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ROTHAMSTED  
RESEARCH

# Collection of Plans for the Fosters Ley-arable Experiment

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## Fosters Ley-arable 1949-59

### Rothamsted Research

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

# FOSTERS FIELD

LEY AND ARABLE ROTATIONS Experiment

1949 1st Preliminary year

Present crop	W	W	W	R	W	Cg1	R	H	LI	Lul
	1	3	5	7	9	11	13	15	17	19
	a	b	a	b	a	b	a	b	a	b
	N	N	N	N	N	N	N	N	N	N
	1	2	1	2	1	1	1	2	2	2
	-----									
	2	4	6	8	10	12	14	16	18	20
	a	b	a	b	a	b	a	b	a	b
	N	N	N	N	N	N	N	N	N	N
	2	1	2	1	2	2	2	1	1	1

Relation (L) (A) (Lu) (R) (Cg) (R) (A) (L) (Lu)

Plot code letter	W	W	W	R	W	Cg1	Lul	R	H	
	21	23	25	27	29	31	35	37	39	
	a	b	a	b	a	b	a	b	a	
	N	N	N	N	N	N	N	N	N	
	1	2	1	2	2	2	1	1	1	
	-----									
	22	24	26	28	30	32	34	36	38	
	a	b	a	b	a	b	a	b	a	
	N	N	N	N	N	N	N	N	N	
	1	2	1	2	1	1	2	2	2	

Relation (Lu) (Cg) (A) (L) (R) (Cg) (Lu) (L) (R) (A)

Test crop { W Wheat  
H Seeds hay  
Lul 1 cut then followed  
Cg1 1st year lucerne  
LI 1st year cut grass  
R 1st year grazed ley  
Permanet 3rd yr 2 cuts  
R Reseeded grass } grazed with sheep

Rotation	Treatment crops	Test crop
(A)	Hay, Potatoes, Barley	Wheat, Potatoes, Barley
(Lu)	1st yr, 2nd yr, 3rd yr lucerne	
(Cg)	1st yr, 2nd yr, 3rd yr cut grass	
(L)	1st yr, 2nd yr, 3rd yr grazed ley	

1/4 plot = 0.02205 acre

For harvested areas see Field notebooks  
17 rows by 7mch spacing by 124.5 links  
82-17 feet

Symbol	Crop	cwt. N per acre as nitrochalk N1	cwt. N per acre as nitrochalk N2	Basal dressing per acre
W	Wheat	0.3	0.6	0.2 cwt. P <sub>2</sub> O <sub>5</sub> combine drilled with seed
H	Seeds hay	0.3	0.6	0.15 cwt. P <sub>2</sub> O <sub>5</sub> , 0.15 cwt. K <sub>2</sub> O
Cg1	1st year cut grass	0.15 (i)	0.3	0.6 cwt. P <sub>2</sub> O <sub>5</sub> , 0.6 cwt. K <sub>2</sub> O
LI	1st year grazed ley	0.075 (ii)	0.15	0.6 cwt. P <sub>2</sub> O <sub>5</sub> , 0.6 cwt. K <sub>2</sub> O
R	Reseeded grass	0.075 (ii)	0.15	0.3 cwt. P <sub>2</sub> O <sub>5</sub> , 0.3 cwt. K <sub>2</sub> O
Lul	1st year lucerne	-	-	0.6 cwt. P <sub>2</sub> O <sub>5</sub> , 0.6 cwt. K <sub>2</sub> O

The basal dressing is applied as a granulated compound containing 13% P<sub>2</sub>O<sub>5</sub> and 13% K<sub>2</sub>O.

- (i) 1st dressing of N1 and N2 in spring. Repeated dressings of N1 and N2 at the same rates. After 1st, 2nd and 3rd cut.
- (ii) 1st dressing of N1 and N2 in spring. A second dressing of N1 and N2 later in summer at the same rates.







