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Pollution of Water bodies – A study from flood affected areas in Ranni and Seasonal water quality analysis of Pampa river from Erumely (Kottayam District) and Ranni (Pathanamthitta District), Kerala, India

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Abstract:

Physical and chemical parameters degrade water causing health issues in living organisms. The present study examines the variation in these parameters in Pampa River at Ranny. Water were collected from five different sources at Mamukku,Ranny and tested at CEPCI Kollam. The study showed that the water quality at Ranny is fit for domestic use in terms of heavy metals. But BOD levels were elevated due to the pressure of organic waste that could have been entered due to the presence of chemical and sewage wastes in water bodies at Ranny. Among the five heavy metals (Cadmium, Chromium, Lead, Mercury and Copper) Copper and Chromium were below the standard limit and the other three heavy metals Lead, Cadmium and Mercury was below detected level.The regular water treatment methods adopted in the area due to recent flood may be the result of water quality in Ranny with respect to heavy metals. The physical parameters like pH of water sources in Ranny is normal except well water which slightly acidic due to chemicals runoff and wastewater discharge. The TDS levels are normal in all five sources but BOD levels are elevated due to the presence of organic wastes entered from chemical and sewage disposal in water bodies. Water samples from Pampa river of places like Ranni, Erumely, Vadasserikara, Pothamon and Edappavoor were collected seasonally (Sabarimala - pilgrimage season) i.e., during November-December, 2019 and off season January – February, 2020. The analysis of Biological and Physio-chemical parameters like E.Coli, pH, Turbidity, BOD, Chloride, Sulphate and Iron reveals that the water bodies were affected by anthropogenic and other activities during off - season (January – February,2020) than pilgrimage season (November – December,2019). The results revealed that the studied sites showed more pollution with E.coli during January – February, 2020 i.e., after pilgrimage season, especially Erumely than Ranni. And this may be due to the unwanted disposal off waste by the pilgrimages.

Keywords: Heavy metals, Water quality, Physico - chemical analysis, Ranny.

Biography:

Currently working as Assistant Professor, in the Department of Zoology at St.Thomas College, Ranni, Kerala, India under M.G University, Kerala, from 2nd August,2004 to till date. Worked as Project Fellow in University Grants Commission – Major research Project entitled 'Health Risk Assessment Studies on the impact of Heavy Metal Contamination with special reference to Cadmium and Lead" at Salim Ali School of Ecology and Environmental sciences, Pondicherry University, Pondicherry, India from Dec, 1998 to Dec, 2001.Editor for the book "Research Methodology"- study materal prepared by Zoological Society of Kerala, November, 2018.Other Achievement:Received Young Scientist Award from National Academy for Environmental Society (NESA) for the best paper presentation during 14th National Conference, 14th –16th Dec, 2000.

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