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66/R/C/21 Rate of Action of P Fertilisers 1966-67 - Early Potatoes and Radishes

Rothamsted Research

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66/c/21.1

EARLY POTATOES FOLLOWED BY RADISHES

(ER)

The rate of action of P fertilisers, Delharding, 1966, the first year.

Design: 3 replicates of 7 x 2 x 2 plus 2 plots per block without P, in 6 blocks of 16 plots.

| Area of each plot: | Area harvested: |
|--------------------|-----------------|
| Potatoes: 0.0018 | 0.0009 |
| Radishes: 0.0006 | 0.0003 |

Treatments to potatoes only: No P (0) (2 plots per block) and all combinations of:-

1. Phosphatic fertilisers:

| | |
|---|-------|
| Triple superphosphate | (S) |
| Potassium metaphosphate | (K) |
| Triple superphosphate plus potassium metaphosphate* | (SK) |
| Magnesium ammonium phosphate | (M) |
| Triple superphosphate plus magnesium ammonium phosphate* | (SM) |
| Potassium metaphosphate plus magnesium ammonium phosphate* | (KM) |
| Triple superphosphate plus potassium metaphosphate plus magnesium ammonium phosphate* | (SKM) |

* Each material supplying half the P (one third in treatment SKM).

2. Levels of P: 24 lb (I1), 48 lb (I2) P.

3. Type of fertiliser: Powder, less than 1 mm. (P), granular 1-4 mm. (G).

All applied to potatoes with 'Nitro-Chalk', muriate of potash and kieserite in amounts adjusted to give a total of 100 lb N, 200 lb K and 50 lb Mg.

Basal applications: Ground chalk at 15 cwt. To radishes: 60 lb N and 50 lb K as (16:0:16). Weedkiller:- To potatoes: 1 lb linuron plus 0.75 lb ion paraquat in 50 gals. Insecticide:- To radishes: DDT at 5 oz in 40 gals.

Cultivations, etc.: Ploughed: Oct 25, 1965. Limed: Mar 2, 1966.

66/c/21.2

Potatoes: Fertilisers applied: Mar 28, 1966. Rotary cultivated, potatoes planted: Mar 30. Weedkiller applied: Apr 28. Harvested: July 11. Variety: Arran Pilot.
Radishes: Rotary cultivated, basal NK applied, seed drilled at 25 lb: July 14, 1966. Insecticide applied: July 25. Harvested: Sept 6. Variety: French Breakfast. Previous crops: Fallow 1964 and 1965.

NOTE: The soil was sampled in spring 1966 for P determination.

Standard error per plot.

Potatoes, Total tubers: 1.000 or 11.2% (59 d.f.)
Radishes, Fresh weight: 2.004 or 12.0% (60 d.f.)

66/C/21.3

SUMMARY OF RESULTS

| | O | S | K | SK | M | SM | KM | SKM | Mean |
|------------------------|----------|-------|-------|----------|-------|-------|-------|-------|----------|
| POTATOES: TOTAL TUBERS | | | | | | | | | |
| Mean | 5.62 | 10.09 | 9.34 | 9.96 | 8.25 | 10.28 | 9.01 | 9.08 | 8.95 |
| | | | | (±0.408) | | | | | (±0.134) |
| L1 | | 8.85 | 8.85 | 8.84 | 7.98 | 9.63 | 7.83 | 8.05 | 8.58 |
| L2 | | 11.33 | 9.82 | 11.08 | 8.52 | 10.92 | 10.18 | 10.12 | 10.28 |
| P | | 10.45 | 9.28 | 9.86 | 9.41 | 10.62 | 9.99 | 9.76 | 9.91 |
| G | | 9.73 | 9.39 | 10.05 | 7.10 | 9.93 | 8.02 | 8.41 | 8.95 |
| RADISHES: FRESH WT. | | | | | | | | | |
| Mean | 6.86 | 17.50 | 19.76 | 17.83 | 18.29 | 17.89 | 17.55 | 17.35 | 16.63 |
| | (±0.578) | | | (±0.818) | | | | | (±0.268) |
| L1 | | 15.91 | 18.08 | 16.17 | 15.31 | 16.07 | 16.20 | 16.61 | 16.34 |
| L2 | | 19.08 | 21.44 | 19.48 | 21.26 | 19.72 | 18.90 | 18.10 | 19.71 |
| P | | 17.16 | 18.05 | 16.65 | 18.07 | 17.50 | 16.79 | 16.87 | 17.30 |
| G | | 17.83 | 21.48 | 19.01 | 18.50 | 18.29 | 18.30 | 17.83 | 18.75 |