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Class 7th

Chapter - 8

Reproduction in Plants

The process of producing a new organism from the existing organism (or the parent) of the same species is called reproduction. Or we can say the production of new individuals from their parents is known as reproduction. There are different modes of reproduction.

MODES OF REPRODUCTION

Most plants have roots, stems and leaves. These are the vegetative parts of a plant. After a certain period of growth, most plants bear flowers. These flowers develop into fruits and seeds. You may have seen the mango trees flowering in spring. It is these flowers that give rise to juicy mango fruit we enjoy in summer. We eat the fruits and usually discard the seeds. Seeds germinate and form new plants. Flowers perform the function of reproduction in plants.

There are several ways by which plants produce their offspring. These are categorised into two types: (i) asexual, and (ii) sexual reproduction.

In Asexual reproduction plants can give rise to new plants without seeds, whereas in Sexual reproduction, new plants are obtained from seeds.

ASEXUAL REPRODUCTION

In asexual reproduction new plants are obtained without production of seeds. In this process only one parent is involved in the production of new individuals.

Vegetative propagation

It is a type of asexual reproduction in which new plants are produced from roots, stems, leaves and buds. Since reproduction is through the vegetative parts of the plant, it is known as vegetative propagation.

Plants produced by vegetative propagation take less time to grow and bear flowers and fruits earlier than those produced from seeds. The new plants are exact copies of the parent plant, as they are produced from a single parent.

Budding

The small bulb-like projection coming out from the yeast cell is called a bud. The bud gradually grows and gets detached from the parent cell and forms a new yeast cell. The new yeast cell grows, matures and produces more yeast cells. If this process continues, a large number of yeast cells are produced in a short time.

Fragmentation

You might have seen slimy green patches in ponds, or in other stagnant water bodies. These are the algae. Algae that present in water bodies reproduce by Fragmentation. When water and nutrients are available algae grow and multiply rapidly by fragmentation. An alga breaks up into two or more fragments. These fragments or pieces grow into new individuals. This process continues and they cover a large area in a short period of time.

Spore formation

The fungi on a bread piece grow from spores which are present in the air. Spores are asexual reproductive bodies. Each spore is covered by a hard protective coat to withstand unfavourable conditions such as high temperature and low humidity. So they can survive for a long time. Under favourable conditions, a spore germinates and develops into a new individual. Plants such as moss and ferns also reproduce by means of spores.

SEXUAL REPRODUCTION

The flowers are the reproductive parts of a plant. Stamens are the male reproductive part and pistil is the female reproductive part. Flowers which contain either only pistil or only stamens are called unisexual flowers. Flowers which contain both stamens and pistil are called bisexual flowers. Corn, papaya and cucumber produce unisexual flowers, whereas mustard, rose and petunia have bisexual flowers. Both male and female unisexual flowers may be present in the same plant or in different plants.

Anther contains pollen grains which produce male gametes. A pistil consists of stigma, style and ovary. Ovary contains one or more ovules. The female gamete or the egg is formed in an ovule. In sexual reproduction a male and a female gamete fuse to form a zygote.

Pollination

Generally, pollen grains have a tough protective coat which prevents them from drying up. The transfer of pollen from the anther to the stigma of a flower is called pollination.

If the pollen lands on the stigma of the same flower or another flower of the same plant, it is called self-pollination. When the pollen of a flower lands on the stigma of a flower of a different plant of the same kind, it is called cross-pollination.

FERTILISATION

The process of fusion of male and female gametes (to form a zygote) is called fertilisation. The zygote develops into an embryo.

FRUITS AND SEED FORMATION

After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The fruit is the ripened ovary. The seeds develop from

the ovules. The seed contains an embryo enclosed in a protective seed coat.

Some fruits are fleshy and juicy such as mango and orange. Some fruits are hard like almonds and walnuts

SEED DISPERSAL

In nature same kind of plants grow at different places. This happens because seeds are dispersed to different places.

Plants benefit by seed dispersal. It prevents competition between the plant and its own seedlings for sunlight, water and minerals. It also enables the plants to invade new habitats for wider distribution.

Seeds and fruits of plants are carried away by wind, water and animals.

Winged seeds such as those of drumstick and maple, light seeds of grasses or hairy seeds of aak (Madar) and hairy fruit of sunflower, get blown off with the wind to faraway places.

Some seeds are dispersed by water. These fruits or seeds usually develop floating ability in the form of spongy or fibrous outer coat as in coconut.

Some seeds are dispersed by animals, especially spiny seeds with hooks which get attached to the bodies of animals and are carried to distant places. Examples are Xanthium and Urena.

Some seeds are dispersed when the fruits burst with sudden jerks. The seeds are scattered far from the parent plant. This happens in the case of castor and balsam