

```
data <- read.csv("data.csv")
data$fertilizer <- as.factor(data$fertilizer)

model_anova <- aov(y ~ fertilizer, data=data)
summary(model_anova)

model_ancova <- aov(y ~ fertilizer + x, data=data)
summary(model_ancova)

model_slopes <- aov(y ~ fertilizer * x, data=data)
summary(model_slopes)

anova(model_anova, model_ancova)
```

iii) Test Procedure

To check whether the four nitrogen levels work similarly:

Null hypothesis (H_0): All fertilizer levels have the same mean yield (after adjusting for plant number).

Alternative hypothesis (H_1): At least one fertilizer level differs.

Test statistic: The F-test from the ANOVA/ANCOVA table.

Decision rule:

If
 p
<
0.05
, reject $H_0 \rightarrow$ fertilizer levels differ significantly.

If
 p
 $\geq$
0.05
, fail to reject $H_0 \rightarrow$ fertilizer levels work similarly.