# Materials

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| --- | --- | --- | --- |
| (25) petri dishes | * (1) role paper towel | scissors | blender |
| knife | scale | plastic gloves | distilled water |
| clear tape | permanent marker | Eucalyptus leaves | Rye Grass seeds |
| Measuring cups (ml) | source of sun | Journal (collect data) | Metric ruler |

**Procedure:**

# **Mixture**

1. Cut 50 grams worth of eucalyptus leaves into small squares about ten millimeters long.
2. Mix with 200 mL of water by adding 25 grams of leaves to blender and then all of the water; slowly add in the rest of leaves.

3. Mixture should be watery/saucy.

# **Setting Up Mixtures for Each Solution**

1. You now have a 25% mixture solution of eucalyptus leaves (place in container that can be used to pour solution and kept refrigerated).
2. Measure out 10mL of mixture in graduated cylinder, then add 10mL water.
3. Place in new container and label 12.5% (should now have two containers one labeled 25%, another labeled 12.5%).
4. Measure out 5 mL of mixture in graduated cylinder, then add 10 mL water.
5. Place in beaker and label 6.25% (should now have three containers).
6. Measure out 2.5 mL of mixture in graduated cylinder, then add 10 mL water
7. Place in beaker and label 3.125%
8. The last solution is the control. Plain distilled water will do.

# **Culture Dish Set-up**

1. Obtain 25 culture dishes
2. Cut out 50 circles of paper towels that will fit in bottom of dishes (two for each).
3. Count out 50 rye grass seeds, place in culture dish.
4. Repeat twenty five times times.
5. Label five dishes-25% (A-1)(A-2)(A-3)(A-4)(A-5)
6. Label five dishes-12.5% (B-1)(B-2)(B-3)(B-4)(B-5)
7. Label five dishes-6.25% (C-1) . . . etc.
8. Label five dishes-3.125% (D-1). . . etc.
9. Label five dishes-control (E-1) . . . etc.

# **Adding Solution**

1. Add 10 mL of 25% solution into five dishes labeled (A).
2. Add 10 mL of 12.5% solution into five dishes labeled (B).
3. Add 10 mL of 6.25% solution into five dishes labeled (C).
4. Add 10 mL of 3.125% solution into five dishes labeled (D).
5. Add 10ml of distilled water into five labeled (E).
6. Cover all dishes and do not open until final day of germination.
7. Place all culture dishes in a warm/light sunny place.

**\* Set up another twenty five culture dishes, use only twenty five seeds in each one. Then add solution according to “Add Solution.”**

**\* These dishes will be opened every other day to measure length of grass. The other dishes with 50 seeds will be kept close until the final data collection incase other dishes get contaminated. Data collection for the 25 seeds will focus on length and data collection for the 50 seeds will focus on seeds germinated.**

**\* By using two different numbers of seeds it will show whether number of seeds makes a difference in the growth rate of rye grass.**

**\* If you can insure no contamination, go ahead and measure lengths of both 50 and 25 seeds.**

## Tips

1. Make sure to place the dishes in a place where all dishes will receive equal sun light. If drying out starts to occur move in a shady place.

## Data Collection

1. Make sure to always wear plastic gloves when dealing with anything pertaining to the experiment because contamination could alter data results.

2. Take data collections ever day with the dishes containing fifty seeds. Write down all observations noticed in each dish.

3. Record each day the length of rye grass (use metric ruler, mm), color and length of roots.

4. Use the data tables supplied for data collection.