots

4. PREVCROP Previous cropping 1958-69 on P-test half plots, 1958-70 on K-test half plots:

|        |                  |
|--------|------------------|
| ARABLE | Arable or fallow |
| GRASS  | Grass            |

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Sixteenth plots

5.  $P_2O_5$  64       $K_2O$  64

Rates of 1964 treatments (kg):  
 $P_2O_5$  to P-test       $K_2O$  to K-test  
 half plots              half plots

|      |      |
|------|------|
| 0    | 0    |
| 500  | 315  |
| 1000 | 630  |
| 2000 | 1260 |

Thirty second plots

6. To RN CROP F/WHEAT. Residues of  $P_2O_5$  applied  
 1970-72 (kg) and in 1979, 1981 and 1983 (kg):

$P_2O_5$  723

(0)0  
 (375)450

None  
 375 total in 1970-72, 150 in 1980, 1981 and 1983

To RN CROP F/WHEAT. Residues of  $K_2O$  applied  
 1973-76 (kg) and in 1979, 1981 and 1983 (kg):

$K_2O$  763

(0)0  
 (870)900

None  
 870 total in 1973-76, 300 in 1980, 1982 and 1983

NOTE: Treatment combinations to thirty second plots of L/FALLOW  
 plots are not shown above.

Standard applications:

W. wheat: Manures: 'Nitro-Chalk' at 130 kg followed by 750 kg.  
 Weedkillers: Chlortoluron at 3.5 l in 250 l. Mecoprop at 2.0 kg with  
 ioxynil at 0.25 kg and bromoxynil at 0.25 kg in 200 l. Fungicides:  
 Prochloraz at 0.40 kg and carbendazim at 0.15 kg in 200 l.  
 Triadimefon at 0.12 kg with captafol at 1.3 kg in 500 l.  
 Insecticide: Pirimicarb at 0.14 kg in 250 l.

Seed: Avalon, dressed chlorfenvinphos, sown at 200 kg.

Cultivations, etc.:-

W. wheat: Heavy spring-tine cultivated: 27 Sept, 1983. Rotary harrowed,  
 seed sown: 28 Sept. Chlortoluron applied: 29 Sept. First N applied:  
 16 Feb, 1984. Second N applied: 9 Apr. Prochloraz and carbendazim  
 applied: 14 Apr. Mecoprop, ioxynil and bromoxynil applied: 19 Apr.  
 Triadimefon and captafol applied: 13 June. Insecticide applied:  
 27 June. Combine harvested: 15-17 Aug.  
 Fallow: Ploughed: 29 Nov, 1983. Heavy spring-tine cultivated: 20 Mar,  
 1984, 27 Apr, 9 May. Spring-tine cultivated: 20 June. Rotary  
 cultivated: 12 July.

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WHEAT P PLOTS

GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

|          | OLDRES   | NONE |          | PKNAMG |          | NPKNAMGC |          |
|----------|----------|------|----------|--------|----------|----------|----------|
|          | P205 723 | (0)0 | (375)450 | (0)0   | (375)450 | (0)0     | (375)450 |
| PREVCROP | P205 64  |      |          |        |          |          |          |
| ARABLE   | 0        | 7.25 | 8.78     | 9.47   | 9.90     | 7.85     | 6.74     |
|          | 500      | 7.90 | 9.19     | 9.80   | 10.39    | 8.25     | 8.29     |
|          | 1000     | 8.83 | 9.87     | 9.78   | 10.44    | 8.53     | 9.31     |
|          | 2000     | 8.76 | 9.06     | 10.32  | 10.32    | 9.21     | 9.71     |
| GRASS    | 0        | 6.46 | 9.54     | 6.26   | 9.17     | 7.77     | 9.15     |
|          | 500      | 7.64 | 8.61     | 9.42   | 10.66    | 6.66     | 8.15     |
|          | 1000     | 8.30 | 9.57     | 9.03   | 9.99     | 7.40     | 8.88     |
|          | 2000     | 8.79 | 9.61     | 10.62  | 10.72    | 6.85     | 8.23     |

GRAIN MEAN DM% 82.6

PLOT AREA HARVESTED 0.00140

WHEAT K PLOTS

GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

|          | OLDRES  | NONE |          | PKNAMG |          | NPKNAMGC |          |
|----------|---------|------|----------|--------|----------|----------|----------|
|          | K20 763 | (0)0 | (870)900 | (0)0   | (870)900 | (0)0     | (870)900 |
| PREVCROP | K20 64  |      |          |        |          |          |          |
| ARABLE   | 0       | 9.60 | 9.19     | 10.73  | 10.39    | 10.42    | 10.28    |
|          | 315     | 8.99 | 9.74     | 10.84  | 10.88    | 10.93    | 10.63    |
|          | 630     | 8.94 | 10.03    | 10.53  | 10.17    | 10.42    | 10.28    |
|          | 1260    | 9.26 | 9.24     | 10.94  | 10.51    | 10.38    | 9.79     |
| GRASS    | 0       | 9.49 | 9.90     | 10.66  | 11.09    | 10.15    | 10.39    |
|          | 315     | 9.44 | 9.71     | 10.99  | 10.72    | 10.55    | 11.03    |
|          | 630     | 9.83 | 9.39     | 10.98  | 10.95    | 9.97     | 10.14    |
|          | 1260    | 9.28 | 9.78     | 10.88  | 10.81    | 9.76     | 9.90     |

GRAIN MEAN DM% 82.7

PLOT AREA HARVESTED 0.00140