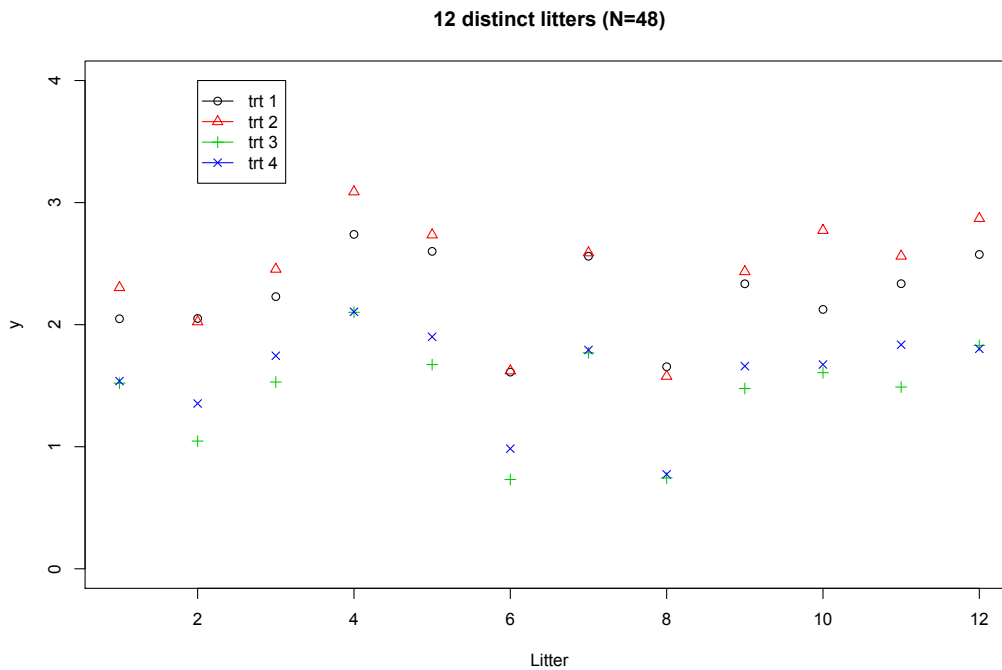


STAT:5201 Applied Statistic II

Diagram: *i*) LITTER(12) × trt(4)

Four observations from each litter, N=48.

Restricted randomization done within each block (litter).



SAS Output 12 distinct litters:

Class Level Information

Class	Levels	Values
Grouping	12	1 2 3 4 5 6 7 8 9 10 11 12
DayLength	2	long short
Climate	2	cold warm

Number of Observations Read	48
Number of Observations Used	48

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Grouping	11	9.06396512	0.82399683	96.77	<.0001
DayLength	1	8.27435377	8.27435377	971.73	<.0001
Climate	1	0.46745416	0.46745416	54.90	<.0001
DayLength*Climate	1	0.01488276	0.01488276	1.75	0.1952

Diagram: *ii*) FAMILY(6) × trt(4)



Four observations from each rep inside a family, N=48.

Randomization done within each block (i.e. rep inside family).

SAS Output 6 distinct families 2 reps from each:

Class Level Information

Class	Levels	Values
Litter	6	1 2 3 4 5 6
Rep	2	1 2
DayLength	2	long short
Climate	2	cold warm

Number of Observations Read	48
Number of Observations Used	48

Source	DF	Type III SS	Mean Square	F Value	Pr > F
Litter	5	8.91754806	1.78350961	209.45	<.0001
Rep(Litter)	6	0.14641706	0.02440284	2.87	0.0233
DayLength	1	8.27435377	8.27435377	971.73	<.0001
Climate	1	0.46745416	0.46745416	54.90	<.0001
DayLength*Climate	1	0.01488276	0.01488276	1.75	0.1952

Diagram: *i*) LITTER(12) × trt(4)

The Mixed Procedure

Covariance Parameter
Estimates

Cov Parm	Estimate
Grouping	0.2039
Residual	0.008515

Diagram: *ii*) FAMILY(6) × trt(4)

|
REP(2)

The Mixed Procedure

Covariance Parameter
Estimates

Cov Parm	Estimate
Litter	0.2199
Rep(Litter)	0.003972
Residual	0.008515