

Welcome everyone, This module is for program Bachelor of Science subject Botany. Generic elective course for semester II, course code BOG102.

Coast title is coastal and mangrove ecology. Title of the unit is Biology of mangroves. Module name 'Pollination Biology'. Myself, Ashish Venkatesh Prabhugaonkar, Assistant Professor at DCT's Dhempe college of Arts and Science, Miramar, Panaji Goa.

At the end of this module we should be able to explain the pollination biology in various species of Mangroves.

Pollination is the transfer of pollen from a male part of a plant to a female part of a plant, later enabling fertilisation and the production of seeds. Pollination often occurs within a species. Pollinating agents are diverse such as: Insects : Entomophily Birds: Ornithophily Bats: Chiropterophily Water: Hydrophily Wind: Anemophily or Plants themselves (self-pollination). Mangrove plants with unique adaptations play a crucial role in sustaining life in mangrove and estuarine ecosystem. Pollination in mangroves is well studied. The success of sexual reproduction and subsequent population expansion in mangrove is linked to flowering timings, pollinators and tidal currents. Type of pollination in Viviparous and crypto-viviparous plants is self-compatible, self pollinating and also cross-pollinating In sunderbans, it has been reported that, *Avicennia marina*, *Sonneratia alba*, *Sonneratia apetala*, *Sonneratia caseolaris*, *Bruguiera sexangula*, *Excoecaria* sp. , *Rhizophora* sp., *Nypa fruticans*, *Suaeda maritima*, *Phoenix paludosa*, *Xylocarpus* sp., *Heritiera fomes* are the major honey producing mangrove plants and are visited by *Apis dorsata*. Chatterjee et al. (2010), documented the insect visitors of two major mangrove plants of Karnataka coast and have reported 6 species of hymenopteran pollinators of *Rhizophora mucronata* and 7 families of dipteran pollinators of *Avicennia officinalis*. Pollination mechanisms Genus *Rhizophora*: Has Ambophilous flowers which are both wind and insect pollinated. The trees are hermaphrodites, capable of self-pollination or often are wind pollinated. Flower mechanism facilitates wind pollination. Has filamentous hair's on petals. Anthers open first and release pollen on filaments. When flower opens petals are drawn out of it. Have pollens in large numbers and near absence of honey and fragrance. Genus *Avicennia*: The flower is open type and Produce nectar. It is open to all insects to visit, but primarily visited and pollinated by flies. Bending of stigma in later stage of pollination ensures self pollination, if insect pollination fails Implications for conservation: Pollination biology needs to be well understood to develop appropriate strategies for conservation of the biodiversity. Pollination systems are under increasing threat from anthropogenic activities and harmful pollutants. Conservation of pollinators would mean conservation of angiosperm diversity of the earth. This can be achieved through the conservation of their habitats and ensured safety against pollutants and hazardous chemicals.

These are the references for this module.

Thank you.