ROTHAMSTED RESEARCH

Yields of the Field Experiments 1953

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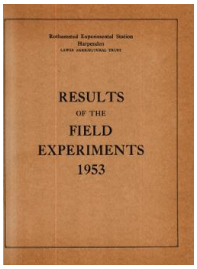

53/BA/1 Three-course Rotation - Rothamsted

Rothamsted Research

Rothamsted Research (1954) *53/BA/1 Three-course Rotation - Rothamsted ;* Yields Of The Field Experiments 1953, pp 13 - 19 **- DOI: https://doi.org/10.23637/ERADOC-1-173**

THREE COURSE ROTATION EXPERIMENT

2nd year of revised scheme

For details of rotation, treatments etc., see "Results of the Field Experiments 1952", Section 52/Ba/1.

Area of each plot: Potatoes (sub-plot) - 0.0092 acre; Barley - 0.0200 acre; Sugar beet - 0.0205 acre.

Cultivations, etc.:

Potatoes: Straw applied, ploughed all plots: Jan 22, 1953. Fertilizers applied: Mar 25. Ridged: Mar 27. Potatoes planted with mechanical dropper: Apr 11. Earthed up ridges: June 25. Sprayed with copper fungicide, 5½ lb per acre: July 28 and again Aug 8. Haulm destroyed mechanically: Sept 17. Lifted: Sept 28. Variety: Majestic.

Barley: Straw applied, ploughed all plots: Jan 22, 1953. Seed drilled at 3 bushels per acre, fertilizers applied: Feb 28. Harvested: Aug 11. Variety: Plumage Archer.

Sugar beet: Straw applied, ploughed all plots: Jan 22, 1953. Fertilizers applied: Mar 18. Seed drilled at 18 lb per acre: Mar 26. Sprayed with D.D.T. emulsion, 3 pints in 10 gallons: May 11. Singled: May 31. Lifted: Nov 12. Variety: Klein E.

Treatment symbols

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.
St $53\frac{1}{3}$ cwt cut straw in autumn.
Nitrogen dressing: 0.2, 0.4, 0.6 cwt N as sulphate of ammonia.
K_s Muriate of potash equivalent to K_2O in straw.
K^s 0.5 cwt K_2O as muriate of potash.

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Summary of Results

Potatoes

Treatments applied		1953	0		0.4N		St + 0.2N		St + 0.6N		K_s		K_s + 0.4N	
1950	1951	1952	-	K	-	K	-	K	-	K	-	K	-	K
			Total tubers: tons per acre											
	Ar	0			9.92	10.79								
		0.4N	8.49	8.24										
Ar		0			10.04	10.28								
		0.4N	7.54	8.44										
	St1 St2	0			11.54	11.88			11.40	12.03			9.55	10.77
		0.4N	9.60	8.68			9.31	9.21			10.38	9.17		
St1 St2		0			9.75	10.28								
		0.4N	9.70	9.85										
		St+0.2N			10.67	10.62								
		St+0.6N	9.17	8.88										
		K_s			9.36	9.99								
		K_s 0.4N	10.43	10.09										
	Ad	0			10.33	9.60			10.09	8.78			12.42	12.37
Ad		0.4N	8.34	9.31										
		St+0.6N	8.29	7.76										
		K_s 0.4N	11.30	11.15										

53/Ba/1.2

Potatoes

Treatments applied			1953	0		0.4N		St + 0.2N		St + 0.6N		K_s		K_s + 0.4N	
1950	1951	1952	1953	-	K	-	K	-	K	-	K	-	K	-	K
				Percentage ware											
	Ar	0				86.8	84.6								
		0.4N		82.5	87.3										
Ar		0				85.3	87.4								
		0.4N		82.2	86.3										
	St1 St2	0				87.7	91.2			85.6	88.3			86.7	89.5
		0.4N		82.0	82.8			89.9	84.8			84.2	82.8		
St1 St2		0				84.9	84.3								
		0.4N		89.6	84.9										
		St+0.2N				87.6	85.5								
		St+0.6N		87.4	86.4										
		K_s				86.9	90.1								
		K_s 0.4N		84.8	88.1										
	Ad	0				88.4	82.8			84.7	86.4			86.4	90.1
Ad		0.4N		81.4	87.7										
		St+0.6N		85.9	84.6										
		K_s 0.4N		84.6	83.8										