# FOSTERS LEY AND ARABLE ROTATIONS EXPERIMENT

1951 3rd year



Code letter M

111	113	115	117	119	Present crop
a b	a b	a b	a b	a b	
N N	N N	N N	N N	N N	
2 1	1 1	N 1	1 2 2 1	1	

112	114	116	118	120	Rotation
a b	a b	a b	a b	a b	
N N	N N	N N	N N	N N	
1 2 2 2	2 2	2	1 2 2 1	1	

111	113	115	117	119	Rotation
(L) (Lu) (R) (A) (Cg)	(L) (Lu) (R) (A) (Cg)	(L) (Lu) (R) (A) (Cg)	(L) (Lu) (R) (A) (Cg)	(L) (Lu) (R) (A) (Cg)	

91	93	95	97	99	101	103	105	107	109	Rotation
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 2 2 1	1 2 2 2	2 2	2 2	1	2	N 2	N 2	N 2	N 2	

92	94	96	98	100	102	104	106	108	110	Rotation
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	
1 1 2 1 2 1	1 1	2	1	2	1	1 2 2 1	1 2 2 1	1	1	

91	93	95	97	99	101	103	105	107	109	Rotation
(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	(Cg) (Lu) (L) (A) (R) (L) (A) (Cg) (Lu) (R)	

51	53	55	57	59	Rotation
(Lu) (R) (L) (Cg) (A)	(Lu) (R) (L) (Cg) (A)	(Lu) (R) (L) (Cg) (A)	(Lu) (R) (L) (Cg) (A)	(Lu) (R) (L) (Cg) (A)	

1	3	5	7	9	11	13	15	17	19	Rotation
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	
1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1 2 1 2 1	

2	4	6	8	10	12	14	16	18	20	Rotation
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 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	2 1 1 2 1 2 1 2 1 2 1	

n,d on treatment crops  
 N,D on test crops (W,R,B)  
 (d)(D) residuals of 1950 dung treatments

*grazed this yr*

*12.5m x 17.5m*

16 MAR 1951



# FOSTERS LEY AND ARABLE ROTATIONS EXPERIMENT

5 FEB 1952

1952 4th year

code letter M.

111	113	115	117	119
a, b	a, b	a, b	a, b	a, b
N	D	N	N	N
D	D	N	D	D

112	114	116	118	120
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

101	103	105	107	109
N	N	N	N	N
D	D	N	N	N
D	D	N	D	D

91	93	95	97	99
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	D	D	N

92	94	96	98	100
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	D	D	N

51	53	55	57	59
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	D	D	N

52	54	56	58	60
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	D	D	N

81	83	85	87	89
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

71	73	75	77	79
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

61	63	65	67	69
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

62	64	66	68	70
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

21	23	25	27	29
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

22	24	26	28	30
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

31	33	35	37	39
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

41	43	45	47	49
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

42	44	46	48	50
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

51	53	55	57	59
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

61	63	65	67	69
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

71	73	75	77	79
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

81	83	85	87	89
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

91	93	95	97	99
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

101	103	105	107	109
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

111	113	115	117	119
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

121	123	125	127	129
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

131	133	135	137	139
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

141	143	145	147	149
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

151	153	155	157	159
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

161	163	165	167	169
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

171	173	175	177	179
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

181	183	185	187	189
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

191	193	195	197	199
a, b	a, b	a, b	a, b	a, b
N	N	N	N	N
D	D	N	D	D

AREA MANURED  
1/4 plot - 1/45 acre (approx)

**6 Year Cropping Cycles:-**  
 Treatment crops  
 Lu = 3 years Lucerne  
 L = 3 years Grazed Ley  
 Cg = 3 years Cut Grass  
 A = Hay, Potatoes, Barley  
 R = Reseeded Permanent Grass 2 years grazed  
 3rd year Hay.

