

Fertilisation In Flowering Plants LR

Fertilization in flowering plants. Objective. To understand the process of fertilization in flowering plants.

During pollination in flowering plants, the stigma, which is the topmost part of the pistil, receives pollen grains from many flowers. Each pollen grain contains the male reproductive cell of its flower. When a grain of pollen falls on the stigma of a flower, it first tries to recognize if the sugary liquid secreted by the stigma is of the same kind of flower.

A pollen grain does not grow if it lands on the stigma of a flower of a different kind. Once the pollen recognizes the liquid as being from the same kind of flower, a small bulge or protrusion starts appearing in the pollen grain. This protrusion, along with the male reproductive cell, then penetrates the stigma and eventually starts growing as a thin tube.

This tube is known as the pollen tube. The pollen tube grows downward into the style, which is the elongated part of the pistil that is located between the stigma and the ovary. Finally, the pollen tube enters the ovule present in the ovary.

and releases the male reproductive cell. The male cell moves into the ovule and fuses with the egg cell, resulting in the formation of a zygote. This process is known as fertilization.

The zygote divides and re-divides several times within the ovule. This leads to the formation of an embryo within the ovule. The ovule, along with the embryo, develops hard layers and gradually gets converted into a seed.

The seed also contains stored food inside it. Meanwhile, the sepals, petals, stamens, stigma, and style dry up, shrink, and fall off. Finally, only the ovary remains.

The ovary then starts growing rapidly. This growth can be seen as the ovary starts swelling and becomes big, leading to the formation of a fruit. So, a fruit is the developed form of an ovary.

In plants, where an ovary has multiple ovules, fruits with multiple seeds are formed. To summarize, when the male cell moves into the ovule and fuses with the egg cell, resulting in the formation of a zygote, it is known as fertilization. The ovule, along with the zygote, develops hard layers and gradually gets converted into a seed.

After the formation of the seed, the ovary grows rapidly and swells to form a fruit.

Summary:

Fertilization in Flowering Plants

Fertilization in flowering plants occurs when **pollen grains** from the **stigma** of a flower travel down the **pollen tube** and reach the **ovule** inside the **ovary**. The **male reproductive cell** in the pollen fuses with the **egg cell** in the ovule, forming a **zygote**.

- The **zygote** divides and develops into an **embryo** inside the ovule.
- The ovule **hardens** and **becomes a seed**, storing food for the growing plant.
- The **petals, sepals, stamens, stigma, and style** dry up and fall off.
- The **ovary enlarges and becomes a fruit**, protecting the seed inside.
- Some plants with multiple ovules develop **fruits with multiple seeds** (e.g., tomatoes, apples).

Fertilization is an essential step in plant reproduction, leading to the formation of seeds and fruits! 🌱🍷

Quiz: Fertilization in Flowering Plants

1. What is the role of the pollen tube in fertilization?

- ☒ a) It carries the male reproductive cell to the ovule
- ☐ b) It absorbs nutrients for the plant

- ✗ c) It produces seeds directly
- ✗ d) It forms the fruit after pollination

2. What happens after fertilization in a flower?

- ✓ a) The ovule develops into a seed, and the ovary turns into a fruit
- ✗ b) The petals and sepals grow bigger
- ✗ c) The pollen grains turn into leaves
- ✗ d) The flower becomes a new plant immediately

3. Where does fertilization take place in a flower?

- ✓ a) In the ovule inside the ovary
- ✗ b) In the pollen tube
- ✗ c) On the surface of the stigma
- ✗ d) In the petals of the flower

4. What happens to the flower parts after fertilization?

- ✓ a) The petals, sepals, and stigma dry up and fall off
- ✗ b) The petals become seeds
- ✗ c) The sepals form a new flower
- ✗ d) The pollen grains turn into roots