

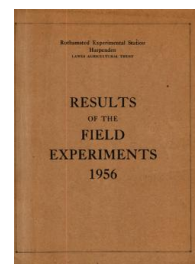
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56/R/BA/1 Three-course Rotation

Rothamsted Research

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56/Ba/1.1

THREE COURSE ROTATION EXPERIMENT

5th year of revised scheme

For history, treatments, etc., see "Details of the Classical and Long Term Experiments" 1956.

Area of each plot (acres): Potatoes (sub plot), 0.0092; barley, 0.0200; sugar beet, 0.0205.

Cultivations, etc.:

Potatoes.

Straw applied, all plots ploughed: Dec 2, 1955. Fertilizers applied: Apr 7, 1956. Potatoes machine planted: Apr 12. Earthed up: June 23. Sprayed with copper fungicide, 3 lb in 80 gallons per acre: July 25. Sprayed with sulphuric acid, 20% BOV at 80 gallons per acre: Sept 13. Lifted: Oct 11. Variety: Majestic.

Barley.

Straw applied, all plots ploughed: Dec 2, 1955. Ground chalk applied at 20 cwt per acre: Dec 7. Fertilizers applied, seed drilled at 3 bushels per acre: Mar 15, 1956. Sprayed with MCPA, 3 pints in 40 gallons per acre: May 15. Harvested: Aug 24. Variety: Plumage Archer.

Sugar beet.

Straw applied, all plots ploughed: Dec 2, 1955. Seed drilled at 18 lb per acre: Mar 29, 1956. Fertilizers applied: Mar 30. Singled: June 1 - 5. Lifted: Dec 6. Variety: Klein E.

56/Ba/1.2

Summary of Results

Potatoes

Treatments applied:	1950	1953 and 1955		1956		1952		1954 & 1956		Total tubers: tons per acre
		Ar	St1	St2	Ar	St1	St2	Ar	St1	
		0	0.4N	0	0.4N	0	0.4N	0	0.4N	9.94 9.85
Ar		11.98	10.72	10.79	10.72	11.40	12.37	10.72	12.37	8.63 9.51
St1 St2		9.65	10.38	11.54	13.39	11.59	12.17	11.88	13.29	10.04 10.09
St1 St2		9.21	10.62	9.65	11.11	8.83	10.28	9.75	8.83	10.09 9.12
		12.90	13.43	10.91	10.72	10.14	11.01	12.90	13.63	12.12 11.06
Ad		12.90	13.43	10.91	10.72	10.14	11.01	12.90	13.63	
		12.90	13.43	10.91	10.72	10.14	11.01	12.90	13.63	
		12.90	13.43	10.91	10.72	10.14	11.01	12.90	13.63	

Treatments applied:	1953 and 1955		1956		Potatoes							
	0	K	0	K	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N			
1950												
1951												
Ar	0	0.4N	86.4	88.1	85.9	84.2						
Ar	0	0.4N	87.6	87.6	87.8	87.1						
St1 St2	0	0.4N	85.3	82.1	85.8	87.1	88.0	88.6	87.2	89.2		
St1 St2	0	0.4N	86.7	87.0	88.9	88.8			88.8	87.4		
St1 St2	0.4N	St + 0.2N	87.1	85.3								
St1 St2	St + 0.6N	St + 0.6N	85.9	89.1								
Ad	K _s + 0.4N	K _s + 0.4N	86.9	85.4								
Ad	0	0	82.9	88.4			85.9	87.8	88.8	88.3		
Ad	0.4N	0.4N	85.8	88.1								
Ad	St + 0.6N	St + 0.6N	86.5	83.6								
Ad	K _s + 0.4N	K _s + 0.4N	89.9	91.7								

Percentage Ware (1½" riddle)

