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Yields of the Field Experiments 1957

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57/R/BA/1 Three-course Rotation

Rothamsted Research

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57/Ba/1.1

THREE COURSE ROTATION EXPERIMENT

6th 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), 0.0093; barley, 0.0200; sugar beet, 0.0204.

Cultivations, etc.:

Potatoes.

Straw applied, all plots ploughed: Jan 23. Fertilizers applied: Apr 11. Potatoes machine planted: Apr 13. Earthed up: July 6. Sprayed with copper fungicide, 5 lb in 40 gallons per acre: July 31 and Aug 21. Sprayed with sulphuric acid, 15% BOV at 100 gallons per acre: Sept 19. Lifted: Oct 1. Variety: Majestic.

Barley.

Ground chalk applied at 20 cwt per acre: Oct 15, 1956. Straw applied, all plots ploughed: Jan 23, 1957. Fertilizers applied: Mar 16. Seed drilled at $2\frac{3}{4}$ bushels per acre: Mar 18. Sprayed with MCPA, 2 pints in 40 gallons per acre: May 29. Harvested: Aug 8. Variety: Plumage Archer.

Sugar beet.

Straw applied, all plots ploughed: Jan 23. Fertilizers applied: Apr 11. Seed drilled at 12 lb per acre: Apr 16. Sprayed with miscible DDT, 3 pints in 20 gallons per acre: May 29. Singled: June 24 - 28. Sprayed with methyl demeton, 12 oz in 80 gallons per acre: July 6. Lifted: Nov 2. Variety: Klein E.

Summary of Results

Potatoes

Treatments applied:	1950	1951	1953, 1955 and 1957 1957	0	Total tubers: tons per acre					K _s + 0.4N		
					0.4N	St + 0.2N	St + 0.6N	K _s	K			
			1952 1954 & 1956									
Ar	Ar	Ar	0 0.4N	8.99 8.65	8.80 9.56							
			0 0.4N	7.55 8.82	9.42 9.86							
St1 St2	St1 St2	St1 St2	0 0.4N	8.80 9.28	8.99 9.95	10.82 10.05	10.82 10.05	10.00 9.14	10.58 12.02			
St1 St2	St1 St2	St1 St2	0 0.4N	8.51 8.13	9.09 10.96							
			St+ 0.2N St+ 0.6N	9.42 9.62	11.11 10.87							
			K _s K _s + 0.4N 0	9.71 9.95	9.95 11.44							
Ad	Ad	Ad	0.4N St+ 0.6N K _s + 0.4N	8.70 10.34 7.69	10.15 10.63 8.46	10.67 11.20	10.67 11.20		9.76 10.72			

Potatoes

Treatments applied:	1950	1951	1953, 1955 and 1957	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
			1952 1954 & 1956	0	0.4N	0	0.4N	0	0.4N
		Ar	0	86.0	84.4	85.4	87.9		
	Ar		0	82.8	89.8	83.5	89.0		
	St1 St2		0	88.4	89.3	85.1	90.9	89.6	90.3
	St1 St2		0	85.0	82.0	87.2	91.0	89.5	77.3
			St+ 0.2N	84.4	90.1	89.3	85.5		
			St+ 0.6N	84.4	90.1	85.9	89.5		
			K _s	91.1	89.3	84.3	88.5	90.3	89.2
	Ad		0	88.5	87.0	81.0	93.3	81.0	93.3
			0.4N	88.5	87.0				
			St+ 0.6N	86.6	83.0				
			K _s + 0.4N	83.4	88.7				

Percentage Ware (1 1/2" riddle)

