

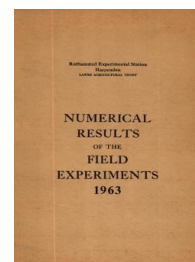
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Yields of the Field Experiments 1963

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63/R/NL/B/9 N Levels and Residues Two Course Rotation

Rothamsted Research

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63/B/9.1

N LEVELS AND RESIDUES ROTATION

(NL)

Direct and residual effects of sulphate of ammonia - Long Hoos III 1963, the fourth year.

Rotation: Wheat, potatoes.

Design (each crop): 3 x 3 x 3 in 3 blocks of 9 plots each.

Area of each plot: 0.0212 acres. Area harvested: 0.0141 acres.

Treatments. All combinations of:-

Nitrogen at 3 levels in 1963.

Nitrogen at 3 levels in 1960, and repeated on the same plots in 1962.

Nitrogen at 3 levels in 1961.

To wheat: None, 0.5, 1.0 cwt N per acre.

To potatoes: None, 0.75, 1.50 cwt N per acre.

The nitrogen was applied as sulphate of ammonia.

Note: Ground chalk in addition to basal dressing was applied at 1 cwt for each cwt of sulphate of ammonia applied during the years 1960, 1961 and 1962.

Basal dressings (per acre):

To wheat: 2.25 cwt compound fertiliser (14% $P_{2}O_{5}$, 28% $K_{2}O$), combine drilled.

To potatoes: 5 cwt compound fertiliser (14% $P_{2}O_{5}$, 28% $K_{2}O$), broadcast on flat.

Cultivations, etc.:

Wheat: Corrective dressings of ground chalk applied: Oct 11, 1962.

Basal ground chalk applied at 30 cwt per acre: Oct 22. Ploughed: Nov 15. Seed drilled at 3.25 bushels per acre: Dec 17. Sulphate of ammonia applied: Apr 26, 1963. Sprayed with mecoprop/2,4-D at 3.2 pints in 40 gallons per acre: May 21. Combine harvested: Sept 10. Variety: Cappelle.

Potatoes: Corrective dressings of ground chalk applied: Oct 11, 1962.

Basal ground chalk applied at 30 cwt per acre: Oct 22. Ploughed: Nov 14. Basal fertiliser broadcast on flat: Apr 30, 1963. Sulphate of ammonia applied: May 4. Potatoes planted: May 6. Earthed up:

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June 27. Sprayed with maneb at 1.2 lb in 20 gallons per acre:
 July 11. Sprayed with copper oxychloride fungicide at 2.3 lb copper
 in 20 gallons per acre: Sept 3. Sprayed with undiluted BOV at 16
 gallons per acre: Sept 12. Lifted: Oct 8. Variety: Majestic.

Note: For details of the previous years' results see 'Results of the
 Field Experiments' 60/B/10, 61/B/9 and 62/B/9.

Standard errors per plot.

Wheat, Grain (at 85% dry matter): 2.60 cwt per acre or 7.9% (15 d.f.)
 Potatoes, Total tubers: 0.566 tons per acre or 4.8% (15 d.f.)

Summary of Results

Wheat, Grain (at 85% dry matter): cwt per acre

N: cwt per acre in 1961	N: cwt per acre in 1960 and 1962			N: cwt per acre in 1963			Mean
	None	0.75	1.50	None	0.5	1.0	
	(±1.50)			(±1.50)			(±0.87)
None	29.8	30.7	36.8	25.1	33.2	38.9	32.4
0.5	28.3	32.5	36.7	26.0	30.5	41.1	32.5
1.0	28.2	35.0	38.2	27.9	34.8	38.8	33.8
	N: cwt per acre in 1960 and 1962						
		None		19.9	30.7	35.7	28.8
		0.75		27.2	32.1	38.9	32.7
		1.50		31.9	35.7	44.2	37.3
	Mean (±0.87)			26.3	32.8	39.6	32.9

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Potatoes

N: cwt per acre in 1961	N: cwt per acre in 1960 and 1962			N: cwt per acre in 1963			Mean
	None	0.5	1.0	None	0.75	1.50	
<u>Total tubers: tons per acre</u>							
	(±0.327)			(±0.327)			(±0.189)
None	11.19	11.54	12.06	8.62	12.44	13.72	11.59
0.75	11.44	11.89	12.26	8.80	12.52	14.27	11.86
1.50	12.35	11.54	12.43	8.84	13.45	14.03	12.10
	N: cwt per acre in 1960 and 1962						
		None		8.21	12.43	14.34	11.66
		0.5		8.67	12.87	13.42	11.65
		1.0		9.38	13.11	14.26	12.25
	Mean (±0.189)			8.75	12.80	14.01	11.85
<u>Percentage ware (1.5 inch riddle)</u>							
None	95.1	94.3	94.9	93.2	95.3	95.9	94.8
0.75	94.6	95.7	95.5	94.0	95.8	95.9	95.2
1.50	94.7	96.1	95.3	94.1	95.7	96.2	95.3
	N: cwt per acre in 1960 and 1962						
		None		93.7	95.3	95.3	94.8
		0.5		93.8	95.8	96.5	95.4
		1.0		93.8	95.7	96.1	95.2
	Mean			93.8	95.6	96.0	95.1