**Test crops**  
 Wheat, Potatoes, Barley  
 Grass 2 years grazed

All crops (except Lucerne) have nitrogen at single (no symbol) or at double (N) rates  
 N = 2 cwt N/c in spring, 2 cwt N/c after each cut.  
 Cg = 1 cwt N/c in 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  
 D = Dung at 12 tons per acre to potato crops only  
 n = N given in previous 3 year crop sequence  
 d = D to previous potato crop

**Basal P.K.** All rotations and permanent grass :- 13 cwt/a superphosphate . 4 cwt/a muriate of potash spread over 6 years (Equivalent Calcium carbonate applied once in 6 years before test crop barley.  
 to 2.4 cwt P<sub>2</sub>O<sub>5</sub> & 2.4 cwt K<sub>2</sub>O)



LEY AND ARABLE ROTATIONS EXPERIMENT — FOSTERS — 1953 5th year

Code letter M.

91 a N	93 a D	95 a D	97 a D	99	101 N	103 a D	105 a N	107 a b	109 N
92 a D	94 a D	96 a D	98 a D	100 N	102 N	104 a D	106 a N	108 a b	110 N

Rotation  
Cg Lu L A

51	53	55	57	59
52	54	56	58	60

Present crop

Area manured  
1/4 plot - 1/45 acre  
(approx.)



111 a N	113 a D	115 a D	117 a D	119 a b
112 a D	114 a D	116 a D	118 a D	120 a D

Rotation  
L Lu BLOCK 12

61 a N	63 a N	65 a N	67 a N	69 a N	71 a D	73 a D	75 a N	77 a D	79 a D	81 N	83 a D	85 a D	87 a D	89 a D
62 a N	64 a N	66 a N	68 a N	70 a N	72 a D	74 a D	76 a D	78 a D	80 a D	82 a D	84 a D	86 a D	88 a D	90 a D

Rotation  
L Cg Lu BLOCK 7

21 a D	23 a D	25 a D	27 a N	29 a N	31 a D	33 a D	35 a D	37 a D	39 a D	41 a D	43 a D	45 a D	47 a D	49 a D
22 a D	24 a D	26 a D	28 a D	30 a D	32 a D	34 a D	36 a D	38 a D	40 a D	42 a D	44 a D	46 a D	48 a D	50 a D

Rotation  
Cg Lu L BLOCK 3

1 a N	3 a D	5 a D	7 a N	9 a N	11 a D	13 a D	15 a D	17 a D	19 a D
2 a N	4 a D	6 a D	8 a D	10 a D	12 a D	14 a D	16 a D	18 a D	20 a D

Rotation  
Cg Lu L BLOCK 2

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

Test crops  
Wheat, Potatoes, Barley

31 a D	33 a D	35 a D	37 a D	39 a D	41 a D	43 a D	45 a D	47 a D	49 a D
32 a D	34 a D	36 a D	38 a D	40 a D	42 a D	44 a D	46 a D	48 a D	50 a D

Rotation  
Cg Lu L BLOCK 4

All crops (except Lucerne) have nitrogen at Single (no symbol) & at double (N) rates  
Cg :- 2 cwt. N/c in spring, 2 cwt. N/c after each cut.  
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.

D = Dung at 12 tons per acre to potato crops only.  
U = High nitrogen given in previous 3 year crop sequence.  
D = Dung to previous potato crop.

