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Yields of the Field Experiments 1954

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54/R/CD/2 Potatoes - Method of Planting and Late N and K

Rothamsted Research

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54/Cd/2.1

POTATOES

Methods of planting, Levels of compound fertilizer and Late N and K -
Deacons Field 1954.

System of replication: 4 randomized blocks of 12 plots each, plots being split into 2 for the late application of N and K with the NK interaction confounded with whole plot differences and certain high order interactions confounded with block differences.

Area of each sub plot: 0.0140 acre. Area harvested: 0.0105 acre.

Treatments:

Whole plots: All combinations of:-

Compound granular fertilizer (7% N, 7% P₂O₅, 10.5% K₂O): None; 7½; 15 cwt per acre.

Methods of planting and fertilizer application: Ridge, broadcast fertilizer, hand plant and split back ridges at once (A); Ridge, expose ridges for 7 days, broadcast fertilizer, hand plant same time as A and split back ridges (B); Broadcast fertilizer on flat, plant from flat with dropper (C); Plant from flat with dropper, fertilizer placed 2" to side of seed (D).

Sub plots: All combinations of:-

N: None; 0.53 cwt per acre applied as sulphate of ammonia.

K₂O: None; 0.79 cwt per acre applied as muriate of potash.

Both N and K₂O were applied as top dressings before the final earthing up.

Basal dressing: None.

Cultivations, etc.: Ploughed: Oct 21, 1953. Ridged 'B' plots: Apr 23, 1954. Ridged 'A', fertilizers applied to 'B' and 'C': Apr 28. Applied fertilizer to 'A', planted 'A' and 'B', machine planted 'C' and 'D' with placed fertilizer on 'D': Apr 29. Late NK dressings applied: July 7. Earthed up: July 9. Sprayed with copper fungicide, low volume, 5 lb in 10 gallons per acre: July 29 and again Aug 26. Sprayed with sulphuric acid, 20% B.O.V.: Oct 6. Lifted: Oct 26. Variety: Majestic. Previous crop: Barley.

Standard errors per plot: Total tubers.

Whole plot: 1.26 tons per acre or 12.1% (33 d.f.)

Sub plot: 0.860 tons per acre or 8.2% (24 d.f.)*

*2 missing sub plot values.

54/Ca/2.2

Summary of Results

	Compound fertilizer: cwt per acre				Mean
	A	B	C	D	
	7.5				
	15.0				
	A				
	C+D				
	None				
	A	B	C	D	Mean
N: cwt per acre	(±0.701)*	(±0.496)*	(±0.701)*	(±0.701)*	
None	5.99	7.31	8.06	8.47	10.00
0.53	7.89	9.60	9.31	8.90	10.88
Difference (±0.608)	+1.90	+2.29	+1.25	+0.43	+0.88 (±0.175)
	(±0.701)*	(±0.496)*	(±0.701)*	(±0.701)*	
K ₂ O: cwt per acre	6.51	8.13	8.47	8.47	10.47
None	7.38	8.78	8.90	8.90	10.41
0.79	+0.87	+0.65	+0.43	+0.43	-0.06 (±0.175)
Difference (±0.608)	+0.87	+0.65	+0.43	+0.43	-0.06 (±0.175)
Mean (±0.632)	6.94	8.46	8.68	8.68	10.44

N: cwt per acre
None | 0.53

K₂O: cwt per acre
None | 10.86

(1) ±0.430 (2) ±0.447
*for use in comparisons other than vertical.
A. Ridge, broadcast fertilizer, hand plant and split back ridges at once.
B. Ridge land, expose for 7 days then broadcast fertilizer over ridges, hand plant, split back ridges.
C. Broadcast fertilizer on flat, plant from flat with dropper,
D. Plant from flat with dropper, fertilizer placed 2" to side of seed.

54/cd/2.3

	Compound fertilizer: cwt per acre										Mean	
	None		7.5		15.0							
	A	B	A	B	A	B	A	B	C	D		
N: cwt per acre												
None	76.6	79.8	76.5	78.6	77.7	76.7	72.8	79.8	78.5	78.0	69.3	76.7
0.53	75.9	80.4	72.6	79.3	77.2	75.7	74.1	73.9	73.3	67.4	71.8	74.5
Difference	-0.7	+0.6	-3.9	+0.7	-0.5	-1.0	+1.3	-5.9	-5.2	-10.6	+2.5	-2.2
K ₂ O: cwt per acre												
None	77.8	78.1	73.7	81.1	79.6	76.9	74.6	77.6	74.5	76.3	69.6	76.1
0.79	74.7	82.2	75.5	76.8	75.3	75.5	72.3	76.2	77.3	69.1	71.5	75.2
Difference	-3.1	+4.1	+1.8	-4.3	-4.3	-1.4	-2.3	-1.4	+2.8	-7.2	+1.9	-0.9
Mean	76.2	80.1	74.6	78.9	77.4	76.2	73.5	76.9	75.9	72.7	70.6	75.6

Percentage ware

K ₂ O: cwt per acre	N: cwt per acre	
	None	0.53
None	77.7	74.5
0.79	75.8	74.5

- A. Ridge, broadcast fertilizer, hand plant and split back ridges at once.
- B. Ridge land, expose for 7 days then broadcast fertilizer over ridges, hand plant, split back ridges.
- C. Broadcast fertilizer on flat, plant from flat with dropper.
- D. Plant from flat with dropper, fertilizer placed 2" to side of seed.