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PERIODIC VARIANCE OF COD OF GOMATI RIVER ON PASSING OUT FROM JAUNPUR URBAN SEGMENT AND ITS PROSPECTS IN HUMAN HEALTH

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COD abbreviated as chemical oxygen demand of a water sample. It is an important water quality parameter. A good quality water is expected to have low COD and its quality declines with rise of COD. As the water sample contains more oxidasable matter it requires more oxygen to get oxidised, resulting into the thirst of oxygen. It leads to a high demand of oxygen that raises up the COD value of water. Thus COD lowers down DO of water and hence deteriorates its quality. Organic matter, anions and metals present in water lower down its COD. For aquatics dissolved oxygen in water sustains life to them. Rinus in general when pass through high populated segments suffers a hike of COD. Thus for assessment of water quality its COD measurement in an important objectivity.

INTRODUCTION

COD is used as a measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant. For samples from a specific sources, COD can be related empirically to BOD, organic carbon or organic matter. The test is useful for monitoring and control after correlation has been established. Oxidation of most organic compounds is 95 to 100% of the theoretical value. Ammonia present either in the waste or liberated from nitrogen containing organic matter is not oxidised in the absence of significant concentration of free chloride ions (19^{th} Ed. standard methods 1995). COD is used as an indicator of Natural Organic Matter (NMO). The COD refers to the oxygen used up in converting organic wastes to inorganic materials. When the COD and BOD levels begin to overtake the DO levels then rivers begin to die. As per WHO standard for COD test the maximum value should be 50 mg/l.

Scientists in the world were actively engaged in solving the environmental problems. The environment has highly affected the public health. The problem was so serious that legal steps were under taken at the international levels. Since water is the most abundant valuable God-gift on the earth and rivers are the most convenient reservoirs, the majority of work an pollution began in the past and yet continues. Some leading countries have published the limitations of pollutants in different reservoirs for different uses. Industries which are the index of national development has been warmed for causing pollution to rivers and other waster reservoirs.

METHODS & MATERIALS

For the measurement of COD of water at the entry and exit points of Gomati river while passing out from Jaunpur urban segment every month usual procedure was adopted and the average COD variance has been calculated. The average variance of COD per year has been calculated and tabulated.

Table 1. Periodic Variance of COD (mg L^{-1}) of Gomati river during 1996-2016.

Year	Variance	Variance per year
1996	33.433	-
2000	61.635	15.4088
2004	90.341	22.5853
2008	120.574	30.1435
2012	150.892	37.723
2016	181.645	45.4113
2026	568.524	56.8524
2036	697.42	69.742
2046	748.20	74.820
2056	905.41	90.541

RESULTS AND DISCUSSION

On scrutinizing the variance magnitudes per year it is observed that the COD is successively increasing. This is because of pouring of organic & faecal matter into the river whose magnitude is directly related to the rising diversity of population and mushrooming industrialization. The observed phenomenon and the variance behaviour is in accordance with the established trends. The situation is not controlled effectively, it may lead to a disorstrous situation which is quite clear from the calculated value on speculation till 2056.

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