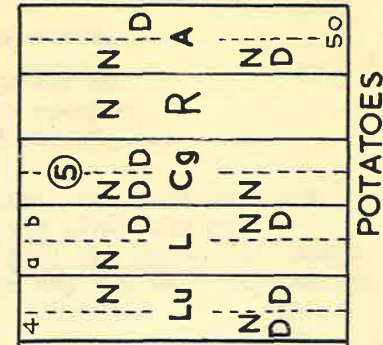
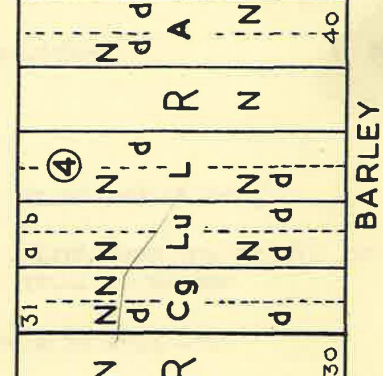
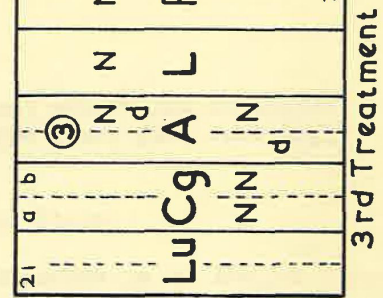
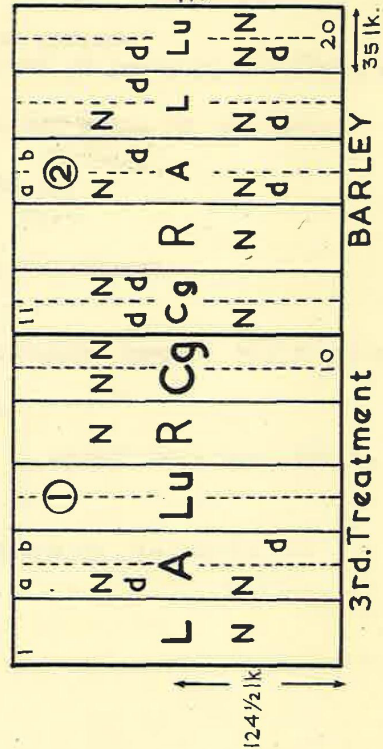
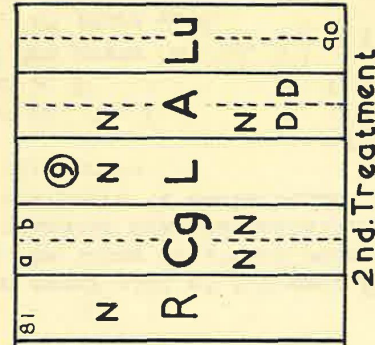
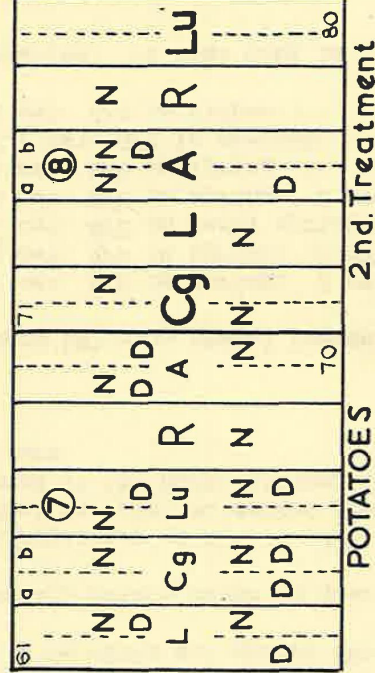
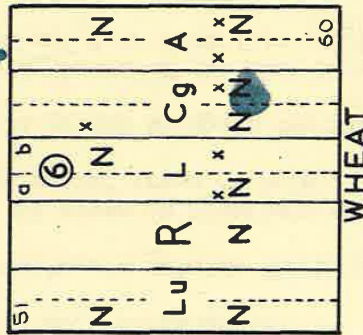
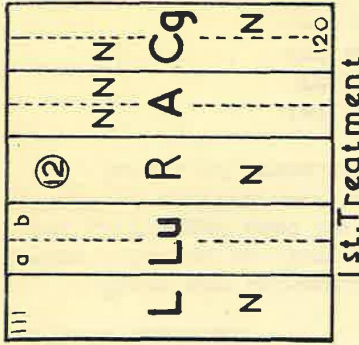
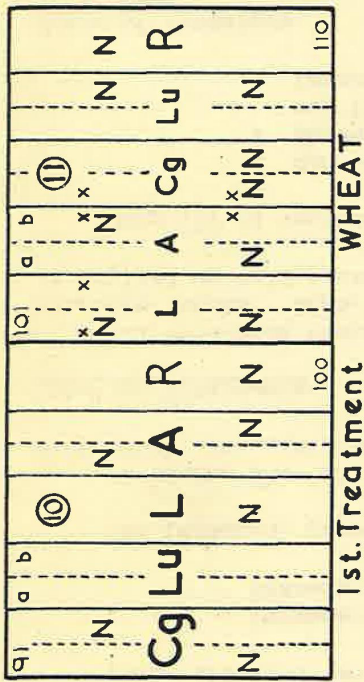
Basal P.K. All rotations and permanent grass :- 13 c.p.a. Super. 4 c.p.a. Mur/potash spread over 6 years.



