

UNIVERSITY OF CAMBRIDGE.



SCHOOL OF AGRICULTURE,
CAMBRIDGE.

16 Oct., 1931

TELEPHONE 1885—2 LINES.

Dr. R.A.Fisher, F.R.S.,
Rothamsted Experimental Station.

Dear Fisher,

A mathematical professor in Tasmania has recommended the local agronomists to adopt a form of lay-out which he calls the semi-Latin square. It is applied to pq treatments in q -fold replication, and as you will see from the enclosed plan of one of their experiments, the arrangement is random blocks subject to the restriction that each of the strips contains one each of the treatments to be tested. The method seems to me to give a valid estimate of error, and has been very successful in their case in taking out a large part of the soil variation across the blocks, as well as between blocks. There may be a little difficulty in randomising, although this can possibly be got over, but there seems plenty of scope for chance to play its part, even with the restrictions imposed. The value of the lay-out might prove to be in comparing two or more interacting fertilisers in all combinations, and where only a limited degree of replication is practicable. The method is flexible enough to allow for most ordinary combinations of treatments with from four to six-fold

Strip 1 Strip 2 Strip 3 Strip 4 Strip 5

I	A	O	V	T
W	Z	P	C	K
J	N	Y	X	B
D	M	L	H	U

Block A

U	L	Z	J	I
K	T	W	B	X
M	D	V	N	A
Y	O	C	P	H

Block B

L	K	A	M	W
T	P	H	O	Z
X	C	B	D	Y
V	J	J	I	N

Block C

Z	V	X	Y	M
N	I	U	T	O
B	H	K	W	L
P	J	D	A	C

Block D

C	W	N	L	D
O	X	T	U	V
H	B	I	Z	J
A	Y	M	K	P

Block E

Key to Treatments
S/Harm

	0	1	2	3
0	I	J	K	D
4	L	M	N	H
6	A	B	C	O
8	P	Y	T	U
10	V	W	X	Z

Super

Diagram roughly in
scale with field
arrangement.

Analysis of Variance

Due to	D.F.	Sum of Squares	Mean Square
Treatments	19	291,888	15,362.5
Blocks	4	88,930	22,232.5
Strips	4	75,330	18,832.5
Residuals	72	190,628	2,647.6
	<hr/> 99	<hr/> 646,776	