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Dr. Sujoy Kumar Biswas

Department of Civil Planning
and Architecture, Techno India
University, West Bengal, India

Dr. Sufia Zaman

Head, Department of
Oceanography, Techno India
University, West Bengal, India

Manju Das

Research Scholar, Department of
Oceanography, Techno India
University, West Bengal, India

Soil of Sundarban delta is rich in sodium, potassium, silicate and phosphorus

Dr. Sujoy Kumar Biswas, Dr. Sufia Zaman and Manju Das

Abstract

Soil of Sundarban delta is rich in elements. Due to geographical position soil of Mangrove is very rich in Na, K, SiO₃, P (Mitra *et al* 2013). Sea is nearby and rivers fall in Bay-of-Bengal. 9 rivers like Hooghly, Matla, Raimongal, Ichhamoti, Vidyadhari, Gosaba, Canning, Saptamukhi and Herobhanga meets Delta. Mangrove soil has Organic Carbon, Na, K, SiO₄ & P. Sea water is rich in NaCl, K, P and other trace elements. Due to merging of land and water (rivers and sea) salt tolerant plants can thrive well over there. *A. alba*, *S. apetala*, *E. agallocha*, and other plants grow with inundated water. Mostly muddy and acidic water near mangrove. 100 km. stretches of Hooghly river which faces high tide from Bay-of-Bengal are rich in fish fauna. Kolkata city is hardly 100 km. away from Bay- of -Bengal.

Keywords: Sundarban delta, *A. alba*, *S. apetala*, *E. agallocha*, Na, K, Cl, SiO₄, P

Introduction

Soil content of mangrove is rich in Clay, Organic Carbon, Sodium Chloride, Potassium, Silicate, Boron, Copper, Zinc and Ferrous.

Mangrove soil near sea is bit acidic in Sundarban delta. Due to rich source of flora in islands, river water and ponds in delta region are spoiled due to leaf litter. Microbial growth in water turns it acidic. Less urbanization in those remote places make water acidic (pH <7). Soil samples of different regions in western sector and eastern sector shows some variation. Due to high pollution in urban sector i.e western sector in Sundarban delta is rich in Organic Carbon. Dust and smoke in air gradually percolate in mangrove soil to add Carbon. Whereas in eastern sector due to Vidyadhari channel it has less supply of fresh water. Mangrove soil over there has less organic Carbon. When you dig pH level is gradually increasing (5.5-7.9) and salinity is gradually decreasing (32 PSU to 30 PSU).

People in coastal belt lives with timber, medicines, honey, fishery, wood and cultivation of rice and sunflower.

Materials and Method

Due to non- usage of transportation, air of Sundarban delta is Carbon free now-a-days. Fuel burning is minimum in West Bengal due to Lock down in different sector. Still school, colleges and Universities are closed in West Bengal. Diamond Harbour, Kakdwip and Namkhana near Bakkhali is less crowded. Fishery sector too is less exploited. River water (Hooghly) became less polluted as dust, smoke and usage of hotels and restaurants are minimum now. Bring soil from river bank (Western sector) and tested for Na, K, Cl, Fe and SiO₄.

Result

Laboratory findings shows Na>K>Cl>Fe>P>SiO₄. It proves soil is rich in salinity and Silicate. Due to different industries in both banks of river Hooghly Ferric chloride (FeCl₃), Silicate and Potassium hydroxide (KOH) also available in soil. Due to lock down of different sectors like Tourism, Transportation, Netting from river to catch Fishes and factories like food, fertilizer, Agro- industries, Batteries, Jewellers and Paint and Varnishes pollution level in water and soil near river is less than before. From March 2020 to till date i.e August 20th 2021 soil and water is improving with less mixture of pollutants.

Corresponding Author:

Dr. Sujoy Kumar Biswas

Department of Civil Planning
and Architecture, Techno India
University, West Bengal, India

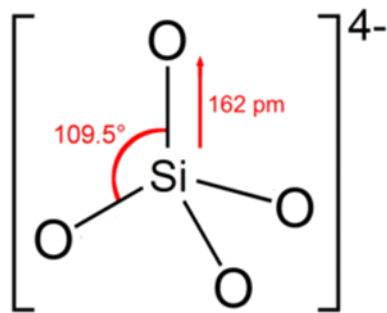


Fig 1: Configuration of Silicate SiO₄ (Source Wikipedia)



Fig 1: River Hooghly near western sector (Mangrove soil beside river shows above mentioned data)



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