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ROTHAMSTED  
RESEARCH

# Collection of Plans for the Highfield Ley-arable Experiment

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## Highfield Ley-arable 1949-59

### Rothamsted Research

Rothamsted Research (1949-1990) *Highfield Ley-arable 1949-59* ; Collection Of Plans For The Highfield Ley-Arable Experiment, pp 1 - 11

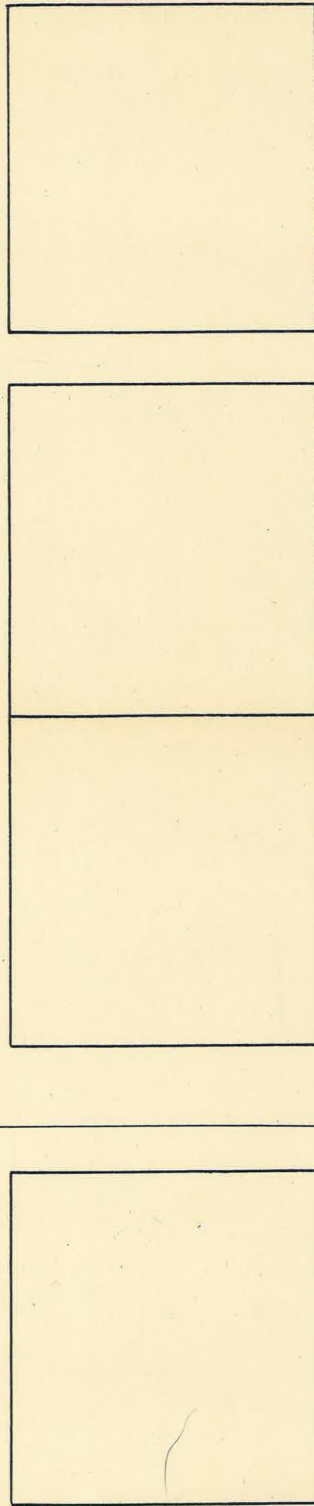


HIGHFIELD P  
LEY AND ARABLE ROTATIONS EXPERIMENT

1950 2nd year



Block 12



Block 12

Block 9

Block 10

Block 11

Block 12		Block 9		Block 10		Block 11		Present crop						
Lu1	Li	G	Ca1	H	R	W	W	W	W	Lu1	R	G	Li	Ca1
49	51	53	55	57	59	61	63	65	67	69	71	73	75	77
	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	1	2	1	2	1	2	1	2	1	2	1	2	1	2
50	52	54	56	58	60	62	64	66	68	70	72	74	76	78
	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	2	1	2	1	2	1	2	1	2	1	2	1	2	1

Block 5		Block 6		Block 7		Block 8		Relation			
(Lu)	(L)	(G)	(Cg)	(A)	(R)	(L)	(R)	(A)	(G)	(L)	(G)
L2	P	Cg2	R	G	Lu2	P	R	P	P	P	G
25	27	29	31	33	35	37	39	41	43	45	47
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
N	N	N	N	N	N	N	N	N	N	N	N
2	1	1	2	1	2	1	2	2	2	2	1
D	D	D	D	D	D	D	D	D	D	D	D

Block 1		Block 2		Block 3		Block 4		Relation			
(G)	(Lu)	(R)	(Cg)	(A)	(L)	(Lu)	(Lu)	(A)	(Cg)	(L)	(G)
G	P	R	P	P	P	P	P	P	P	P	G
1	3	5	7	9	11	13	15	17	19	21	23
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
N	N	N	N	N	N	N	N	N	N	N	N
2	2	1	1	2	2	1	2	2	2	2	1
D	D	D	D	D	D	D	D	D	D	D	D

Block 1		Block 2		Block 3		Block 4		Relation			
(G)	(Lu)	(R)	(Cg)	(A)	(L)	(Lu)	(Lu)	(A)	(Cg)	(L)	(G)
G	P	R	P	P	P	P	P	P	P	P	G
2	4	6	8	10	12	14	16	18	20	22	24
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
N	N	N	N	N	N	N	N	N	N	N	N
2	1	1	2	1	2	1	2	1	1	1	2
D	D	D	D	D	D	D	D	D	D	D	D

126  
165

# HIGHFIELD

## LEY AND ARABLE ROTATIONS EXPERIMENT

1951 3rd year

Code letter P

ICg	IG	H	IR	ILu	IL
133	135	137	139	141	143
a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n
1 2	1 1	1 1	1 1	1 2	1 1

