

Puspa Shrestha

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Puspa Shrestha

EXPERIMENT NO. 2

NAME OF EXPERIMENT: TO DEMONSTRATE THE PROCESS OF TRANSPIRATION BY BELL JAR METHOD.

APPARATUS REQUIRED

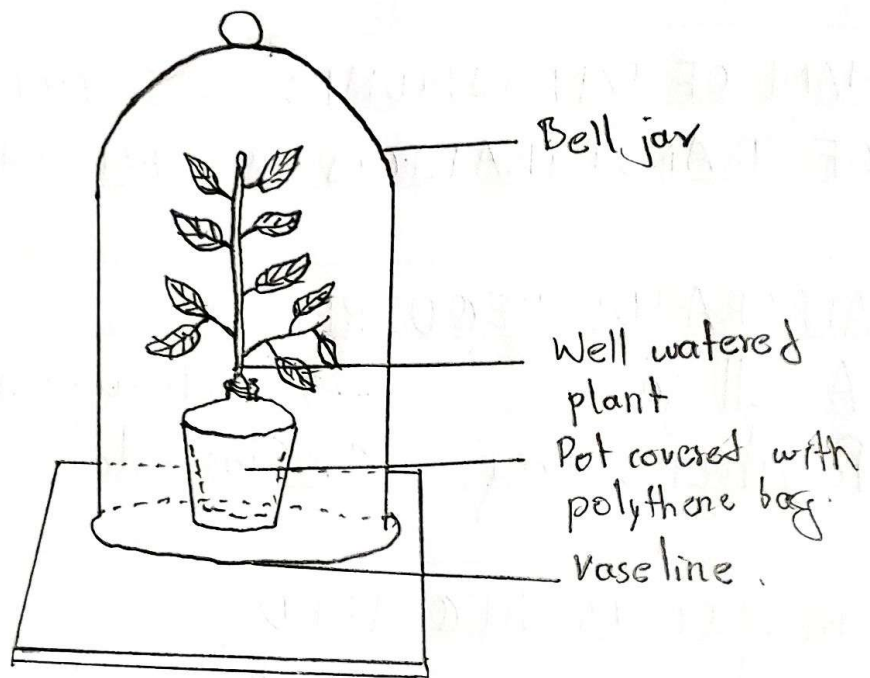
1. A bell jar
2. A well-watered potted plant
3. Polythene bag
4. Glass-slab.
5. Thread.

CHEMICALS REQUIRED

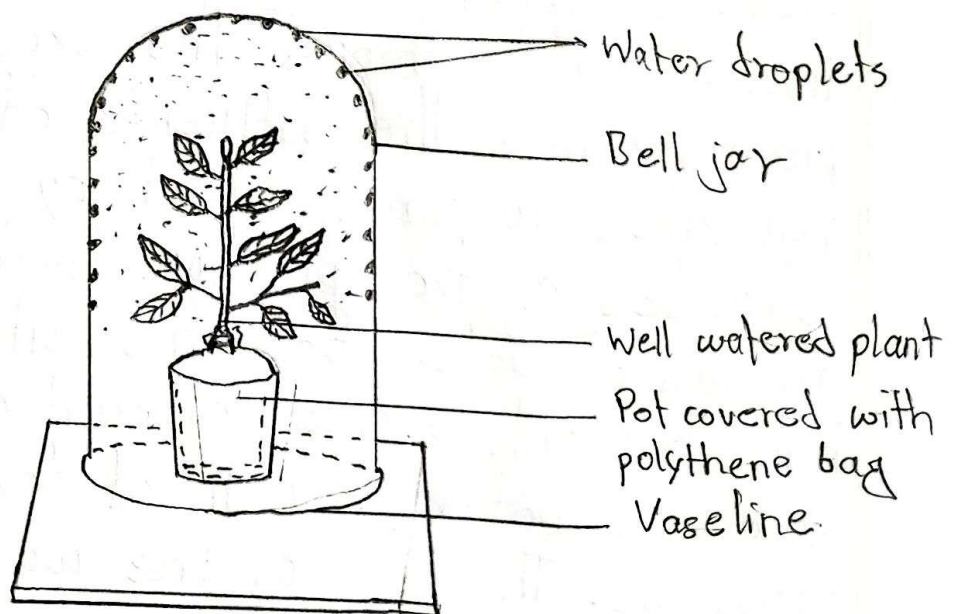
1. Vaseline
2. Water

THEORY

The process of the loss of water in the form of water vapour from the internal tissues of the living plants through the exposed parts of the plants, under the influence of sunlight and regulated to some extent by protoplasm is regarded as transpiration. Plants absorb a large amount of water from the soil through the root hair but only a small amount about 1-2% of total absorbed water, is utilized for different metabolic activities. The rest of the water is lost in the form of vapour during transpiration.



At the Beginning of the Experiment



At the End of the Experiment

PROCEDURE

First of all, a healthy and well watered potted plant was selected. The pot was covered with along with the soil with a polythene bag to prevent evaporation through these parts (soil and pot). The polythene bag was tied tightly with the help of a strong thread. Then, the whole apparatus was kept on a glass slab and it was covered with a dry bell jar. The connection was made between bell jar and glass slab airtight by applying vaseline to check the entry of water vapour from outside. Then, the whole setup was kept in light.

OBSERVATION

After some time, it was observed that there was the formation of water droplets on the inner side of the bell jar.

RESULT AND CONCLUSION

As the bell jar is properly sealed and the pot and soil are covered with water proof polythene bag, the water evaporated gets collected inside the polythene bag and cannot come out into the ~~the~~ chamber of the bell jar. Hence, the water droplets formed on the inner side of the

bell jar are due to condensation of water vapour lost by the aerial part of the plant when they come in contact with the cool surface of bell jar. This process of loss of water in the form of vapour through the aerial parts of the plant body is called transpiration.

PRECAUTIONS

1. The potted plant should be well watered.
2. The polythene bag should be used properly.
3. The connection should be airtight.
4. The edge of the bell jar should be sealed properly.
5. The setup should be placed in light but not in direct sunlight.