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# Impact of Idol immersion (Murti Visharjan) on the Water quality of Wainganga river, Gondia District, Maharashtra.

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## Abstract:-

Wainganga is the largest river passes through Gondia district. It shares its about 55-60km length with Gondia district. This river is used for economical and some ritual purposes. In Gondia district three main festivals are celebrated where Idols immersion is common. These festivals are Krishna Janmashtami, Ganesh Chaturthi and Durga Puja (Navaratri). This study relates to analyse the impact of such idol immersion on the Wainganga river, passes through or along the Gondia district. For analysing physicochemical parameters, samples were collected from immersion site before a day, a day after and few days after immersion (15days after Krishna Janmashtami, 20 Days after Ganesh immersion and 30 days after Durga Immersion). The noticeable changes were recorded in physicochemical parameters, like increase in pH, Temperature, free CO<sub>2</sub>, Chemical oxygen demand (C.O.D), Total Hardness, Alkalinity and Oil content, while decrease in Dissolved Oxygen and Biological oxygen demand (B.O.D.). This directly indicate such religious activities are responsible for water pollution of river. Repeated immersion at same place make water more polluted.

## Introduction:-

Water Pollution is any unwanted change in its property and make it unsuitable for living organisms directly or indirectly. Humans activity is one of them which make water unsuitable. Among these activities, ritual activity is one of them (Shukla 2004). Idol immersion causes water pollution ( Bajpai *et al.* 2002; Vyas *et al.* 2006; Such effect of idol immersion from Mumbai and surrounding area was studied by Rupinder Kaur (2012).

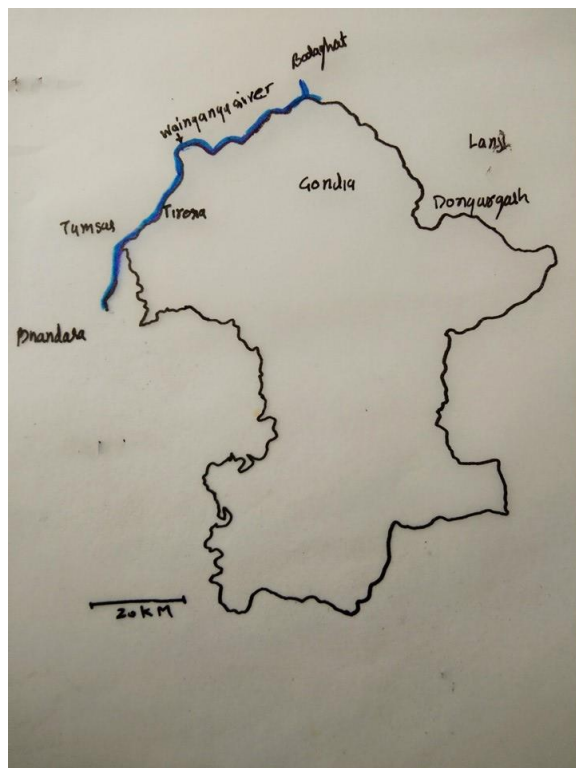


Fig:- Map of Gondia district showing Wainganga river collection sites

maintain same collection time in the morning hours.

All remains after ritual activities during above festivals are put along with the idol into the water. This make dumping area polluted. Such materials are rich in organic and inorganic content. This may include some non-biodegradable materials and such substances are more harmful to water ecosystems. Krishna janmashtami is the festival of one day only and in small villages maximum people bring idols, which may be made from Plaster of Paris or clay. Next day all idols from villages has taken and immersed into water body along with ritual remains.

In Ganesh Chaturthi, people bring an idol of Ganesha. They worship it for ten days and after ten days they immersed it into water.

Durga puja is a celebration of Nine days of Navaratri. In this festival idols of Devi Durga and Devi Sharada are placed by many social groups. After ninth day idols are immersed into waterbody along with ritual remains.