IR	ICg	IL	H	IG	ILu	W	IG	W	IR	W
97	99	101	103	105	107	109	111	113	115	117
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
1 2	2 1	2 2	2 1	2 2	2 1	2 2	2 1	2 2	2 1	2 2

ICg	IG	IL	H	IG	ILu	W	IG	W	IR	W
134	136	138	140	142	144	146	148	150	152	154
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
1 2	2 2	2 1	2 2	2 1	2 2	2 1	2 2	2 1	2 2	2 1

(Cg)	(G)	(A)	(R)	(Lu)	(L)
121	122	123	124	125	126
a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n
2 1	1 2	2 2	2 1	2 2	2 1

(R)	(Cg)	(L)	(A)	(G)	(Lu)	(A)	(G)	(Lu)	(R)	(Cg)
98	100	102	104	106	108	110	112	114	116	118
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
2 1	1 1	1 2	1 1	1 2	1 1	1 2	1 1	1 2	1 1	1 2

(Lu)	(L)	(G)	(Cg)	(A)	(R)	(Lu)	(L)	(G)	(Cg)
99	101	103	105	107	109	111	113	115	117
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
2 1	1 2	2 1	1 2	2 1	1 2	2 1	1 2	2 1	1 2

(G)	(Lu)	(R)	(Cg)	(A)	(L)	(R)	(Cg)	(A)	(L)	(G)
127	128	129	130	131	132	133	134	135	136	137
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
2 1	2 1	2 2	2 1	2 2	2 1	2 2	2 1	2 2	2 1	2 2

(Lu)	(L)	(G)	(Cg)	(A)	(R)	(Lu)	(L)	(G)	(Cg)
104	106	108	110	112	114	116	118	120	122
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
2 1	1 1	1 2	1 1	1 2	1 1	1 2	1 1	1 2	1 1

(Lu)	(L)	(G)	(Cg)	(A)	(R)	(Lu)	(L)	(G)	(Cg)
105	107	109	111	113	115	117	119	121	123
a b	a b	a b	a b	a b	a b	a b	a b	a b	a b
n n	n n	n n	n n	n n	n n	n n	n n	n n	n n
2 1	1 2	2 1	1 2	2 1	1 2	2 1	1 2	2 1	1 2

nd on treatment crops  
 ND on test crops (W,PB)  
 (d) (D) residuals of 1950 dung treatments



LEY AND ARABLE ROTATIONS — HIGHFIELD — 1953 5th year

Block 12

134	136	138	140	142	144
3G	3G	3Lu	B	3G	B
135	137	139	141	143	
a	b	a	b	a	b
N		N		N	
134	136	138	140	142	144
a	b	a	b	a	b
N		N		N	

Block 9

3R	3Cg	3L	B	3R	B
97	99	101	103	105	107
a	b	a	b	a	b
N		N		N	
98	100	102	104	106	108
a	b	a	b	a	b
N		N		N	

Block 11

B	B	3R	B	B	B
121	123	125	127	129	131
a	b	a	b	a	b
N		N		N	
122	124	126	128	130	132
a	b	a	b	a	b
N		N		N	

Block 10

IG	IL	IR	H	ICg	ILU	W	IG	W	W
73	75	77	79	81	83	85	87	89	91
a	b	a	b	a	b	a	b	a	b
N		N		N		N		N	
74	76	78	80	82	84	86	88	90	92
a	b	a	b	a	b	a	b	a	b
N		N		N		N		N	

Block 7

P	P	P	2R	2G	P	2Lu	2R	P	2Cg	2L	2G
25	27	29	31	33	35	37	39	41	43	45	47
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	
26	28	30	32	34	36	38	40	42	44	46	48
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	

Block 6

2G	2Lu	2R	2Cg	P	2L	2R	P	P	P	2G	
1	3	5	7	9	11	13	15	17	19	21	23
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	
2	4	6	8	10	12	14	16	18	20	22	24
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	

Block 5

W	W	IG	W	W	IR	ICg	ILU	IL	H	IG	IR	71
49	51	53	55	57	59	61	63	65	67	69	71	
a	b	a	b	a	b	a	b	a	b	a	b	
N		N		N		N		N		N		
50	52	54	56	58	60	62	64	66	68	70	72	
a	b	a	b	a	b	a	b	a	b	a	b	
N		N		N		N		N		N		

Block 4

L	A	Cg	L	LU	LU	LU	LU	LU	LU	LU	LU
1	2	3	4	5	6	7	8	9	10	11	12
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	
13	14	15	16	17	18	19	20	21	22	23	24
a	b	a	b	a	b	a	b	a	b	a	b
N		N		N		N		N		N	

Area measured  
1/4 plot = 1/45 acre  
(approx.)