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Treatments applied:	1953 and 1955		Barley						
	1950	1951	1952	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
			1954 & 1956						
Grain (at 85% dry matter): cwt per acre									
	Ar		0	28.1					
			0.4N	28.9					
Ar			0	26.3					
			0.4N	29.5					
	St1	St2	0	28.8		29.6		28.5	
			0.4N	30.9		30.9		29.8	
St1	St2		0	27.5					
			0.4N	30.5					
			St+ 0.2N	30.2					
			St+ 0.6N	30.5					
			K _s	28.3					
			K _s + 0.4N	30.4					
	Ad		0	26.3		30.2		27.7	
Ad			0.4N	29.5					
			St+ 0.6N	29.3					
			K _s + 0.4N	27.5					
Straw (at 85% dry matter): cwt per acre									
	Ar		0	30.5					
			0.4N	28.5					
Ar			0	27.5					
			0.4N	30.1					
	St1	St2	0	29.3		31.6		33.6	
			0.4N	30.5		31.9		31.7	
St1	St2		0	26.6					
			0.4N	34.5					
			St+ 0.2N	29.9					
			St+ 0.6N	36.2					
			K _s	28.9					
			K _s + 0.4N	31.9					
	Ad		0	25.4		32.5		27.0	
Ad			0.4N	27.0					
			St+ 0.6N	32.5					
			K _s + 0.4N	26.4					

Mean dry matter % as harvested Grain: 79.0
Straw: 76.7

56/Ba/1.5

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 & 1956					
Roots (washed): tons per acre							
	Ar	0	8.88				
		0.4N	11.85				
Ar		0	9.10				
		0.4N	12.08				
	St1 St2	0	10.54	10.48			9.38
		0.4N	11.57	14.21		11.55	
St1 St2		0	9.21				
		0.4N	11.81				
		St+ 0.2N	9.58				
		St+ 0.6N	12.13				
		K _s	9.60				
		K _s + 0.4N	11.87				
	Ad	0	9.80	8.84			9.91
		0.4N	12.31				
Ad		St+ 0.6N	13.05				
		K _s + 0.4N	11.00				
Sugar Percentage							
	Ar	0	18.1				
		0.4N	18.4				
Ar		0	18.0				
		0.4N	18.1				
	St1 St2	0	18.2	17.8	17.8		18.7
		0.4N	18.6	17.8		18.1	
St1 St2		0	18.1				
		0.4N	18.2				
		St+ 0.2N	18.5				
		St+ 0.6N	18.3				
		K _s	18.0				
		K _s + 0.4N	18.6				
	Ad	0	18.1	18.4			18.1
		0.4N	18.2				
Ad		St+ 0.6N	18.1				
		K _s + 0.4N	17.8				

56/Ba/1.6

		Sugar Beet						
Treatments applied:	1953 and 1955	1952	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
1950	1951	1952 1954 & 1956						
Total sugar: cwt per acre								
	Ar	0		32.2				
		0.4N	43.6					
Ar		0		32.7				
		0.4N	43.8					
	St1 St2	0		38.4		37.2		35.1
		0.4N	43.0		50.6		41.9	
St1 St2		0		33.3				
		0.4N	42.9					
		St+ 0.2N		35.5				
		St+ 0.6N	44.4					
		K _s		34.6				
		K _s + 0.4N	44.3					
	Ad	0		35.5		32.5		35.9
Ad		0.4N	44.8					
		St+ 0.6N	47.1					
		K _s + 0.4N	39.1					
Tops: tons per acre								
	Ar	0		7.08				
		0.4N	9.47					
Ar		0		6.48				
		0.4N	9.22					
	St1 St2	0		7.75		7.97		5.81
		0.4N	8.34		9.71		10.96	
St1 St2		0		7.20				
		0.4N	9.76					
		St+ 0.2N		7.79				
		St+ 0.6N	10.00					
		K _s		7.44				
		K _s + 0.4N	9.41					
	Ad	0		7.31		6.09		7.73
Ad		0.4N	9.95					
		St+ 0.6N	11.70					
		K _s + 0.4N	10.19					

56/Ba/1.7

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 & 1956						
Plant number: thousands per acre								
	Ar	0		31.0				
		0.4N	29.6					
Ar		0		30.1				
		0.4N	30.4					
	St1 St2	0		31.1		30.0	30.9	
		0.4N	31.3		30.3		29.8	
St1 St2		0		31.1				
		0.4N	30.3					
		St+ 0.2N		30.1				
		St+ 0.6N	30.3					
		K _s		31.4				
		K _s +0.4N	30.7					
	Ad	0		30.4		30.8	30.6	
Ad		0.4N	30.4					
		St+ 0.6N	31.2					
		K _s + 0.4N	30.2					