57/Ba/1.4

		Barley					
Treatments applied:	1953, 1955 and 1957	0	0.4N	St + 0.2N	St + 0.6N	K _s	K _s + 0.4N
1950	1951	1952 1954 & 1956					
Grain (at 85% dry matter): cwt per acre							
	Ar	0	31.2				
		0.4N	24.2				
Ar		0	31.1				
		0.4N	24.1				
	St1 St2	0	28.6		31.3		31.9
		0.4N	26.9	25.2		27.6	
St1 St2		0	30.7				
		0.4N	24.5				
		St+ 0.2N	29.6				
		St+ 0.6N	27.6				
		K	29.7				
		K _s + 0.4N	26.7				
	Ad	0	31.2		31.2		26.4
Ad		0.4N	24.6				
		St+ 0.6N	26.1				
		K _s + 0.4N	30.4				
Straw (at 85% dry matter): cwt per acre							
	Ar	0	22.1				
		0.4N	14.9				
Ar		0	20.5				
		0.4N	15.4				
	St1 St2	0	17.4		19.1		21.7
		0.4N	16.6	15.6		18.6	
St1 St2		0	19.3				
		0.4N	15.2				
		St+ 0.2N	18.1				
		St+ 0.6N	19.0				
		K	18.8				
		K _s + 0.4N	17.4				
	Ad	0	20.5		20.2		14.5
Ad		0.4N	15.5				
		St+ 0.6N	16.1				
		K _s + 0.4N	21.6				

Mean dry matter % as harvested Grain: 82.5
Straw: 82.8

57/Ba/1.5

		Sugar Beet					
Treatments applied:	1953, 1955 and 1957	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	8.39				
Ar		0	9.38				
		0.4N	8.40				
	St1 St2	0	10.67		10.48		10.94
		0.4N	9.65	9.74		8.64	
St1 St2		0	10.53				
		0.4N	9.33				
		St+ 0.2N	11.14				
		St+ 0.6N	7.66				
		K	9.23				
		K _s + 0.4N	8.43				
	Ad	0	10.69		11.17		10.57
Ad		0.4N	7.96				
		St+ 0.6N	9.76				
		K _s + 0.4N	8.74				
		Sugar Percentage					
	Ar	0	18.0				
		0.4N	18.9				
Ar		0	18.5				
		0.4N	18.3				
	St1 St2	0	18.9		18.2		18.4
		0.4N	18.8	18.4		18.4	
St1 St2		0	18.8				
		0.4N	19.0				
		St+ 0.2N	18.5				
		St+ 0.6N	18.3				
		K	18.6				
		K _s + 0.4N	18.6				
	Ad	0	18.5		18.2		18.7
Ad		0.4N	18.9				
		St+ 0.6N	18.8				
		K _s + 0.4N	18.7				

57/Ba/1.6

Treatment applied:	1953, 1955 and 1957		Sugar Beet				
	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	31.7				
Ar		0	34.7				
		0.4N	30.7				
	St1 St2	0	40.3	38.1		40.3	
		0.4N	36.2	35.8		31.8	
St1 St2		0	39.6				
		0.4N	35.4				
		St+ 0.2N	41.2				
		St+ 0.6N	28.0				
		K	34.4				
		K _s + 0.4N	31.4				
	Ad	0	39.5	40.6		39.6	
Ad		0.4N	30.0				
		St+ 0.6N	36.8				
		K _s + 0.4N	32.7				
			Tops: tons per acre				
	Ar	0	9.80				
		0.4N	6.21				
Ar		0	8.72				
		0.4N	7.06				
	St1 St2	0	9.46	10.86		10.14	
		0.4N	8.24	8.55		7.58	
St1 St2		0	9.05				
		0.4N	7.32				
		St+ 0.2N	11.02				
		St+ 0.6N	8.57				
		K	8.87				
		K _s + 0.4N	7.39				
	Ad	0	10.64	11.95		9.83	
Ad		0.4N	6.78				
		St+ 0.6N	8.39				
		K _s + 0.4N	7.71				

57/Ba/1.7

Treat- ments applied:	1953, 1955 and 1957		Sugar Beet				
			0	0.4N	St + 0.2N	St + 0.6N	K _s
1950	1951	1952 1954 & 1956	Plant number: thousands per acre				
	Ar	0		29.8			
		0.4N	29.4				
Ar		0		29.0			
		0.4N	30.5				
	St1 St2	0		29.5		30.6	30.2
		0.4N	28.5		29.3		30.5
St1 St2		0		27.9			
		0.4N	29.4				
		St+ 0.2N		29.2			
		St+ 0.6N	31.1				
		K		30.5			
		K _s + 0.4N	29.9				
	Ad	0		28.8		29.6	28.4
Ad		0.4N	30.8				
		St+ 0.6N	30.1				
		K _s + 0.4N	28.3				