

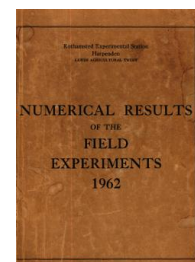
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# Yields of the Field Experiments 1962

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## 62/R/B/2 and 62/W/B/2 Reference Plots

### Rothamsted Research

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62/B/2.1

REFERENCE PLOTS

ROTHAMSTED (R) GREAT FIELD IV

WOBURN (W) STACKYARD SERIES C 1962

The effects of N,P,K and Dung (R and W), and of Mg,Ca,S and trace elements in the presence of N,P,K (R), on a sequence of five arable crops. Also the effects of N,P,K and Dung on permanent grass (R and W) and soft fruit (W).

Cultivations, etc.:

Great Field IV (R):-

Winter wheat: Dug by hand: Sept 18, 1961. P,K,Mg,Ca and S applied and seed drilled: Oct 9. First N dressings applied: Mar 13, 1962. Second N dressings and trace element spray applied: May 1. Harvested: Aug 29. Variety: Cappelle.

Kale: Dung applied, all plots dug by hand: Nov 30, 1961. P,K,Mg,Ca and S and first dressings of N applied, all plots rotary cultivated, seed sown: Mar 22, 1962. Second dressing of N applied: June 12. Trace element spray applied: July 2. Harvested: Nov 20. Variety: Thousand Head.

Barley: Dug by hand: Dec 8, 1961. N,P,K,Mg,Ca and S applied and rotary cultivated in, seed drilled: Mar 20, 1962. Trace element spray applied: May 18. Harvested: Aug 24. Variety: Proctor.

Grass - clover ley: Undersown in barley: Mar 9, 1961. N,P,K,Mg,Ca and S applied: Mar 12, 1962. Trace element spray applied: May 1. Cut four times: Oct 31, June 12, Aug 1 and Oct 10. Varieties: S22 Italian Ryegrass and Dorset Marl Red Clover.

Potatoes: Dung applied: Nov 30, 1961. Dug by hand: Dec 7. P,K,Mg,Ca and S and first dressing of N applied and setts planted: Mar 22, 1962. Second dressing of N applied: June 12. Trace element spray applied: July 2. Harvested: Aug 25\* and Sept 17.\*\* Variety: King Edward.

Permanent grass: Dung applied: Nov 30, 1961. P and K and first N dressing applied: Mar 12, 1962. Second N dressing applied: June 12. Cut twice: June 12 and Oct 4.

Stackyard Series C (W):-

Oats: Hydrated lime applied at 25 cwt per acre: Oct 30, 1961. Rotary cultivated: Mar 2, 1962. Hydrated lime applied at 25 cwt per acre P and K and first dressing of N applied, seed drilled: Mar 5. Resown because of pheasant damage: Apr 26. Second N dressing applied: May 10. Harvested: Aug 27. Variety: Condor.

Sugar beet: Dung applied, all plots dug by hand: Feb 6, 1962. Hydrated lime applied at 25 cwt per acre: Mar 2. P and K and first N dressing applied and rotary cultivated in, seed sown: Mar 26. Second N dressing applied: June 7. Harvested: Oct 18. Variety: Klein E.

\* All plots without K, \*\* remainder.

+ Insert " : Mar 2."



62/B/2.2

- Barley: Hydrated lime applied at 25 cwt per acre: Oct 30, 1961.  
Rotary cultivated: Mar 2, 1962. Hydrated lime applied at 25 cwt per acre<sup>+</sup> P and K and first N dressing applied and rotary cultivated in, seed drilled: Mar 5. Resown because of pheasant damage: Apr 14. Second N dressing applied: May 10. Harvested: Aug 16. Variety: Proctor.
- Grass - clover ley: Undersown in barley: Mar 8, 1961. Hydrated lime applied at 25 cwt per acre: Mar 2, 1962. N,P and K applied: Mar 9. Cut four times: Oct 23, June 7, July 31 and Sept 27. Varieties: S22 Italian Ryegrass and Dorset Marl Red Clover.
- Potatoes: Dung applied, all plots dug by hand: Feb 6, 1962. Hydrated lime applied at 25 cwt per acre: Mar 2. P and K and first N dressing applied and rotary cultivated in, setts planted: Mar 26. Second N dressing applied: June 7. Harvested: Sept 18. Variety: King Edward.
- Permanent grass: Dung applied: Feb 6, 1962. Hydrated lime applied at 25 cwt per acre; Mar 2. P and K and first N dressing applied: Mar 9. Second N dressing applied: June 7. Cut twice: June 7 and Sept 27.
- Soft fruit: Dung applied: Feb 6, 1962. N,P and K applied: Mar 9. Varieties: Blackcurrants - Wellington XXX; Gooseberry - Careless; Strawberry - Cambridge Vigour.

