

The principles of Crop Production

Growth and Germination

The second part

The rooting system remains in darkness below the surface of the soil and is usually white in color. In many rooting systems, there is a central root, sometimes known as the tap root, from which a number of side roots develop as branches, and the side roots end in a number of fine rootlets. When examined under a lens the end of a rootlet is seen to consist of a cap at the very tip, and behind the tip are numerous fine root hairs, which absorb water and water solutions of plant nutrients from the soil. The rootlets and the side roots contain a series of hollow vessels, which connect with those of the central root, and through these the substances absorbed by the root hairs pass, and in time reach the base of the stem. Another

series of vessels in the stem is available for the passage of these materials to the leaves and the flowers. There are other vessels present in the leaves and stems through which the plant foods manufactured in the leaves are transferred to the roots or to the flowers. In one sense, a living plant may be described as a self-contained system of transport, which moves water and nutrients taken in from the soil and plant foods from the leaves and distributes these substances throughout the plant as they are needed for growth or storage. Provision is also made for the disposal of surplus water out into the surrounding atmosphere by ways of openings in the leaves.

Qs:

State which of the following statements is true and which false, according to the passage. Justify your answers by reference to the text.

The Second Part

1. The materials for plant growth are made from the plant nutrients absorbed by the roots.
2. The rooting system of a plant is quit simple.
3. The passage of plant nutrients is a one-way process from root to stem.
4. If a plant has more water than it requires for growth then that water is absorbed by the soil.
5. The three stages of the growth of a plant are: (a) germination, (b) flowering, (c) production of seed.