**PHYSIOLOGICAL BASIS OF PLANT IRRIGATION**

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**Abstract:** Water is one of the main environments for living organisms. Under waterless conditions, organisms die or enter a state of anabiosis. The amount of moisture in the soil and air also affects the plant. The normal structure and activity of the cell, especially the cytoplasm, depends on the level of water supply.

**Key words:** Cell, organoid, plant leaf, protoplasm sap, hydrolysis, synthesis, oxidation, reduction, photosynthesis, respiration, mineral elements, transpiration.

The amount of water in the body of plants can be from 70 percent to 90 percent. It depends on their species and varieties, age, habitat, various organs and even cell organoids. Especially in the young parts and leaves of the plant, this indicator can go up to 90 percent. The amount of water in the cell protoplasm can reach 80 percent, 98 percent in the sap, and 50 percent in the skin. Some wet fruits have a lot of it: 98% in cucumber, 94% in tomato, 92% in watermelon, and up to 77% in potato. In the life process of plants, water performs the following functions:

1) it is the main environment for the occurrence of biochemical reactions;

2) because it is a chemical compound, it directly participates in important reactions: hydrolysis, synthesis, oxidation and reduction reactions (photosynthesis, respiration, assimilation of mineral elements, etc.);

3) Protects plants from strong heat effects, they lower the temperature (transpiration);

4) Movement and redistribution of mineral elements received by plants from the soil, organic matter formed in its body also occurs at the expense of water. Every plant living in nature consumes a large amount of water during its ontogeny (mainly

evaporates through the body).

The amount of water consumed by the plant during its ontogeny depends on the climatic conditions. For example, in a hot and dry climate, this indicator can be 2-3 times more than in a humid climate. In addition, it is affected by the amount of water in the soil.

In the body of all plants living on land, a continuous water exchange process takes place.

Such a process is called the water regime of plants and consists of three stages: 1) absorption of water by the roots; 2) movement and distribution along the plant body; 3) evaporation through leaves — transpiration. Each of these stages includes several processes.

Plants supply only a small part of their water requirements through their above-ground organs (mainly leaves). This can happen mainly during periods of precipitation and high humidity.

The main amount of water that ensures normal growth and development is obtained from the soil through the root system. In order to get water from the soil, the absorption power of plant root cells must be slightly higher than the absorption power of the soil solution. Because there are forces in the soil that resist such absorption, they are called water-holding forces. Usually, water in the soil is not pure, but in the form of a solution of a certain concentration.

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