## Material and Method: -

To study the impact of above three activities we visit the spot before a day of idol immersion, after a day of immersion and later before next immersion or 30 days, whichever less after immersion. Water samples were collected in BOD bottles for chemical analysis, while physical parameters are recorded on the spot. We tried to

Physiochemical parameters are analysed using standard procedure given in APHA (2005) American Public Health Association (Standard methods for examination of water and waste water),

For determining pH of water, digital pH meter was used (APHA 2005) on the spot early in the morning hours.

For obtaining temperature of water, digital thermometer was used.

Dissolved oxygen was calculated by titrimetric method given by Trivedi and Goel 1986.

Biological oxygen demand is inversely proportional to dissolve oxygen. BOD indicate the amount of organic matter present in water.

Total hardness was calculated by using EDTA titration method given by APHA 2005.

Total alkalinity was calculated by using Methyl orange as a reagent for titration.

### Result and discussion: -

Many workers work on the effect of idol immersion and water pollution. But no one till date tries to analyse the effect of repeated immersion at a single water body. Festivals are for peace and fun, but some ritual processes like idol immersion convert peace and fun in to very dangerous condition called pollution. When such processes repeat many times , it becomes critical pollution issue.

The noticeable changes were recorded in physicochemical parameters, like increase in pH, Temperature, free CO<sub>2</sub>, Chemical oxygen demand (C.O.D), Total Hardness, Alkalinity and Oil content, while decrease in Dissolved Oxygen and Biological oxygen demand (B.O.D.) this directly indicate such religious activities are responsible for water pollution of river, and repeated immersion at same place make water more polluted.

The minimum pH was recorded 6.9 to maximum 9.2, Temperature varies in between 75 to 87 °F, Free CO<sub>2</sub> concentration ranges in between 11.16 mg/litre to 19.62 mg/litre. Dissolve oxygen increases to maximum 9.0 mg/litre and at its lower value at 4.0 mg/litre. Biological oxygen demand raises to 4.6 mg/litre from 1.0 mg/litre. Chemical oxygen demand shows lowest value of 1.301 mg/litre and highest 3.101. Free Carbon dioxide level of water found before immersion and its lowest value was 11.16 mg/litre and it raises to maximum after immersion to 19.62 mg/litre. Hardness and alkalinity show maximum value after immersion it reaches to 230 mg/litre and 179.6 mg/litre respectively. While before and after few days of immersion it decreases its least value was 112 mg/litre and 133.2 mg/litre respectively for Hardness and alkalinity. Oil level in water is negligible in river water but after immersion of idols and its ritual remains the level of oil content increases and reaches up to 2.8 mg/litre.

Idol immersion impact on water quality was studied by Dhote S et al. 2001, Dhote and Dixit 2011, Malik G M et al. 2012, Variya Rajesh 2010 and others. Many workers work on Tapi river passes along Gujrat, Mohini *et al.* (1991) is one of them work on Tapi river in Surat and record effect of idol immersion. Malik *et al.* 2010 and Malik *et al.* 2012 worked on immersion impact of idols on the physiochemical parameters of South Gujarat India. Ujjania and Patel (2012) also work on Impact of Ganesha immersion on water quality of Tapi river. They all notice the increase in Hardness and alkalinity of water of river.

