

Sample Size (Power)

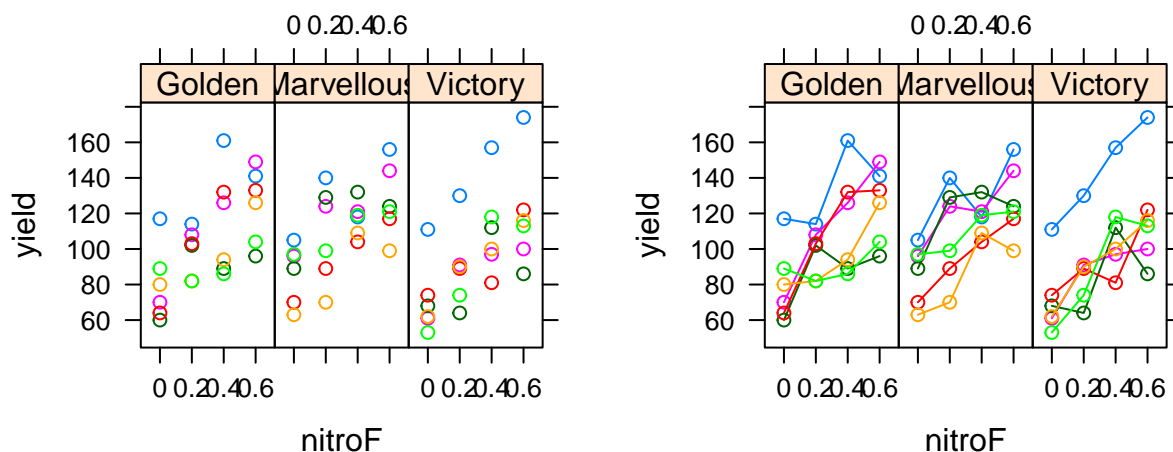
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Split Plot ANOVA

A split plot design is a mixed design in which there are some repeated measures factor(s) and some between-subjects factor(s).

```
## Observations: 72
## Variables: 6
## $ replicate <fct> I, I, I, I, I, I, I, I, I, I, I, I, II, II, II, II,...
## $ variety <fct> Victory, Victory, Victory, Victory, Golden, Golden,...
## $ nitro <dbl> 0.0, 0.2, 0.4, 0.6, 0.0, 0.2, 0.4, 0.6, 0.0, 0.2, 0...
## $ yield <int> 111, 130, 157, 174, 117, 114, 161, 141, 105, 140, 1...
## $ whole.plot <fct> I:Victory, I:Victory, I:Victory, I:Victory, I:Golde...
## $ nitroF <fct> 0, 0.2, 0.4, 0.6, 0, 0.2, 0.4, 0.6, 0, 0.2, 0.4, 0....
```



We have three levels of a repeated measures factor (Victory, Golden, Marvellous) and four levels of a between-subjects factor, treatment (control, kill, removal + mulch, mulch), and 6 plots.

We also need to specify the error term for variety correctly.

```
#n_control <- length(unique(data$plot))
#n_subplots <- length(unique(data$variety))
#n_total <- n_control * n_subplots

#control_biomass_mean <-
total_biomass <- total_invasive_volume_cu_yd

#effect_size <- (total_biomass - control_biomass_mean)/control_biomass_mean

# r <- 24
# n <- 8
# alpha <- 0.05
# beta <- 0.8

#sample_size <- ((r-n)/n)*((sigma_sq*alpha*beta)/effect_size)
```