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Molecular imprint: An efficient marker towards sustainability assessment for some degrading mangroves of Indian Sundarbans**Sauren Das, Nirjhar Dasgpta and Anjan Hazra**
Indian Statistical Institute, India

Mangroves are the distinctive plant populations of tropical and sub-tropical coastlines have attracted considerable scientific attention during the last few decades. High salinity, periodical tidal influence, strong winds, high temperatures, high precipitation and extremely anaerobic soils are the typical physiognomies of this vegetation. They possess unique morphological and physiological adaptive features to cope with these extreme conditions. Mangrove forest provides supports significantly to the coastal inhabitants both productive and protective ways. Since industrial revolution due to elevated salinity caused by several environmental and anthropogenic liabilities it suffers much throughout the world. As the mangroves are assemblage of heterogeneous group of taxa, they exhibit differential magnitude of adaptability in relation to sustainability. Apart from the different morphological and physiological adaptive traits, wide genetic plasticity complies as a vital role towards sustainability. The present study describes the molecular (enzymes and genetic polymorphism) validation of four mangroves (*Bruguiera gymnorrhiza*, *Excoecaria agallocha*, *Heritiera fomes* and *Xylocarpus granatum*) from Indian Sundarbans of which first two are well-growing and rest are suffer much from enhanced substrate salinity since last three decades. Peroxidase and Superoxide Dismutase (in different isoforms) are antioxidant enzymes subsidizing combat forces against ROS-damaged crisis of plant cell in traumatic substrate. Results were both the enzymes show excess isoforms in *Bruguiera* and *Excoecaria* than the other two. It is also presumed that genetic diversity is allied to morphological variance and survival of the plants. DNA polymorphic experiments with molecular markers (RAPD and ISSR) also revealed that percent DNA polymorphism are higher in the first two taxa over *Heritiera* and *Xylocarpus*. Enzyme and marker assisted molecular study might be pointed out towards the differential sustainability among the studied taxa in the presently elevated saline regime of Sundarbans mangrove swamps.

hamnasohail60@gmail.com

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