## Bi 213 Lab  Lab Topic 21: Plant Growth  Spring 2009

Notes:

- Your major question for today is: "How do different plant hormones affect the growth of plants?"
- In addition to selected activities from the lab book, we will begin an experiment on the effects of cytokinins on tissue ageing.

Complete in lab:

- Exercise 21.1
    - Lab Activity A: observe the internal structure of soaked bean seeds, and the external structure of germinated radish seeds.
    - Lab Activity B: We will limit ourselves to questions a or b. Choose one and use the film canisters provided to design a small investigation. You will need to write up your findings next week. Include a question, hypothesis, procedure, results, and conclusions. Keep in mind the claims-evidence model: all claims in your conclusions must be supported by evidence in your results section.
- Exercise 21.2:
    - Lab Activity A: This is already set up with *Pelargonium* (zonal geranium) plants. Observe the growing tip of the plants rather than just the leaves.
- Exercise 21.3
    - Lab Activity A: The corn has already been treated and grown in the greenhouse and is on the side counter. Measure several individual plants in each of the pots and take a mean.
- Cytokinin experiment: See separate handout. You will set up the experiment this week and collect the final data next week, which will occupy most of the lab period.

**Complete for this week's homework (on your own paper):**

- Drawings of bean seed and germinating radish seeds (include labels)
- Data table for gibberellin demonstration
- Discussion questions:
    - pp 548, 1, 2, 3
    - p 551, 1 through 5. Be sure to consult your textbook for answers.
    - p 556, 1 and 2. Be sure to consult your textbook for answers.
- Questions for Review, number 1 – briefly define or draw pictures of all terms in the question.
- Applying Your Knowledge, numbers 1 and 4
- Group challenge question:
    - You are a plant pathologist and have been called by a rice farmer to discover why some of her rice plants are behaving strangely. When you arrive you observe that most of the rice seedlings are normal sized, but about 3% of the seedlings grow enormously tall and fall over. You take some tissue samples of these strange seedlings back to your lab and discover that the seedlings are infected with a fungus, which leads you to wonder if the fungus is secreting a plant hormone that is affecting plant growth. What hormone would you suspect, and why?

Homework is due in one week at the start of lab.

*Next* week's homework will be:

- Write-up of Lab Activity B from Exercise 21.1
- Data for the Cytokinin activity.
- Write-up for the Cytokinin activity.