Rothamsted LEY-ARABLE Rotations FOSTERS 6th. year 1954



Code letter M



Area manured  
1/4 plot - 1/45 acre  
(approx.)

3 1/2 k. cross path

12 1/2 k

21 July 1954

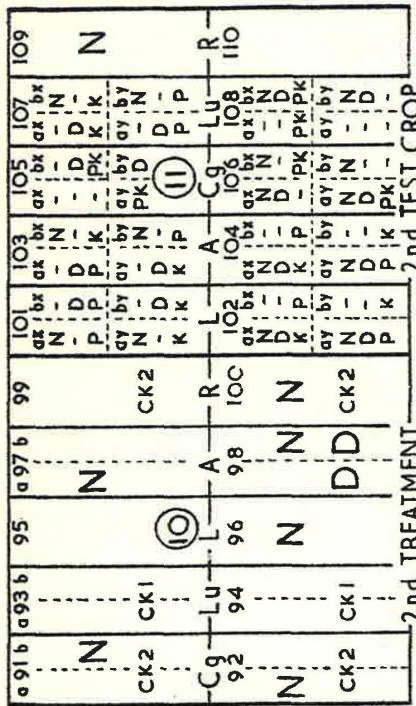
Treatments overlaid



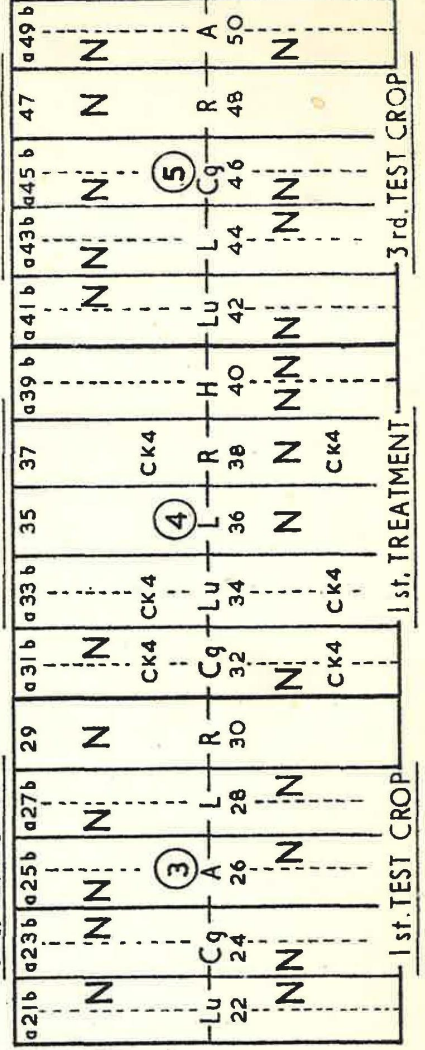
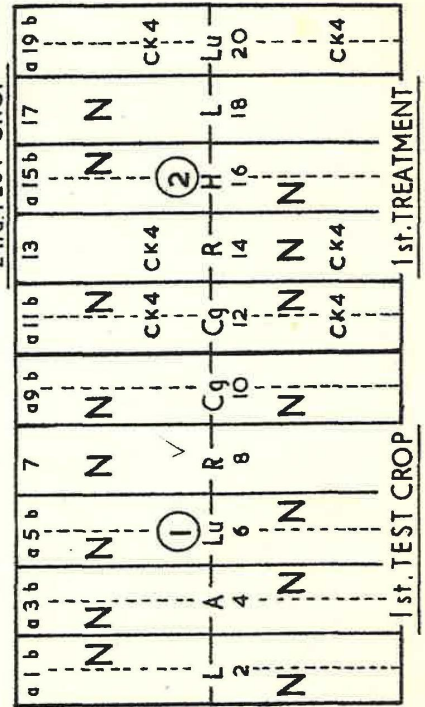
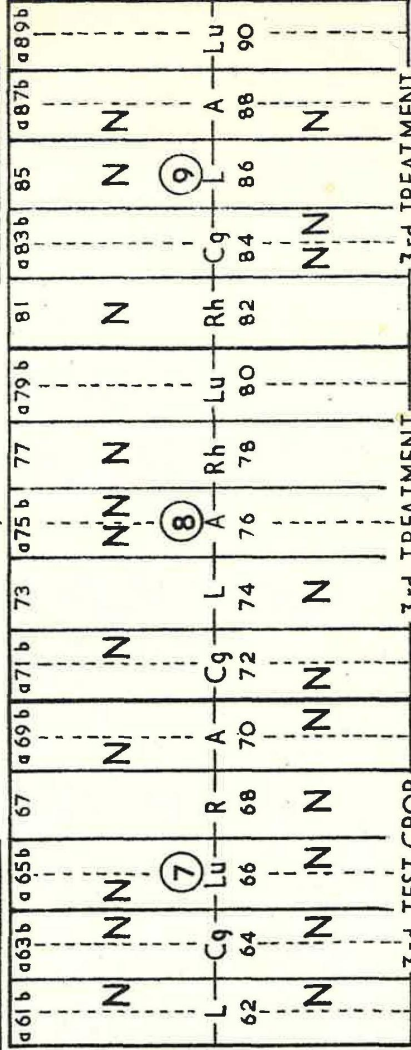
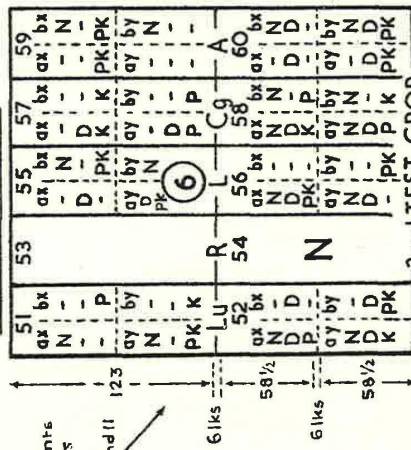
JUN 1955

