



Barrackpore Rastraguru Surendranath College

(With Autonomous Post Graduate Courses)

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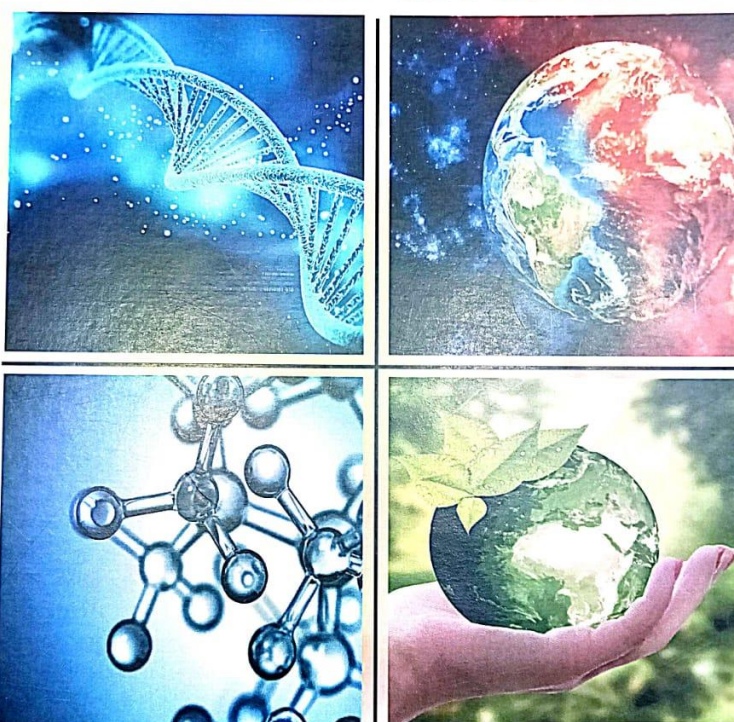
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Collaborative Research of Dr. Monojit Ray: Chapter Published in Edited Volume

RECENT TRENDS IN ENVIRONMENT, CLIMATE CHANGE, PHYSICAL AND LIFE SCIENCES



Edited by:

Dr. Tridib Bandopadhyay • Dr. Kamal Lochan Barik
Dr. Wahied Khawar Balwan • Dr. Madhulaxmi Sharma



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© : Scientific and Environmental Research Institute (SERI),
Kolkata

First Edition: September 2021

ISBN: 978-81-89140-22-9

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Published By:

Syed Mansoor

Sparrow Publication

2, Beniapukur Lane

Kolkata- 700014

Email: sparrowpublication@gmail.com

Website: www.sparrowpublication.com

Print, Composed and Setting By:

SINDHUSARASH

Kolkata- 700118

Email : sindhusarash@gmail.com

Price: INR 3,500



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Assessment of Drinking Water Quality of Different Municipal Supply Water of North 24 Parganas, West Bengal, India: A Comparative Study

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Abstract

Clean and safe water is essential and significant for our daily life. With unprecedented increase in population and development of industrialization, municipal supplied water quality is being gradually endangered. Municipal supplied water playing a major role for drinking purpose in many parts of urban areas of West Bengal, India. In this present study the quality of the municipal drinking water samples of fourteen municipal areas within the North 24 parganas district of West Bengal have been assessed. We have measured pH, TDS (Total dissolved solid), salinity, conductance, sodium ion concentration, potassium ion concentration and pesticide residue concentration. Investigated water samples showed moderate salinity values and low to high ranges of conductance values. We have also come across high sodium ion content in three municipality supply water, whereas we got moderately low concentration of potassium ion in these drinking water samples. Several water samples showed relatively high pH, another showed very high TDS value, while eight municipal supply water showed moderate TDS value. During the study of seventeen pesticide residues in these municipal drinking water samples, no sample water contains pesticide concentration higher than the BIS (Bureau of Indian Standards) limit.

Keywords: Municipal water, pH, TDS, Salinity, Pesticide residue

INTRODUCTION

Access to clean and safe municipality supply water is very significant and fundamental for our everyday life. This water is used mainly for drinking and all other household purposes by the people. So, the quality of such water has immense importance to us [1, 2]. Near about 1.1 billion people in the world or 15% of the global population is consuming unsafe water [3]. In many countries drinking water does not meet WHO (World Health Organization) standards [4, 5]. In every year near about 3.1% deaths take place due to poor and unhygienic water [6]. For water pH denoted acidic character present, TDS denotes total dissolved solid present, salinity denotes amount of salt present and conductance denotes population of ions present [7,8].

Pesticides are basically used to shield the plants followed by increasing agricultural production and to protect human health [9]. Previous studies showed that a small percentage of pesticide application is going to the target pest, but maximum are going to the environment [10]. However, heavy pesticide use can cause a potential public health hazard [11]. Long-term exposure to pesticide residue may lead to various diseases like cancer, asthma, allergies as well as neurotoxic diseases [12]. Due to long residence time in water of few pesticide residues like, lindane, HCH, endosulfan, aldrin, etc. we have a huge concern to scrutinize these compounds in municipal drinking water. In this perspective we had determined the contamination level of pesticide residue in municipal drinking water.