

Transpiration

Lab (6)

Out excess water from plant body as water vapor through the holes that present on the surface of the leaf called (stomata)

High percent of water absorbed from soil will be lost by transpiration.

This process is necessary for :-

- 1- Absorption more of ions and nutrient from soil.
- 2- Rebalance the pressure of overload water inside the plant tissues, by get rid of over load water inside plant.

Types of transpiration :-

- 1- Stomata:- losing 90% of water vapor through stomata.
- 2- Cuticular :- losing 5% -10% of water vapor through epidermis and cuticle.
- 3- Lenticular :- losing 2-5% of water vapor through lancets of periderm in xylem.

Factories affecting transpiration :-

- 1- Light :- in day light, plant need water for photosynthesis and other bio reaction , so the loss of water is decreased through transpiration (inverse relationship).
- 2- Humidity :- high humidity in atmosphere (high percentage of water vapor), that will press on the stomata, and decreases loss of water through transpiration vapor from leaves.
- 3- Air movement (winds):- fast winds will increase evaporation on the surfaces of leaves, and that will

increase losing of water vapor from stomata (increasing transpiration).

- 4- Temperature :- in high temperature region (desert) plant need all the water and maintains of water inside tissue for survive, so the losing of water decreased.
- 5- Water containing :- high percent of water inside tissue, causing a high losing of water, for rebalance that pressure of water inside tissue. (increasing transpiration).
- 6- Atmospheric pressure :- high pressure (in high region) that will press on the stomata and that decrease of losing water vapor from leave (less transpiration).

Guttation :- outer excess of water from plant as a drop (liquid form), through a special holes called (**hydrathodes**) in the end of xylem tissue, the adages of leaves for some plant (tomato, turimp). This case obtain transpiration decreased in unusual circumstance, and a high percent of water collected inside plant tissue, so the plant exiting water by guttation.