All crops (except Lucerne) have nitrogen at single and double rates.  
Cg = 2 cwt. N/c in spring, 2 cwt. N/c after each cut.  
N = rate of nitrogen  
L = 1 cwt. N/c in spring, 1 cwt. N/c later in season.  
Wheat (W) 4 cwt. N/c, Barley (B) 2.7 cwt. N/c.  
Hay (H) 4 cwt. N/c, Potatoes (P) 5 cwt. Sulphate of ammonia at 12 tons per acre to potato crops only.  
Dung at 12 tons per acre in previous 3 year crop sequence.  
High nitrogen given in previous 3 year crop sequence.  
Dung to previous potato crop.

6 Year cropping cycles:-  
Treatment crops  
Lu = 3 years Lucerne  
L = 3 years Grazed Ley  
Cg = 3 years Cut Grass  
A = Hay, Potatoes, Barley  
G = Permanent old grass, 2 years grazed, 3rd year hay.  
R = Reseeded Permanent Grass grazed, 3rd year hay.

Basal P.K. All rotations and permanent grass:- 13 c.p.a. Super. 4 c.p.a. Mur/potash spread over 6 years.  
Calcium carbonate applied once in 6 years before test crop barley.

Rothamsted LEY-ARABLE Rotations HIGHFIELD 6th year 1954



121	a b	N	N	N	N	N	132
		A	Cg	R	L	C	Lu

1st. Treatment

109	a b	N	N	N	N	N	120
		N	G	Lu	L	R	Cg

1st. Treatment

97	a b	x	x	x	x	x	108
		R	Cg	L	A	G	Lu

WHEAT

133	a b	x	N	N	N	N	144
		Cg	A	R	Lu	L	

WHEAT

85	a b	N	N	N	N	N	96
		N	D	A	G	L	Cg

POTATOES

73	a b	N	N	N	N	N	84
		G	L	R	A	Cg	Lu

2nd. Treatment

61	a b	N	N	N	N	N	72
		N	D	A	G	R	

2nd. Treatment

49	a b	N	N	N	N	N	60
		N	D	A	G	R	

POTATOES

Area manured  
1/4 plot - 1/4 acre  
Code letter P

37	a b	N	N	N	N	N	48
		N	D	A	Cg	L	C

3rd. Treatment

25	a b	N	N	N	N	N	36
		L	A	Cg	R	N	

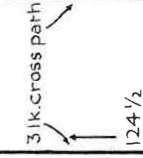
BARLEY

13	a b	N	N	N	N	N	24
		N	D	A	G	R	

BARLEY

1	a b	N	N	N	N	N	12
		G	Lu	R	Cg	A	L

3rd. Treatment



21 AUG 1953

Treatments overleaf

JUN 1955

SEVENTH YEAR 1955

LEY-ARABLE ROTATIONS

HIGHFIELD

133	ax:bx	135	G	136	N	137	ax:bx	139	R	140	N	141	ax:bx	142	ax:bx	143	ax:bx	144	ax:bx
PK:PK	D	PK:PK	Cg	PK	A	PK	PK	PK	A	PK	PK	PK	PK	PK	PK	PK	PK	PK	PK
ay:by	D	ay:by	Lu	ay:by	Lu	ay:by	ay:by	ay:by	Lu	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by
50%		50%		50%		50%		50%		50%		50%		50%		50%		50%	

