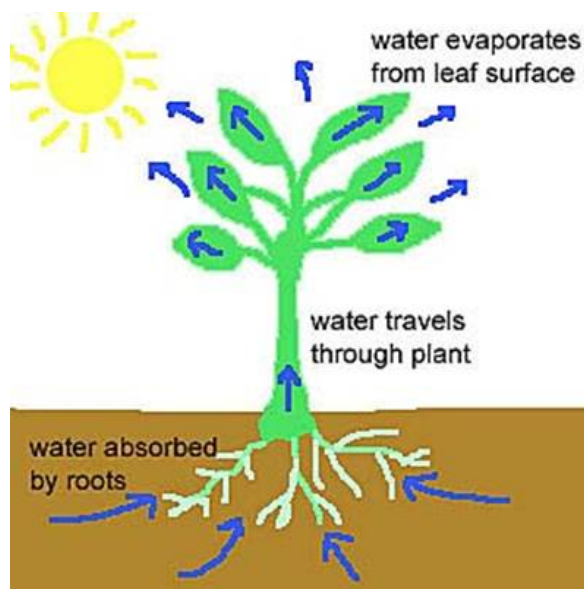


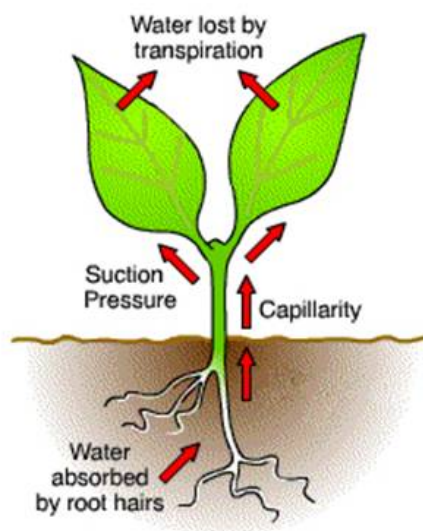


Irrigation Management :: Role of Water

ROLE OF WATER FOR GROWTH AND DEVELOPMENT OF CROPS



- Water is a constituent of protoplasm
- Water acts as a solvent. Plants can absorb nutrients when these nutrients are dissolved in water
- Water is used for transpiration carrier of nutrients from the soil to green plant tissues.
- They are used for photosynthesis and the end product is also conveyed through water to various plant parts
- Water forms over 90% of the plant body by green or fresh weight basis.
- Plants can synthesis food through photosynthesis only in the presence of water in their system.
- Water helps to maintain the turgidity of cell walls. Water helps in cell enlargement due to turgor pressure and cell division which ultimately increase the growth of plant.
- Water is essential for the germination of seeds, growth of plant roots, and nutrition and multiplication of soil organism.
- Water is essential in hydraulic process in the plant. It helps in the conversion of starch to sugar.
- Water helps in the transpiration, which is very essential for maintaining the absorption of nutrient from the soil.



- Water regulates the temperature and cools the plant.
- Water helps in the chemical, physical and biological reaction in soil.

So, water is applied externally, if availability seems limited through soil, not sufficient to meet the requirement due to drought or excess losses. We call the external application of water to the soil to supplement the requirement as '**Irrigation**'.

In Tamil Nadu the percentage ranges from as low of 0.1% in Nilgris to a high of 88% in Thanjavur district. Arcot districts and Kanchipuram register 50 to 78%. Dharmapuri (19%), Salem (23%) and Dindigul (29%) are the districts which need greater effort to increase the irrigated area.

Development of irrigation in India

Irrigation has been practiced in India and other Asian countries from early times. Of course civilization started through irrigation systems. All these early civilization are in

South and South West Asia. In Tamil Nadu the early Chola kingdom is reported with well developed technologies for irrigation management. The check dam at Kallanai to regulate the river for irrigation is a typical example.

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