

Plant Morphology

Morphology : The study of forms and features of different parts of plants like roots, stems, leaves, flowers, fruits etc. is called Morphology.

Root

Root is the descending part of the plant which develops from radicle.

Root generally grows in the soil away from light.

Roots are of two types — (i) Tap root and (ii) Adventitious root.

Modification of Tap roots are :

1. **Conical** – like Carrot
2. **Napiform** – like Turnip, beet etc.
3. **Fusiform** – like Radish.

Stem

This is the part of a plant which grows towards light.

It develops from plumule.

The modification of stems are as under –

Underground stem

1. **Tuber** – like Potato.
2. **Corm** – like Colocasia, Saffron etc.
3. **Bulb** – like Onion, Garlic etc.
4. **Rhizome** – like Turmeric, Ginger etc.

Leaf

It is green. Its main function is to make food through photosynthesis.

Flower

This is the reproductive part of the plant.

In the flower Calyx, Corolla, Androecium and Gynoecium are found. Out of these androecium is male sex organ and the Gynoecium is female sex organ.

1. **Androecium** : Unit of androecium is stamen there is one or more stamens in the androecium. Pollen grains are found in anther.
2. **Gynoecium** : Unit of gynoecium is carpel. There are three parts of carpel – (i) Ovary, (ii) Style and (iii) Stigma.
3. **Pollination** : After maturation of Anther, the process of reaching of pollen grains to stigma is called pollination. Pollination is of two types – (i) Self-pollination (ii) Cross-pollination
4. **Fertilization** : Pollen tube reaches the egg cell after entering into the ovule through a pore called micropyle. After that a male nucleus fuse with egg-cell. This is called fertilization. Fertilized egg is called zygote.
In angiosperm, the fertilization is triple fusion whereas in other category of plants it is double fusion.
5. **Parthenocarpy** : In some plants fruits are developed from ovary without fertilization. This type of fruit is called parthenocarpy. Normally these types of fruits are seedless. Example – Banana, Papaya, Orange, Grapes, Pine-apple etc.

Formation of fruits

Fruit is a matured or ripened ovary developed after fertilization.

Formation of fruit takes place from ovary.

Fruits are divided into three types —

1. **Simple fruits** – like Banana, Guava etc.
2. **Aggregate fruit** – Strawberry, Custard apple etc.
3. **Composite fruit** – Jackfruit, Mulberry etc.

In the development of some fruits, Calyx, Corolla and thalamus takes part. These types of fruits are called False fruits. Example – Apple, Jackfruit, pear etc.