Note: For details of the previous years' results, and for rates of fertilisers etc., see "Results of the Field Experiments" 58/Bc/1, 59/Bc/1, 60/B/3 and 61/B/2.

Addendum to "Results of the Field Experiments" 61/B/2.1: sowing date for winter wheat - Oct 7, 1960.

<sup>+</sup>Insert ": Mar 2."



Summary of Results  
Great Field IV (R): Original plots

| Treatment                       | cwt per acre  |               | tons per acre      | cwt per acre        |                     |         |         | tons per acre | cwt per acre    |                      | tons per acre          |                 |         |       |
|---------------------------------|---------------|---------------|--------------------|---------------------|---------------------|---------|---------|---------------|-----------------|----------------------|------------------------|-----------------|---------|-------|
|                                 | Winter Grain  | wheat Straw   |                    | 1st cut             | 2nd cut             | 3rd cut | 4th cut |               | Total of 4 cuts | Permanent dry matter |                        | Total of 2 cuts |         |       |
|                                 | (at 85% D.M.) | (at 85% D.M.) | Kale: total weight | Grain (at 85% D.M.) | Straw (at 85% D.M.) | 1st cut | 2nd cut | 3rd cut       | 4th cut         | Total of 4 cuts      | Potatoes: total tubers | 1st cut         | 2nd cut | Total |
| None                            | 18.1          | 23.2          | 6.94               | 17.6                | 14.6                | 5.6     | 24.7    | 14.4          | 16.3            | 61.0                 | 3.31                   | 10.3            | 17.0    | 27.3  |
| N <sub>1</sub>                  | 22.0          | 30.1          | 10.42              | 20.5                | 18.6                | 2.8     | 36.3    | 11.3          | 18.1            | 68.5                 | 2.76                   | 19.2            | 17.7    | 36.9  |
| P                               | 32.8          | 43.9          | 7.82               | 20.5                | 19.5                | 3.4     | 32.0    | 12.1          | 16.6            | 64.1                 | 2.36                   | 10.0            | 14.5    | 24.5  |
| N <sub>1</sub> P                | 29.9          | 37.4          | 17.36              | 25.6                | 23.9                | 2.9     | 31.4    | 7.6           | 13.7            | 55.6                 | 2.72                   | 23.1            | 19.7    | 42.8  |
| K                               | 33.1          | 46.5          | 5.90               | 15.3                | 13.8                | 4.6     | 27.9    | 16.7          | 18.6            | 67.8                 | 8.48                   | 10.5            | 12.9    | 23.4  |
| N <sub>1</sub> K                | 36.7          | 52.6          | 7.29               | 21.6                | 17.2                | 7.2     | 24.9    | 13.4          | 15.7            | 61.2                 | 9.40                   | 31.7            | 26.6    | 58.3  |
| PK                              | 38.1          | 51.4          | 10.59              | 18.5                | 17.2                | 6.3     | 49.1    | 20.8          | 25.1            | 101.3                | 12.00                  | 15.8            | 20.2    | 36.0  |
| N <sub>1</sub> PK               | 42.0          | 55.1          | 15.28              | 31.6                | 28.1                | 6.8     | 49.4    | 19.1          | 25.0            | 100.3                | 13.32                  | 36.2            | 18.8    | 55.0  |
| N <sub>2</sub> PK               | 38.8          | 60.5          | 19.44              | 34.8                | 34.7                | 7.7     | 43.0    | 13.0          | 21.2            | 84.9                 | 12.76                  | 38.2            | 27.7    | 65.9  |
| D                               | 38.6          | 49.8          | 9.20               | 21.6                | 21.1                | 6.4     | 40.2    | 17.6          | 20.6            | 84.8                 | 12.94                  | 28.3            | 17.2    | 45.5  |
| N <sub>1</sub> PKD              | 46.7          | 68.8          | 19.44              | 31.5                | 28.9                | 5.8     | 47.6    | 19.5          | 26.6            | 99.5                 | 14.06                  | 45.7            | 26.3    | 72.0  |
| N <sub>2</sub> PKD              | 42.7          | 65.4          | 24.83              | 30.0                | 40.0                | 7.0     | 50.8    | 13.1          | 20.7            | 91.6                 | 17.12                  | 48.7            | 27.4    | 76.1  |
| Mean dry matter % as harvested: | 79.3          | 71.9          |                    | 75.8                | 54.1                | 22.0    | 23.4    | 23.8          | 19.7            | 22.2                 |                        | 27.8            | 26.0    | 26.9  |

