

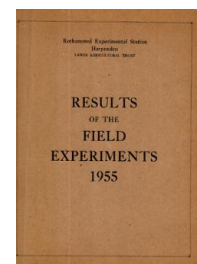
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Yields of the Field Experiments 1955

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55/R/BA/1 Three-course Rotation

Rothamsted Research

Rothamsted Research (1956) *55/R/BA/1 Three-course Rotation* ; Yields Of The Field Experiments 1955, pp 17 - 23 - DOI: <https://doi.org/10.23637/ERADOC-1-175>

55/Ba/1.1

THREE COURSE ROTATION EXPERIMENT

4th year of revised scheme

For details of treatments and rotation see "Results of the Field Experiments 1952", Section Ba/1.

Area of each plot: Potatoes (sub-plot), 0.0093 acre;
Barley, 0.0200 acre; Sugar beet, 0.0205 acre.

Cultivations, etc.:

Potatoes. Straw applied, all plots ploughed: Feb 3, 1955.
Fertilizers applied, potatoes planted: May 3. Earthed up:
July 5. Sprayed with sulphuric acid, 15% B.O.V: Sept 26.
Lifted: Oct 1. Variety: Majestic. Note: The crop yellowed
off and died down very early in the season.

Barley. Straw applied, all plots ploughed: Feb 3, 1955.
Ground chalk applied at 20 cwt per acre: Mar 19. Seed drilled
at 3 bushels per acre: Mar 22. Fertilizers applied: Mar 28.
Harvested: Aug 11. Variety: Plumage Archer.

Sugar beet. Straw applied, all plots ploughed: Feb 3, 1955.
Fertilizers applied: Apr 15. Seed drilled at 18 lb per acre:
Apr 16. Sprayed with D.D.T. emulsion, 3 pints in 40 gallons
per acre: June 13. Singled: June 18. Lifted: Nov 17.
Variety: Klein E.

Treatment symbols:-

Old Scheme

- Ar Complete artificials only
- St1 Straw ploughed in in autumn, artificials applied in spring
- St2 Straw ploughed in in autumn, artificials applied half in autumn,
half in spring
- Ad Adco ploughed in in autumn with supplementary artificials.

Revised Scheme

- St $5\frac{1}{3}$ cwt cut straw per acre in autumn
- Nitrogen dressing: 0.2; 0.4; 0.6 cwt N per acre as sulphate of
ammonia
- K_s Muriate of potash equivalent to K₂O in straw
- K 0.5 cwt K₂O per acre as muriate of potash.

Summary of Results

Potatoes

Treatments applied:	1953 and 1955	1955	0	0.4N	St + 0.2N	St + 0.6N	K _s	K + 0.4N
1950	1952 & 1954	-	-	-	-	-	-	-
Ar	Ar	3.67	3.66	3.78	4.32	3.72	4.40	4.05
St1 St2	St1 St2	4.35	4.06	4.16	4.12	4.56	4.47	5.26
St1 St2	St1 St2	4.09	4.19	3.68	4.15	4.00	4.08	4.00
Ad	Ad	4.07	4.38	4.13	4.52	4.95	5.48	4.38
		3.54	3.45	4.46	4.06	4.23	4.46	4.08
		3.40	3.13	4.23	4.46	4.95	5.48	4.38
		3.94	3.71	4.23	4.46	4.95	5.48	4.38

Total tubers: tons per acre

Treatments applied:		Potatoes								
1950	1951	1953 and 1955	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N	K	
		1955	-	-	-	-	-	-	-	
		1952 & 1954	-	-	-	-	-	-	-	
Percentage Ware (1½" riddle)										
Ar	Ar	0	64.7	69.8	69.4	69.8	73.0			
		0.4N								
Ar		0	63.4	75.1	68.6	75.1	73.7			
		0.4N								
St1 St2	St1 St2	0	70.2	69.1	69.6	71.7	68.6	69.8	69.4	74.5
		0.4N								
St1 St2		0	76.2	68.1	67.7	71.9	68.1	71.9		
		0.4N								
		St+ 0.2N	78.2	65.1	71.7	75.6	65.1	75.6		
		St+ 0.6N								
		K _s + 0.4N	66.5	76.1	73.3	66.5	76.1	66.5		
		0								
Ad	Ad	0	73.2	68.8	74.1	77.7	80.3	72.6	71.1	
		0.4N								
		St+ 0.6N	77.6							
		K _s + 0.4N	73.2							
			75.8							

