Bio 109—General Biology I—Formal Laboratory Report - Bean Germination

GRADING CRITERIA

General 10 points
___ □ Adheres to prescribed format
___ □ Word processed, double space (except where noted), 1” margins top/bottom, Left/Right
___ □ Paper is stapled or bound in folder
___ □ Correct grammar, spelling and punctuation
___ □ Personal Pronouns not used
___ □ All headings are centered and printed in upper case; follows 2 lines below end of previous section
___ □ Language appropriate for audience (Bio 109 students)
___ □ Proper APA citations of references
___ □ Present for all lab sessions

Title/Author 10 points
___ □ This section is on a separate cover sheet
___ □ Title conveys the specific essence of the experiment
___ □ Scientific name of organisms studied (italicized or underlined)
___ □ Specific aspect/parameter(s) of the organism you studied
___ □ The factor tested/manipulated in the experiment
___ □ Author’s name appears as requested
___ □ Course Title is given below author’s name
___ □ Name of professor (spelled correctly)
___ □ Date is given below professors name

Abstract 10 points
___ □ Concise, but comprehensive summary
___ □ Identifies what you did, how you did it, significant results, and conclusions
___ □ Single-spaced; may be numbered

Introduction 20 points
___ □ States the hypotheses of the experiment
___ □ Provides background information from references about work already done on this topic, including, but not limited to.
   a. What is a seed
   b. Is a seed alive; explain.
   c. What factors are needed for germination?
   d. What happens during germination?
   e. Root/shoot formation
   f. What is salt?
___ □ Proper referencing of literature cited

Materials & Methods 10 points
___ □ List (single spaced) of materials, specimens, supplies, equipment, facilities, conditions used in the experiments complete
___ □ Correct units of concentrations of salt solutions, temperatures, etc.
___ □ Enough details provided to allow for repeatability
Results 15 points

- Data presented in table and graph(s)
- Located immediately after Materials/Methods; not attached to the back of the paper
- Table and graph(s) are completely and properly labeled
- A detailed narrative of the results is present in addition to any graphs/tables.
- Data is provided for all aspects of the experiment

Discussion 20 points

- The original hypothesis is related to the data
- Discussion is logical and well organized
- Discussion shows an understanding of the scientific method
- Conclusions are drawn from the data presented in the “Results” section
- Conclusions are supported by (or refuted by) information from references
- Background information in the Introduction is used to discuss the results
- Suggestions for a new hypothesis or modification of this experiment are provided
- Answers to the following questions are integrated into the discussion:
  1. What effect does salt have on germination, root and shoot development.
  2. What effect does higher salt concentration have on plant cells
  3. Are there some salt concentrations that appear to have a detrimental effect and some concentrations seem to foster growth; explain
  4. What is a control in this experiment and why/how was a control used?
  5. Discuss the environmental implications of the data.
  6. Terms defined on the pre-lab should be used in the Introduction section and/or the discussion section of the paper.

Literature Cited 5 points

- References are alphabetical and properly written, and includes at least one or more outside references in addition to the textbook.

Total Points 100

Final Grade