

Notes:

- Your major questions for today are: “Does cytokinin slow down plant tissue senescence?” and whatever question you asked for your seed germination experiments.
- You will need the handout from last week which has today’s instructions.

Complete in lab:

- Using the instructions from last week, extract the chlorophyll from your leaf discs. **Use the glass test tubes to do the warm alcohol extraction.**
- After the extraction cools a bit, transfer enough solution from one tube to a plastic cuvette to fill the cuvette to the fill line.
- While you wait for the solutions to cool, check the results of your seed germination experiments.
- Warm alcohol tends to etch the plastic cuvettes, so fill one at a time, take a reading immediately, then prepare the next. You will discard the cuvettes when you are done.
- Record the data on your data sheets. Use Excel on the lab computers to analyze the data. If you do not know Excel basics, such as entering formulas, doing a drag-down fill, making graphs, etc., ask for help.
- You will use your Excel spreadsheet to make two graphs for your write-up. *Think about this.* What kind of graph is most appropriate for the data you are collecting? How can you design the graph, including labels and legends, so that the reader understands it?

Homework:

Your homework this week is a formal write-up of the cytokinin experiment and an informal write up of the seed germination experiment. Please write these in a word processor and check for spelling.

Cytokinin report should include:

- **Introduction:** Write a paragraph or two about cytokinin and its effects on plant tissue, using resources such as your textbook, lab book, and lab handout. A good introduction to a scientific paper should lead up to the problem that the study investigates.
- **Problem:** Your introduction should lead naturally to a problem statement to the effect of, “If we know that cytokinin does ____ then – ” followed by your hypothesis about cytokinin’s effects on bean leaf tissue.
- **Method:** Write a very short summary of the procedures from the handout.
- **Results:** Include
 - your Excel spreadsheet with the data and analysis
 - graph of treatment vs. chlorophyll retention
 - graph of treatment vs. % chlorophyll retention
 - text that describes the data and general trends that you see.
- **Conclusions:** Write the conclusions that you draw from this experiment. Be sure to support your claims with actual data from the experiment. Don’t simply repeat your results – extract broader meaning from the results in terms of the effects of cytokinins on chlorophyll retention. Also discuss any sources of error that could have affected your outcome, especially if you have unexpected results.

Seed germination report should include:

- **Introduction:** Write a paragraph or two about the factors that you expected to have an effect on seed germination.
- **Hypothesis:** State what factor you chose to investigate, and what your hypothesis was for your investigation.
- **Method:** In paragraph form, describe what you did and *why you did it*. Your procedures should relate directly to the hypothesis that you are testing.
- **Results and Conclusions:** Describe what you observed at the end of the experiment, and what you can conclude from these results.