121b	ax:bx	122	A	123b	N	124	Cg	125	N	126	R(11)	127	N	128	L	129	G	130	Lu	131b	Lu	132	Lu
N	N	N	A	N	N	N	Cg	N	N	N	R(11)	N	N	N	L	N	G	N	N	N	N	N	N
ay:by	ay:by	ay:by	Lu	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by
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107	ax:bx	108	Lu	109b	A	110	A	111	G	112	G	113b	Lu	114	Lu	115	R	116	Lu	117	R	118	R	119b	Cg
N	N	N	Lu	N	A	N	A	N	G	N	G	N	Lu	N	Lu	N	R	N	Lu	N	R	N	N	N	Cg
ay:by	ay:by	ay:by	Lu	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by
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97	R	98	N	99	Cg	100	Cg	101	ax:bx	102	ax:bx	103	ax:bx	104	ax:bx	105	G	106	G	107	Lu	108	Lu	109b	A
N	N	N	N	N	Cg	N	Cg	N	ax:bx	N	ax:bx	N	ax:bx	N	ax:bx	G	G	N	G	Lu	Lu	Lu	A	A	
ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	
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49b	ax:bx	50	Lu	51b	N	52	L	53	N	54	G	55b	N	56	Cg	57b	N	58	A	59	R	60	R	61b	N	62	Cg	63b	N	64	Lu	65	Lu	66	L	67b	N	68	A	69	Ch	70	Ch	71	Rh	72	Rh
N	N	N	Lu	N	N	N	L	N	N	G	N	N	N	N	Cg	N	N	A	N	R	N	R	N	N	N	N	N	Cg	N	Lu	N	Lu	N	L	N	A	N	Ch	N	Ch	N	Rh	N	Rh			
ay:by	ay:by	ay:by	Lu	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by			
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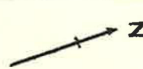
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N	N	N	L	N	N	N	A	N	N	N	Cg	CK4	CK4	CK4	R	G	G	G	G	N	N	Lu	N	N	N	Lu	N	R	N	R	N	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
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73	N	74	Ch	75	N	76	L	77	N	78	Rh	79	N	80	A	81b	N	82	Cg	83b	N	84	Lu	85b	N	86	Lu	87	Lu	88	R	89b	N	90	A	91	Cg	92	L	93b	N	94	L	95b	N		
N	Ch	N	L	N	N	N	L	N	N	Rh	N	N	N	A	N	N	N	Cg	N	N	N	Lu	N	N	N	Lu	N	Lu	R	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
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49b	ax:bx	50	Lu	51b	N	52	L	53	N	54	G	55b	N	56	Cg	57b	N	58	A	59	R	60	R	61b	N	62	Cg	63b	N	64	Lu	65	Lu	66	L	67b	N	68	A	69	Ch	70	Ch	71	Rh	72	Rh
N	N	N	Lu	N	N	N	L	N	N	G	N	N	N	N	Cg	N	N	A	N	R	N	R	N	N	N	N	N	Cg	N	Lu	N	Lu	N	L	N	N	A	N	Ch	N	Ch	N	Rh	N	Rh		
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1	G	2	N	3	N	4	Lu	5	N	6	R	7	N	8	Cg	9	A	10	A	11b	N	12	L	13	N	14	R	15	N	16	L	17b	N	18	Cg	19b	N	20	A	21b	N	22	Lu	23	G		
N	N	N	Lu	N	N	N	R	N	N	N	R	N	N	N	Cg	N	N	A	N	N	N	L	N	N	N	R	N	N	L	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
ay:by	ay:by	ay:by	Lu	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by	ay:by		
50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%		50%	

Code Letter P

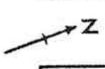




OATS  
DAYS

1956

3 HIGHFIELD 4 XLEY-ARABLE/ROTATIONS



133b	135	137b	139	141b	143b	105	107b	109b	111	113b	115	117	119b	121b	123b	125	127	129	131b
Cg	G	A	R	Lu	L	N	N	N	N	G	Lu	R	Cg	A	Cg	R	L	G	Lu
134	136	138	140	142	144	106	108	110	112	114	116	118	120	122	124	126	128	130	132
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

49b	51	53	55b	57b	59	61b	63b	65b	67b	69	71	73	75b	77	79b	81b	83b	85b	87	89b	91	93	95b
Lu	L	Gh	Cg	H	Rh	Cg	Lu	L	A	G	R	G	L	R	A	Cg	Lu	Lu	Lu	Rh	H	L	Cg
50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

3	5	7	9	11	13	15	17b	19b	21b	23	25	27b	29b	31	33	35b	37	39	41	43	45	47	
Lu	R	Cg	A	L	R	L	L	N	N	C	N	N	N	N	C	Lu	Lu	R	R	A	Cg	L	C
4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

measurements to Potatoes only  
123  
61ks  
58 1/2  
61ks  
58 1/2

Code Letter  
**P**

POTATOES

2nd. TREATMENT

2nd. TREATMENT

POTATOES

POTATOES





