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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
	(± 0.289)			(± 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