Purposes:

1. Assess whether students ability to conduct exploratory data analyses on data from a simple Multi-Environment-Trial.
2. Assess whether students ability to interpret results from exploratory data analyses and communicate their interpretations.
3. Assess whether students ability to make decisions about next steps and clearly communicate justifications for their decisions.

Keywords:

Exploratory Data Analyses (EDA), Histogram, Boxplot, Multi-Environment Trial (MET)

References:

Plant Breeding Basics: Review Exploratory Data Analysis, Review Installation of R, Review EDA with R.

Directory of useful R commands

- getwd()
- setwd()
- read.csv()
- rm()
- rm(list=())
- hist()
- attach()
- boxplot()
- str()
- as.factor()
- aov()
- summary()

ALA:

Yield and maturity were evaluated on 40 plots in two incomplete blocks at two environments (Ames and Castana). Thirty-six soybean $F_{3:5}$ lines from a single cross were divided into two groups of 18. Two elite checks referred to as entry 36 and entry 40 were added to each of the two groups to constitute 20 entries per group. Entry 36 is classified as having a maturity of 3.0, while Entry 40 is classified as having a maturity of 2.5 when grown at this latitude. The 20 entries from each group were randomly assigned to 20 field plots within each field blocks at each of the environments. The yield and maturity data exists in a file named "Review Exploratory Data Analysis ds2.csv".

1. Load this data set into the R software environment and demonstrate that the correct data set has been loaded.
2. Assure that significant digits are consistent across all plots.
3. Demonstrate that you know how to conduct exploratory data analyses. In other words generate plots of histograms, Boxplots, and AOV for the Randomized Complete Block Design

An example of how to load data into the R environment and best practices for initiating an R program can be found in the "Install R ALA module" (Quantitative Methods). An example of how to conduct EDA and AOV for a CRD can be found in the "Review Models Install R ALA".