**Transpiration Lab Poster Guidelines**

* Descriptive Title
* Purpose Statement (one sentence)
* Background Information needed to understand the investigation done, including *baseline* method overview.
* Methods Experimental Design **Table** of treatments with experimental parameters used per treatment (table taken from Experimental Design Worksheet). **A photo of the experimental setup must appear.**
* Results graphs, tables, and microscope images as needed. (See below)
* Conclusion Statement about the relationship discovered, addressing the purpose (one sentence, maybe a long one).
* Discussion: data interpretation that employs biological principles leading to the conclusion.

**Results Guidelines**

* Calculate average rate of transpiration per unit leaf area and standard deviation for each treatment using the three or four replication values acquired per treatment. Compare these averages in a graph (see below).
* Include one (or more) sample linear scatter plot(s) with linear trend line(s) and slope equation(s) to show transpiration rate determination.
* Run student t tests to determine significant differences to base concluding statement on. Use a website used for the Banana Lab (see below).
* Include significant differences with calculated p values (p must be less than or equal to 0.05 for the two averages to be significantly different, or less than or equal to 0.01 for the two averages to be highly significantly different) in a table with treatment averages and standard deviations. Organize carefully for clarity.
* Using an appropriate graph type, graph the average values (transpiration rates per unit leaf area). Also, add standard deviation “error bars” (but use plus and minus one standard deviation instead of standard error). Refer to YouTube directions for doing this with Excel. <http://www.youtube.com/watch?v=G10_qGcuELA> or

<http://www.youtube.com/watch?v=GkzrKxR25sM>

**Student t test: two tailed, unequal variances.**

ABOUT: Two sample t test, HOW: <http://ccnmtl.columbia.edu/projects/qmss/the_ttest/twosample_ttest.html>

A GREAT, simple t test calculator (unequal variance, BOTH tails/sides): <http://in-silico.net/tools/statistics/ttest>

\*\*\* MY favorite one: Another calculator (NOT paired, copy and paste data to n=99): <http://www.physics.csbsju.edu/stats/t-test.html>