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EXPERIMENT NO. 3

NAME OF EXPERIMENT: TO DEMONSTRATE THE EVOLUTION OF CO_2 DURING AEROBIC RESPIRATION.

APPARATUS REQUIRED.

1. A set of conical flask
2. Cork
3. Beaker
4. Test tube
5. Thread.

CHEMICALS REQUIRED

1. Potassium hydroxide
2. Vaseline.

MATERIAL REQUIRED

1. Germinating seeds.

THEORY

Aerobic respiration is a process of oxidation of organic substance in the living cells in presence of oxygen resulting the liberation of energy.

$$C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O + \text{energy}.$$

The germinating seeds metabolize the nutrients stored in seed. Oxygen is consumed in this process and stored nutrients are oxidised to carbon dioxide and water.

PROCEDURE

1. Some germinating gram seeds were kept in a conical flask.
2. A tube bent twice at right angle was taken and fit into a conical flask by means of cork tightly.
3. A small test tube containing KOH soln was hang in the flask by means of a thread.
4. The free end of bent tube was dipped in a beaker containing water.
5. The cork joints was sealed by applying vaseline.
6. The whole experiment was left for few hours and observed.

OBSERVATION

After few hours of experiment it is observed that water rises up in the tube from the initial level.

CONCLUSION

Germinating seeds respire aerobically inside the flask and release CO_2. The CO_2 observed by KOH a partial vacuum is created in the flask. The vacuum act as a suction pump and pulls the water up. It causes the rising of

of water level. KOH is observed only CO_2 gas. Therefore, the ~~evolution~~ evolved gas must be CO_2.

PRECAUTIONS

1. The apparatus should be handled carefully
2. The seeds should be germinating.