

How the red mangrove roots are adapted to survive in submerged habitats

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Introduction Angiosperms are a class of flowering plant producing seeds enclosed within a fruit. They are the most dominant form of plant and they use their flowers for reproduction purposes (Hickey, Michael and Clive king 1998).

Besides the unique reproductive parts of angiosperms, other features that set out this class of plants is the unique mode of fertilization whereby many plants rely on insects and other agents of pollen dispersal to transfer pollen grains from one flower to another for successful pollination and subsequent fertilisation. Main body Red mangrove Rhizophora mangle is a special type hydrophilic plant inhabiting the saline, waterlogged soils of many coastal regions. Mangroves plant has a modified root system that enables the plant to survive in the saline water with its root completely submerged. It tend to produce a negatively geotropic and positively phototropic aerial root from their below ground roots. The distinct snorkel-like breathing roots that stick up above the mud are a key feature of the mangrove plant (Saenger, Peter 2002). The root system is spongy, long and possesses large number lenticels which are specialised breathing organs found on the outer surface of the pneumatophores.

The pneumatophores vary in size and they occur in different thickness and length depending on the conditions under which the tree grows. The lenticels on the aerial roots are of great importance to the mangrove plant survival because sufficient oxygen reaches the submerged underground root system through the lenticels hence facilitating the exchange of gases particularly oxygen required for respiration. The root also has wide range of aerenchyma cell to facilitate transport of oxygen within the plant. The pneumatophores <https://assignbuster.com/how-the-red-mangrove-roots-are-adapted-to-survive-in-submerged-habitats/>

usually extend several inches above the water or mud to allow entry of oxygen unlike the normal roots which are usually submerged below the ground (Hogarth, Peter J. 1999).

The plant therefore is able to obtain adequate oxygen to be used during the process of respiration which is critical for crop growth as it supplies the plant with energy to drive various biochemical and physiological processes. The mangrove plant is therefore adapted to live in these anaerobic conditions with the help of pneumatophores. Conclusion Flowering plants being the most dominant plants on earth they tend to manifest wide variation in their external structural morphology. They have a well developed root and shoot system modified to perform various functions of the plant. The mangrove plant has therefore modified its root system to enable it to survive in the waterlogged habitat by developing special root system known as pneumatophores which enables the plant to obtain oxygen from the air to the submerged roots.