Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**APES LD-50 SALINIZATION LAB ANALYSIS**

**Pre-lab Content: (Read the Introduction!)**

1. Briefly explain how irrigation leads to an increase in soil salinity.
2. How does soil salinity impact the ability to grow crops?
3. How are bioassays used?
4. Why are radishes and salt a good combination to use for the purpose of this lab?

**Data table:**

**Radish Seed Germination**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Salt H2O Concentration** | **Number of Seeds NOT Germinating** | **Total Number of Seeds Tested** | **Percent Mortality** | **Class Average of % Mortality** |
| Control (0%) |  |  |  |  |
| 0.5% |  |  |  |  |
| 1.0% |  |  |  |  |
| 1.5% |  |  |  |  |
| 2.0% |  |  |  |  |
| 3.0% |  |  |  |  |

**Graph:**

Use the class average data to graph the relationship between salt water concentration (x-axis) and percent mortality (y-axis). Be sure to label each axis and make an appropriate title. Connect your data points with a smooth curve.

0.0001

0.001

0.01

 0.1

1

10

100

20

40

60

80

100

**Questions:**

1. Explain why it was necessary to have a sample with plain water.

1. What is meant by LD-50? Describe some situations in which it is used.
2. Label the LD-50 on your graph.
3. Why is it that only a certain percentage of organisms die in a given population when exposed to a certain concentration of a toxic chemical?
4. Discuss the environmental effects of using sodium chloride (salt) on roads and highways during the winter months.