Lab questions

Problem 1

Standard deviations? Error

Se or ci: used for group difference comparison

Problem 2

Interaction term: not parallel / no good results for H

Do not consider the interaction is because in this case we do not care about the blocks. Our interested factor is the salt only. The blocks are just a part of the experiment design and should not consider to be interacted with the treatments.

The block effects can be treated as random effect, but the subjects are less than 6

How to adjust the labels of HSD test for better illustration? (cex.axis=0.5, las = 1)

How to evaluate the degree of coincidence of the model assumption??

* The diagnosis plot is vague
* Whether log-transform or not? How to tell which is better
  + Both tried, the log-transformed ones are not much better. So, I just keep the original model setting
* Any indicators of normality (shapiro.test) and equal variance (var.test) for factorial design?
  + Multilevel comparison: bartlett.test(biomass~factor(salt), data = salt)
  + It can only tell the overall difference. No exact differences among each group

Why place testing the assumption fitness at the end of the analysis? If the assumptions are not hold, all the previous work will be wasted?

* Because the residuals after the model fitting are rather important
* We can check the dependent variables before the model, but that is not as important as the residuals.
* Thus, we need to check the residuals via diagnosis plots to make evaluations

Problem 3

Effect of diet?

* with identical diets, but different doses (0.5, 1, 2 milligrams) of supplements
* factorial design of two supplements (equal position)

Why the coefficient of interaction term is negative?

It reflects that one unit change in dose 2 (from level 1 to level 2) will cause the impact of changing supplement VitB to ZinC on the mean thickness to decrease by 5.33, and vice versa. It actually reports how change in one variable impacts the interacted variable’s effect on the dependent variable.

How to only keep the graph outputs in text rather than the reports

{r, results = F}

Lab 7 pdf

difference between factor() and as.factor()?

Interaction plots: why are they continuous among groups

Quiz questions

Some of them not mentioned in the recording?

Slides question

Centering makes the regression results more significant?