# LEY-ARABLE ROTATIONS FOSTERS

Code Letter M  
SEVENTH YEAR  
1955



TEST CROPS  
1st: Wheat  
2nd: Potatoes  
3rd: Barley





LEY-ARABLE  
ROTATIONS  
FOSTERS  
Code Letter M  
EIGHTH YEAR  
1956

18 OCT 1955

a91b	a93b	95	a97b	99	a101b	a103b	a105b	a107b	109
N	N	(10)	N	N	N	N	(11)	N	N
Cg	Lu	L	A	R	L	A	Cg	Lu	R
92	94	96	98	100	102	104	106	108	110
N	N	N	N	N	N	N	N	N	N

3rd. Treatment Barley

a51b	53	a55b	a57b	a59b
N	N	(6)	N	N
Lu	R	L	Cg	A
52	54	56	58	60
N	N	N	NN	N

35 lks Barley

a61b	a63b	a65b	67	a69b	a71b	a73b	a75b	77	a79b	81	a83b	a85b	a87b	a89b
N	N	(7)	N	N	N	N	(8)	N	N	N	N	(9)	N	N
L	Cg	Lu	Rh	H	Cg	L	A	R	Lu	R	Cg	L	A	Lu
62	64	66	68	70	72	74	76	78	80	82	84	86	88	90
N	N	N	N	N	N	N	NN	NN	NN	NN	N	N	N	N

