ASEXUAL REPRODUCTION IN PLANTS AND FUNGI

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Asexual reproduction in plants and fungi. Objective, to understand the process of fragmentation in plants and budding in yeast. Like other living organisms, plants also reproduce.

Plants can reproduce either sexually or asexually. Let's learn about asexual reproduction. Fragmentation in plants is a type of asexual reproduction.

The water in ponds is stagnant and this encourages the growth of slimy green algae. Take a sample of water from a pond which has algae growing in it. Using a dropper, place a drop of the water on a glass slide and observe it under a microscope.

The thread-like structures that can be seen are algae. Let's now understand how fragmentation occurs in algae. With time, the algae break into two or more fragments and each fragment grows into a new organism and multiplies in the water body.

This process is known as fragmentation, which is a type of asexual reproduction. Budding in yeast, which is a fungi, is another type of asexual reproduction. Many organisms reproduce by the process of budding.

Let's see how this happens in yeast. Take a small amount of yeast powder and place it in a petri dish having some water. Stir the water so that the powder dissolves in it.

Take some of the solution in a dropper and place a drop of it on a glass slide. Observe it under a microscope. The yeast cells will be visible.

Now add a spoonful of sugar to the solution in the petri dish and stir it well so that the sugar dissolves. Let the solution sit for an hour. Now using a dropper, place a drop of this new solution on another glass slide and observe it under a microscope.

We can see the development of bulb-like projections coming out from the yeast cells. These are called buds. A bud grows and gets detached from the parent cell and forms a new yeast cell.

This cell grows further and produces more yeast cells. In the case of some of the yeast cells, after the formation of a bud, several buds could continue to grow from each other, forming a chain. This results in the formation of a large number of yeast cells in a short time.

To summarize, fragmentation is a type of asexual reproduction in which the parent cell breaks into two or more fragments and each fragment grows into a new cell. Budding is a type of asexual reproduction in which a bud-like projection, called a bulb, forms on the body of the parent organism. This bud grows into a new cell and gets detached from the parent body.

Summary: Asexual Reproduction in Plants and Fungi

Plants and fungi can reproduce **asexually**, meaning they produce offspring **without fertilization**. Two common types of **asexual reproduction** are **fragmentation** (in algae) and **budding** (in yeast).

Fragmentation in Algae

- Algae in **pond water** reproduce by **breaking into two or more fragments**.
- Each **fragment** grows into a **new algae organism** and continues to multiply in the water.
- This process is called **fragmentation**, a type of **asexual reproduction**.

Budding in Yeast

- **Yeast**, a type of **fungi**, reproduces by **budding**.
- A **bulb-like projection** (called a **bud**) forms on the parent yeast cell.
- The **bud detaches** and grows into a **new yeast cell**.
- Sometimes, **several buds** can form a **chain**, leading to **rapid multiplication** of yeast cells.

Key Takeaways:

- **Fragmentation**: The parent breaks into **fragments**, and each fragment grows into a new organism (**seen in algae**).
- **Budding**: A **small bud** grows on the parent and **detaches** to form a new organism (**seen in yeast**).

Quiz Questions

1. **Which organism reproduces by fragmentation?**
    - (A) Yeast
    - (B) Algae ✅
    - (C) Mushroom
    - (D) Bacteria
2. **What is the process by which yeast reproduces?**
    - (A) Fragmentation
    - (B) Binary fission
    - (C) Budding ✅
    - (D) Pollination
3. **What happens to the bud formed in yeast reproduction?**
    - (A) It dies off after a while
    - (B) It grows and detaches to form a new yeast cell ✅
    - (C) It breaks into multiple fragments
    - (D) It fuses with another yeast cell
4. **What happens during fragmentation in algae?**
    - (A) Algae cells grow bigger but do not multiply
    - (B) Algae break into fragments, and each fragment grows into a new organism ✅
    - (C) Algae reproduce by forming seeds
    - (D) Algae release spores into the air