Wisconsin Fast Plants Artificial Selection Lab Report Guidelines

(35 points)

1. Introduction (5pts)
   1. Introduce the laboratory experiment. Relate your experiment to concepts learned in class. Explain why we did this experiment in the first place.
2. Data Presentation (15pts)
   1. The height data is posted on the course website under “Evolution Unit Resources.” The file is titled “Artificial Selection Wisconsin Plant Height Data 2014.” The original lab handout is posted there as well.
   2. Create a data table in Excel that includes calculations of the mean, standard deviation, and standard error for the short plants and tall plants.
   3. Create a graph in Excel. Graph the means. Include standard error bars. Be sure to include a title and labeled axes on the graph.
   4. Run a T-Test on the data to see if the two data sets are statistically different.
   5. Copy the data table (mean, standard deviation, and standard error) and your graph into your lab report Word document.
   6. Report the T-Test P-value.
3. Conclusions (15pts)
   1. Interpret the data. Discuss the results of the T-Test. Discuss what your results mean when you consider the original experimental question.
   2. Address the validity of the experiment. Were there any errors or issues in terms of the experimental design or conducting the experiment that should be addressed? (Note: there is no perfect experiment. You must identify at least one issue.) Are you still confident in the results? Why or why not?
   3. Discuss a way(s) to change and improve the experiment.
   4. What is a question(s) for further research? What experiment would you like to do next?

\*Submit your lab report as a Word document to TurnItIn. Choose “Upload a file”; do not choose “Copy and Paste” when submitting to TurnItIn.

\*Due 10:00pm Thurs. 11/6/14.