1st. Treatment Wheat

a11b	13	a15b	17	a19b
N	N	D	(2)	N
Cg	R	A	L	Lu
12	14	16	18	20
N	N	N	N	N

2nd. Treatment Potatoes

a21b	a23b	a25b	a27b	a29b	a31b	a33b	35	37	a39b	a41b	a43b	a45b	a47b	a49b
ax	bx	ax	bx	N	N	(3)	(4)	N	D	N	N	(5)	N	N
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PK	-	K	L	-	-	-	-	-	-	-	-	-	-	-
ay	by	ay	by	ay	by	ay	by	ay	by	ay	by	ay	by	ay
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lu	Cg	A	L	R	Cg	Lu	L	R	A	Lu	L	Cg	Rh	H
22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
D	P	-	-	-	-	-	-	-	-	-	-	-	-	-
ay	by	ay	by	ay	by	ay	by	ay	by	ay	by	ay	by	ay
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P	K	PK	L	P	PK	L	P	PK	L	P	PK	L	P	PK

1st. Treatment Potatoes

a113b	a115b	a117b	a119b
N	(12)	N	N
L	R	A	Cg
112	116	118	120
N	N	N	N

3rd. Treatment

W heat - 1/2 of row per  
quarter plot sampled

3 lks  
Cross path  
124 1/2

123  
6 lks  
58 1/2  
6 lks  
58 1/2



Wheat 8' of row per plot sampled.

# LEY-ARABLE ROTATIONS FOSTERS Code Letter M NINTH YEAR 1957

a91b 3 N	a93b 1 N	a95b 2 N	a97b 4 N	99 - N	101 - N	a103b 1 N	a105b 1 N	107b - N	109 - N
Cg	Lu	L	A	R	L	H	Cg	Lu	Rh
92 3 3	94 1 1	96 2 2	98 4 4	100 - N	102 - -	104 - N	106 - N	108 110 - -	-

a111b 3 N	a113b 1 N	115 - N	117b 4 N	a119b 3 N
L	Lu	R	A	Cg
112 2 2	114 1 1	116 2 2	118 4 4	120 3 3

a51b - N	53 - N	a55b - N	a57b - N	a59b - N
Lu	Rh	L	Cg	H
52 - N	54 - N	56 - N	58 - N	60 - N

61 - N	a63b - N	a65b - N	67 - N	a69b - N
L	Cg	Lu	R	P
62 - -	64 - N	66 - N	68 - N	70 - D

71 - N	73 - N	75 - N	77 - N	79 - N	81 - N	83 - N	85 - N	87 - N	89 - N
Cg	L	R	A	P	Lu	Cg	L	A	Lu
72 - D	74 - D	76 - D	78 - -	80 - N	82 - -	84 - D	86 - D	88 - D	90 - D

a11b - N	a13b - N	a15b - N	a17b - N	a19b - N
Lu	Cg	R	O	Lu
12 - N	14 - N	16 - N	18 - -	20 - -

a21b - N	a23b - N	a25b - N	a27b - N	a29b - N	a31b - N	a33b - N	a35b - N	a37b - N	a39b - N	a41b - N	a43b - N	a45b - N	a47b - N	a49b - N
Lu	Cg	A	L	R	Cg	Lu	L	R	O	Lu	L	Cg	R	P
22 - N	24 - N	26 - N	28 - N	30 - -	32 - -	34 - N	36 - N	38 - N	40 - N	42 - N	44 - -	46 - N	48 - -	50 - D

7 - N	a55 - N	a57 - N	a59 - N	a61 - N	a63 - N	a65 - N	a67 - N	a69 - N	a71 - N	a73 - N	a75 - N	a77 - N	a79 - N	a81 - N	a83 - N	a85 - N	a87 - N	a89 - N				
Lu	Lu	R	Cg	R	L	R	A	P	Lu	Cg	L	R	A	P	Lu	Cg	L	A	Lu			
6 - N	8 - -	10 - N	12 - N	14 - N	16 - N	18 - -	20 - -	22 - N	24 - N	26 - N	28 - N	30 - -	32 - -	34 - N	36 - N	38 - N	40 - N	42 - N	44 - -	46 - N	48 - -	50 - D



23'0" 2'0" Cross path 82'0" 81'0" 4'0" 38'6" 4'0" 38'6"