55/Ba/1.4

Treatments applied:			Barley					
1953 and 1955			0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
1950	1951	1952 & 1954						
Grain (at 85% dry matter): cwt per acre								
	Ar	0		38.2				
		0.4N	32.8					
Ar		0		40.0				
		0.4N	34.4					
	St1 St2	0		40.3		34.4		38.2
		0.4N	32.9		29.5		33.1	
St1 St2		0		40.6				
		0.4N	32.8					
		St+ 0.2N		34.9				
		St+ 0.6N	29.5					
		K _s		40.3				
		K _s +0.4N	35.7					
	Ad	0		39.4		37.0		38.1
Ad		0.4N	39.9					
		St+ 0.6N	41.1					
		K _s + 0.4N	30.6					
Straw (at 85% dry matter): cwt per acre								
	Ar	0		39.8				
		0.4N	32.6					
Ar		0		43.0				
		0.4N	34.8					
	St1 St2	0		42.8		37.6		39.0
		0.4N	29.9		36.1		31.0	
St1 St2		0		45.0				
		0.4N	29.7					
		St+ 0.2N		34.5				
		St+ 0.6N	29.2					
		K _s		43.9				
		K _s +0.4N	33.6					
	Ad	0		43.0		37.9		39.6
Ad		0.4N	36.9					
		St+ 0.6N	38.9					
		K _s + 0.4N	27.8					

Mean dry matter % as harvested Grain: 83.7
Straw: 80.8

55/Ba/1.5

Treatments applied: 1953 and 1955			Sugar Beet					
1950	1951	1952 & 1954	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
			Roots (washed): tons per acre					
	Ar	0		9.56				
		0.4N	6.74					
Ar		0		8.18				
		0.4N	6.72					
	St1 St2	0		7.40		8.45		7.55
		0.4N	7.05		7.07		8.47	
St1 St2		0		7.70				
		0.4N	7.07					
		St+ 0.2N		7.31				
		St+ 0.6N		7.99				
		K _s		8.01				
		K _s + 0.4N		8.18				
	Ad	0		9.54		7.44		7.77
Ad		0.4N	6.29					
		St+ 0.6N	5.98					
		K _s + 0.4N	9.49					
			Sugar Percentage					
	Ar	0		17.1				
		0.4N	17.1					
Ar		0		16.9				
		0.4N	16.7					
	St1 St2	0		16.8		16.5		17.0
		0.4N	16.8		17.3		16.9	
St1 St2		0		16.8				
		0.4N	17.0					
		St+ 0.2N		17.0				
		St+ 0.6N		17.5				
		K _s		16.8				
		K _s + 0.4N		17.6				
	Ad	0		17.2		16.6		16.1
Ad		0.4N	16.8					
		St+ 0.6N	16.6					
		K _s + 0.4N	17.6					

55/Ba/1.6

Sugar Beet

Treatments applied: 1953 and 1955			0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
1950	1951	1952 & 1954	Total sugar: cwt per acre					
	Ar	0		32.6				
		0.4N	23.1					
Ar		0		27.7				
		0.4N	22.4					
	St1 St2	0		24.8		27.9		25.8
		0.4N	23.7		24.5		28.7	
St1 St2		0		25.9				
		0.4N	24.1					
		St+ 0.2N		24.8				
		St+ 0.6N	28.0					
		K		27.0				
		K _s + 0.4N	28.8					
	Ad	0		32.9		24.8		25.1
Ad		0.4N	21.1					
		St+ 0.6N	19.9					
		K _s + 0.4N	33.5					
			Tops: tons per acre					
	Ar	0		6.87				
		0.4N	3.91					
Ar		0		6.18				
		0.4N	4.12					
	St1 St2	0		5.09		6.83		5.85
		0.4N	4.34		4.69		5.28	
St1 St2		0		5.65				
		0.4N	4.54					
		St+ 0.2N		5.28				
		St+ 0.6N	4.82					
		K		5.70				
		K _s + 0.4N	4.74					
	Ad	0		6.59		5.78		6.59
Ad		0.4N	3.78					
		St+ 0.6N	3.95					
		K _s + 0.4N	6.37					

Treatments applied:			Sugar Beet					
1953	and	1955	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
1950	1951	1952 & 1954	Plant number: thousands per acre					
	Ar	0		27.7				
		0.4N	31.1					
Ar		0		27.8				
		0.4N	29.6					
	St1 St2	0		26.7		28.2		26.9
		0.4N	27.7		29.5		28.0	
St1 St2		0		27.8				
		0.4N	29.7					
		St+ 0.2N		25.8				
		St+ 0.6N	30.6					
		K _s		27.6				
		K _s + 0.4N	28.7					
	Ad	0		27.8		26.7		29.5
Ad		0.4N	28.3					
		St+ 0.6N	25.8					
		K _s + 0.4N	26.9					