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Great Field IV (R): Additional plots

| Treatment                     | cwt per acre                           |                           | tons per acre Kale: total weight | Barley Grain Straw (at 85% D.M.) |         | cwt per acre Ley: dry matter |         |      |      | Total of 4 cuts | tons per acre Potatoes: total tubers |
|-------------------------------|--|---------------------------|----------------------------------|----------------------------------|---------|------------------------------|---------|------|------|-----------------|--------------------------------------|
|                               | Winter wheat Grain Straw (at 85% D.M.) | Wheat Straw (at 85% D.M.) |                                  | 1st cut                          | 2nd cut | 3rd cut                      | 4th cut |      |      |                 |                                      |
| None                          | 39.6                                   | 51.5                      | 11.37                            | 19.9                             | 14.0    | 7.7                          | 33.5    | 15.3 | 20.8 | 77.3            | 6.08                                 |
| N <sub>2</sub> PK             | 48.0                                   | 81.2                      | 19.18                            | 38.8                             | 41.6    | 7.7                          | 48.3    | 10.6 | 12.5 | 79.1            | 15.58                                |
| N <sub>2</sub> PK Mg Ca       | 41.8                                   | 64.4                      | 21.79                            | 37.8                             | 37.8    | 8.0                          | 45.3    | 9.3  | 11.6 | 74.2            | 13.96                                |
| N <sub>2</sub> PK Mg S        | 42.5                                   | 68.9                      | 24.40                            | 40.9                             | 39.5    | 9.4                          | 38.9    | 8.4  | 10.5 | 67.2            | 15.52                                |
| N <sub>2</sub> PK Ca S        | 45.6                                   | 71.9                      | 20.22                            | 45.3                             | 41.8    | 8.9                          | 48.3    | 10.5 | 16.4 | 84.1            | 14.84                                |
| N <sub>2</sub> PK Mg Ca S     | 37.3                                   | 67.6                      | 22.66                            | 39.2                             | 39.2    | 8.3                          | 42.5    | 8.7  | 13.9 | 73.4            | 14.98                                |
| N <sub>2</sub> PK Mg Ca S TE  | 49.2                                   | 69.2                      | 22.14                            | 41.5                             | 41.5    | 8.3                          | 43.4    | 10.4 | 20.4 | 82.5            | 14.28                                |
| Mean dry matter as harvested: | 80.5                                   | 79.1                      |                                  | 76.3                             | 46.1    | 20.6                         | 27.1    | 25.5 | 20.3 | 23.4            |                                      |



