

## Phytoplankton in tropical mangrove estuaries: role and interdependency

### ABSTRACT

Mangrove estuaries are claimed to be productive and important breeding grounds for fishery resources. The role of particulate organic matter (POM), especially derived from decomposed litter detritus, is well documented in mangrove estuaries. However, being a primary producer, phytoplankton may play a significant role, which has not been well discussed, in governing the productivity of mangrove estuaries. Based on relevant published literature, this paper focuses on the role of phytoplankton in mangrove estuaries in the tropical coastal region and their interdependency. Analysis reveals that there are two-way interactions between phytoplankton and mangrove estuaries. The POM enriched water in mangrove estuaries acts as an ideal medium for phytoplankton succession. Simultaneously, diversified phytoplankton assemblages play a significant role in the food web of the estuarine mangrove ecosystem. Biomass and diversity of phytoplankton are influenced by nutrient and environmental parameters in mangrove estuaries and, concurrently, phytoplankton play a significant role in fish diversity and primary production in the same system. This review reveals that the inconsistent relationships between mangroves and coastal production could probably be due to the influence of seasonal changes. This paper unveils the latent potential and role of phytoplankton in tropical mangrove estuaries, which could be a source of thought for future research in this arena.

**Keyword:** Interdependency; Mangrove estuary; Phytoplankton; Tropical region