53/Ba/1.3

53/Ba/1.4

Barley

Treatments applied		1953	0	0.4N	St + 0.2N	St + 0.6N	K_s	K_s + 0.4N
1950	1951	1952						
			Grain: cwt per acre					
	Ar	0		31.2				
		0.4N	28.6					
Ar		0		30.2				
		0.4N	31.5					
	St1 St2	0		27.4		31.4		27.3
		0.4N	21.9		26.0		26.3	
St1 St2		0		30.4				
		0.4N	30.3					
		St+0.2N		30.7				
		St+0.6N	30.6					
		K_s		31.3				
		K_s 0.4N	26.0					
	Ad	0		28.0		30.0		31.4
Ad		0.4N	35.2					
		St+0.6N	28.5					
		K_s 0.4N	22.3					
			Straw: cwt per acre					
	Ar	0		44.8				
		0.4N	31.9					
Ar		0		41.3				
		0.4N	33.7					
	St1 St2	0		40.2		41.4		36.8
		0.4N	25.9		30.0		29.6	
St1 St2		0		41.9				
		0.4N	37.1					
		St+0.2N		46.5				
		St+0.6N	38.0					
		K_s		40.8				
		K_s 0.4N	39.7					
	Ad	0		35.9		41.7		39.4
Ad		0.4N	27.7					
		St+0.6N	30.2					
		K_s 0.4N	25.5					

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Sugar beet

Treatments applied		1953	0	0.4N	St + 0.2N	St + 0.6N	K_s	K_s + 0.4N
1950	1951	1952						
			Roots (washed): tons per acre					
	Ar	0		15.84				
		0.4N	12.07					
Ar		0		15.12				
		0.4N	12.45					
	St1 St2	0		16.04		14.25		14.53
		0.4N	12.09		12.31		14.62	
St1 St2		0		15.19				
		0.4N	13.73					
		St+0.2N		14.82				
		St+0.6N	12.81					
		K_s		15.39				
		K_s 0.4N	13.05					
	Ad	0		15.63		13.64		16.11
Ad		0.4N	12.31					
		St+0.6N	13.36					
		K_s 0.4N	12.83					
			Sugar percentage					
	Ar	0		17.98				
		0.4N	18.64					
Ar		0		18.44				
		0.4N	18.60					
	St1 St2	0		18.81		18.67		18.52
		0.4N	18.64		18.52		18.58	
St1 St2		0		18.29				
		0.4N	18.18					
		St+0.2N		18.44				
		St+0.6N	18.38					
		K_s		17.74				
		K_s 0.4N	18.23					
	Ad	0		18.34		18.55		17.74
Ad		0.4N	18.26					
		St+0.6N	17.86					
		K_s 0.4N	18.35					

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53/Ba/1.6

Sugar beet

Treatments applied		1953	0	0.4N	St + 0.2N	St + 0.6N	K_s	K_s + 0.4N
1950	1951	1952						
			Total sugar: cwt per acre					
	Ar	0		57.0				
		0.4N	45.0					
Ar		0		55.9				
		0.4N	46.5					
	St1 St2	0		60.2		53.3		53.7
		0.4N	45.0		45.4		54.1	
St1 St2		0		55.4				
		0.4N	49.8					
		St+0.2N		54.6				
		St+0.6N	47.1					
		K_s		54.6				
		K_s 0.4N	47.6					
	Ad	0		57.2		50.6		57.2
Ad		0.4N	45.0					
		St+0.6N	47.6					
		K_s 0.4N	47.1					
			Tops: tons per acre					
	Ar	0		8.33				
		0.4N	5.91					
Ar		0		7.31				
		0.4N	5.76					
	St1 St2	0		7.44		7.81		7.22
		0.4N	5.63		5.70		7.94	
St1 St2		0		7.70				
		0.4N	6.68					
		St+0.2N		7.73				
		St+0.6N	6.92					
		K_s		7.73				
		K_s 0.4N	6.13					
	Ad	0		8.82		6.79		8.64
Ad		0.4N	6.22					
		St+0.6N	6.94					
		K_s 0.4N	5.87					

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Sugar beet

Treatments applied		1953	0	0.4N	St + 0.2N	St + 0.6N	K_s	K_s + 0.4N
1950	1951	1952						
			Plant number: thousands per acre					
	Ar	0		26.9				
		0.4N	29.2					
Ar		0		29.6				
		0.4N	28.2					
	St1 St2	0		28.4		27.3		28.0
		0.4N	28.4		28.9		28.5	
St1 St2		0		27.9				
		0.4N	28.3					
		St+0.2N		25.9				
		St+0.6N	27.5					
		K_s		26.7				
		K_s 0.4N	27.7					
	Ad	0		28.2		27.3		28.3
Ad		0.4N	29.6					
		St+0.6N	28.6					
		K_s 0.4N	29.0					
			Noxious nitrogen: mg. per 100 g.					
	Ar	0		15.0				
		0.4N	15.0					
Ar		0		15.0				
		0.4N	15.0					
	St1 St2	0		15.0		15.0		15.0
		0.4N	15.0		15.0		15.0	
St1 St2		0		15.0				
		0.4N	15.0					
		St+0.2N		25.0				
		St+0.6N	15.0					
		K_s		25.0				
		K_s 0.4N	15.0					
	Ad	0		15.0		25.0		15.0
Ad		0.4N	15.0					
		St+0.6N	15.0					
		K_s 0.4N	25.0					

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