

1.3: Chapter 1 Summary

The emphasis of this lesson was to reinforce the basics of ANOVA, which perhaps you may have seen in other courses. Using the greenhouse example, the seven important steps of hypothesis testing in a single factor ANOVA setting were explored. Step 2 highlighted the correct way to state and also interpret the alternative hypothesis (H_A), while Step 3 discusses the Truth Table that includes possible errors in hypothesis testing. Step 6 discusses in detail the rejection region of the null hypothesis (H_0).

The lesson also introduced us to some basics in ANOVA-related explanatory data analysis (EDA). The graphics such as side-by-side boxplots and mean plots are useful tools in producing a visual summary of the raw data and ANOVA results. These will serve as stepping stones to more elaborate graphical techniques we will learn throughout the course.

The concepts and methodology learned in this lesson, though seem straight forward will help us navigate more complex topics addressed in future lessons. The keywords and phrases learned in this lesson are:

- null and alternative hypotheses (H_0 and H_A)
- Type 1 and Type II errors
- significance level (α)
- rejection region
- F statistic and its critical and calculated values.

This page titled [1.3: Chapter 1 Summary](#) is shared under a [CC BY-NC 4.0](#) license and was authored, remixed, and/or curated by [Penn State's Department of Statistics](#).