

EXPERIMENT NO- 08

DETERMINATION OF RATE OF TRANSPIRATION

PRINCIPLE

Transpiration is a physiological process of plants by which excess water is released in the form of water vapor from the plants through stomata, epidermis and cuticle.

MATERIALS REQUIRED

Leaf with long petiole, conical flask filled with water, polythene sheet, rubber band or cotton thread, graph paper, pencil, blade and balance

PROCEDURE

At first, area of the leaf was drawn over a graph paper with the help of pencil and rubber. After which, the terminal part of the petiole was cut obliquely with the help of blade to allow more surface area for observation of water. The conical flask was then filled with water and covered with a polythene sheet having a hole in the center for the end of the petiole. The polythene sheet was tied with the help of rubber band. The leaf petiole was inserted into the conical flask through the hole and the weight of the conical flask along with the leaf was taken in the electrical balance (W_1 gm) the whole set was then kept under bright source of light for one hour to allow transpiration. After which, final weight of the set was taken (W_2 gm). The rate of transpiration was expressed as loss of water in gm/sq.cm of leaf area/hour.

OBSERVATIONS

The following traits were observed, measured and recorded:

No. of big squares:

No. of medium squares:

No. of small squares:

Total area of leaf:

Initial weight of setup:

Final weight of setup:

$$\text{Rate of transpiration} = \frac{\text{Initial weight} - \text{Final weight}}{\text{Area of the leaf}} \quad \text{g/ cm}^2/\text{hour}$$

CALCULATION

RESULT

CONCLUSION