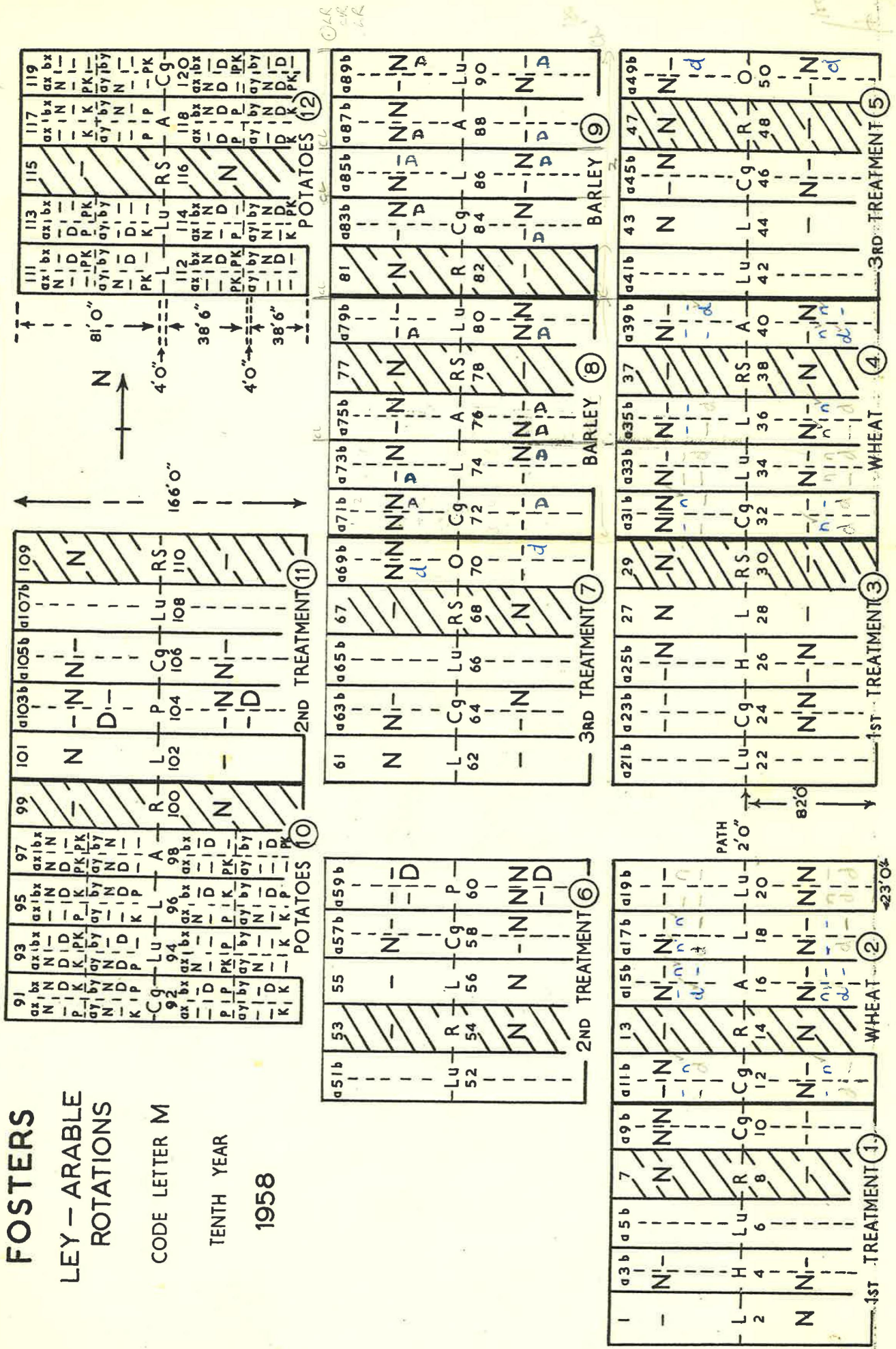
# FOSTERS

LEY - ARABLE  
ROTATIONS

CODE LETTER M

TENTH YEAR

1958





FOSTERS  
 LEY - ARABLE  
 ROTATIONS  
 CODE LETTER M  
 ELEVENTH YEAR

1959