Stackyard Series C (W)

| Treatment                             | cwt per acre                   |                        | tons per acre<br>Sugar<br>beet<br>roots<br>(washed) | Barley                 |                        | cwt per acre<br>Ley: dry matter |            |            |            | tons<br>per acre<br>Potatoes<br>total<br>tubers | cwt per acre<br>Permanent grass: |            | Total<br>of 2<br>cuts |      |
|---------------------------------------|--------------------------------|------------------------|---|------------------------|------------------------|---------------------------------|------------|------------|------------|---|----------------------------------|------------|-----------------------|------|
|                                       | Oats<br>Grain<br>(at 85% D.M.) | Straw<br>(at 85% D.M.) |   | Grain<br>(at 85% D.M.) | Straw<br>(at 85% D.M.) | 1st<br>cut                      | 2nd<br>cut | 3rd<br>cut | 4th<br>cut |   | 1st<br>cut                       | 2nd<br>cut |                       |      |
| None                                  | 12.7                           | 10.8                   | 10.25   | 10.5                   | 8.4                    | 10.4                            | 28.0       | 7.5        | 16.4       | 62.3  | 5.52                             | 30.4       | 10.0                  | 40.4 |
| N <sub>1</sub>                        | 21.2                           | 17.4                   | 12.26   | 16.9                   | 15.8                   | 9.9                             | 29.7       | 10.2       | 18.6       | 68.4  | 7.16                             | 37.0       | 19.2                  | 56.2 |
| P                                     | 18.7                           | 15.6                   | 11.59   | 13.2                   | 10.8                   | 11.0                            | 25.3       | 8.2        | 15.8       | 60.3  | 5.04                             | 26.6       | 8.1                   | 34.7 |
| N <sub>1</sub> P                      | 26.1                           | 19.5                   | 11.36   | 17.3                   | 16.5                   | 10.3                            | 30.1       | 9.1        | 17.1       | 66.6  | 6.68                             | 37.8       | 17.0                  | 54.8 |
| K                                     | 14.1                           | 12.4                   | 10.50   | 12.5                   | 10.4                   | 12.6                            | 29.1       | 7.6        | 20.0       | 69.3  | 7.00                             | 31.3       | 14.6                  | 45.9 |
| N <sub>1</sub> K                      | 21.4                           | 17.3                   | 13.24   | 18.2                   | 16.0                   | 10.2                            | 34.3       | 9.7        | 20.3       | 74.5  | 10.00                            | 41.9       | 20.7                  | 62.6 |
| PK                                    | 18.5                           | 15.3                   | 11.85   | 9.4                    | 8.8                    | 12.9                            | 31.7       | 8.7        | 21.6       | 74.9  | 8.32                             | 35.5       | 13.7                  | 49.2 |
| N <sub>1</sub> PK                     | 20.9                           | 18.4                   | 13.64   | 18.4                   | 20.5                   | 12.8                            | 34.9       | 7.1        | 21.1       | 75.9  | 9.24                             | 43.1       | 20.8                  | 63.9 |
| N <sub>2</sub> PK                     | 23.3                           | 18.5                   | 13.14   | 20.5                   | 22.4                   | 9.8                             | 37.3       | 10.1       | 19.6       | 76.8  | 10.92                            | 52.5       | 31.0                  | 83.5 |
| D                                     | 16.9                           | 13.8                   | 13.40   | 14.2                   | 12.6                   | 12.2                            | 32.6       | 8.2        | 20.6       | 73.6  | 12.72                            | 39.3       | 11.3                  | 50.6 |
| N <sub>1</sub> PKD                    | 23.6                           | 20.1                   | 7.43*   | 22.2                   | 24.7                   | 14.9                            | 30.2       | 10.3       | 22.4       | 77.8  | 14.91                            | 46.9       | 28.7                  | 75.6 |
| N <sub>2</sub> PKD                    | 27.2                           | 23.1                   | 15.54   | 26.8                   | 21.9                   | 10.2                            | 37.1       | 7.7        | 22.5       | 77.5  | 19.41                            | 54.3       | 39.9                  | 94.2 |
| Mean dry<br>matter % as<br>harvested: | 75.1                           | 40.9                   |   | 72.1                   | 56.7                   | 14.0                            | 21.9       | 22.4       | 17.9       | 19.0  |                                  | 25.8       | 19.6                  | 22.7 |

\*Badly damaged by pheasants. All the other plots were affected to some extent.