

Respiration in Plants

Respiration

- **Respiration** is the process of taking in oxygen and releasing carbon dioxide. The process involves the consumption of oxygen and liberation of carbon dioxide and water.
- Two types- aerobic and anaerobic

Aerobic respiration

- Oxidation of food materials with the help of oxygen
- Yields 38 ATP

Steps in cellular respiration

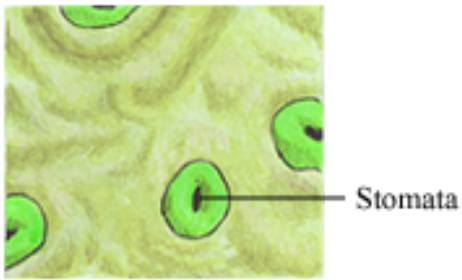
- **First step**- Breakdown of glucose (6C) into pyruvate (3C). It takes place in the cytoplasm
- **Second step**- Pyruvate is broken down into CO_2 and water. It takes place in mitochondria, energy is produced in the form of ATP.

Anaerobic respiration

- Oxidation of nutrients without utilizing molecular oxygen
- Yields 2 ATP
- **First step**- Glycolysis (occurs in the cytoplasm), 2 pyruvate produced
- **Second step**- Break down of pyruvic acid into ethanol and water and energy (in yeast) and lactic acid and energy (in muscle cells)

Respiration in Plants

- Plants respire through tiny pores present on their leaves surface called **stomata**. Oxygen enters the plant, while carbon dioxide leaves the plant through these pores.
- Roots of plants respire through air spaces present in the soil.



- **Respiration**

- All living organisms require a continuous supply of energy for carrying out various life activities.
- Cellular respiration is the process of releasing energy from the breakdown of organic substances.
- The released energy is stored in the form of ATP.
- ATP is the energy currency of cell.
- The process of cellular respiration occurs in cytoplasm and mitochondria.
- It involves the consumption of oxygen and liberation of CO₂ and water.

- **The equation of respiration is**