**Table: 1- Observation for Janmashtami Immersion**

Parameters	A day before immersion						A day after immersion						15 days after immersion					
	1.	2.	3.	4.	5.	Mean	1.	2.	3.	4.	5.	Mean	1	2.	3.	4.	5.	Mean
pH	6.9	7.7	7.3	7.2	7.0	7.22	7.6	8.3	8.2	7.9	7.8	7.96	7.0	7.8	7.5	7.3	7.1	7.34
Temperature °F	75	78	79	78	77	77.4	79	81	83	82	81	81.2	77	80	81	80	78	79.2
D.O. mg/l	6.0	6.2	6.2	6.1	6.1	6.12	4.0	4.3	4.4	4.3	4.0	4.2	4.5	4.6	5.6	4.8	5.1	4.92
B.O.D. mg/l	2.1	1.9	1.8	1.8	1.9	1.9	1.6	1.2	1.0	1.1	1.2	1.22	1.9	1.7	1.6	1.6	1.8	1.72
C.O.D.	1.301	1.520	1.645	1.621	1.495	1.517	1.9.4	2.032	2.106	2.098	2.010	2.062	1.502	1.895	1.780	1.820	1.695	1.739
Free CO2 mg/l	11.16	12.01	12.21	12.0	11.92	11.86	14.3	15.3	15.8	15.7	14.9	15.2	12.60	12.80	13.0	13.16	12.95	12.902
Hardness mg/l	112	116	120	118	114	116	173	180	178	176	174	176.2	148	150	152	150	146	149.2
Alkalinity mg/l	135.1	134.1	133.5	133.2	134.6	134.1	160.1	170.4	174.5	172.3	170.0	169.46	140.2	142.5	144.5	142.6	141.2	142.2
Oil mg/l	00	0.1	00	00	00	0.02	0.6	0.8	0.9	0.8	1.0	0.82	0.2	0.3	0.3	0.4	0.4	0.32

**Table:2 - Observation for Ganesh Immersion**

Parameters	A day before immersion						A day after immersion						20 days after immersion					
	1.	2.	3.	4.	5.	Mean	1.	2.	3.	4.	5.	Mean	1.	2.	3.	4.	5.	Mean
pH	7.0	7.8	7.5	7.3	7.1	7.34	8.4	8.8	8.1	8.2	8.1	8.32	7.0	7.6	7.3	7.1	6.9	7.18
Temperature °F	77	80	81	80	78	79.2	81	83	86	84	83	83.4	76	80	83	81	79	79.8
D.O. mg/l	5.5	5.6	6.6	5.8	6.2	5.94	4.8	4.9	5.1	5.2	4.8	4.96	5.1	5.3	6.0	5.6	5.8	5.56
B.O.D. mg/l	3.9	3.7	3.6	3.6	3.8	3.72	2.1	2.2	1.9	1.9	2.0	2.02	3.5	3.6	3.4	3.3	3.5	3.46
C.O.D. mg/l	1.502	1.891	1.780	1.820	1.690	1.737	2.136	2.325	2.301	2.105	2.165	2.207	1.618	1.981	1.880	1.901	1.750	1.826
Free CO2 mg/l	12.60	12.80	13.0	13.16	12.9	12.892	16.8	16.9	17.6	17.8	16.3	17.08	13.70	13.90	13.98	13.75	13.90	13.846
Hardness mg/l	148	150	152	150	146	149.2	188	192	191	190	189	190	140	144	158	135	144	144.2
Alkalinity mg/l	140.2	142.3	144.5	142.6	141.2	142.16	164.2	171.8	176.3	174.8	171.6	171.74	151.1	142.4	146.1	147.2	148.0	146.96
Oil mg/l	0.2	0.3	0.3	0.4	0.4	0.32	1.2	1.2	1.4	1.3	1.4	1.3	0.3	0.4	0.4	0.5	0.5	0.42

**Table: 3 - Observation for Devi Durga Immersion**

Parameters	A day before immersion						A day after immersion						A month after immersion					
	1.	2.	3.	4.	5.	Mean	1.	2.	3.	4.	5.	Mean	1.	2.	3.	4.	5.	Mean
pH	7.0	7.6	7.3	7.1	6.9	7.18	8.6	9.2	8.8	8.7	8.6	8.78	6.7	7.2	7.1	6.9	6.4	6.86
Temperature °F	76	80	83	81	79	79.8	84	86	87	85	84	85.2	71	80	81	76	78	77.2
D.O. mg/l	6.1	6.3	9.0	6.6	6.8	6.5	4.9	5.1	5.6	6.0	5.6	5.44	6.3	6.4	7.6	6.9	7.1	6.86
B.O.D. mg/l	4.5	4.6	4.4	4.3	4.5	4.46	2.9	3.1	2.7	2.8	2.9	2.88	4.1	3.8	3.7	3.7	3.9	3.84
C.O.D. mg/l	1.618	1.982	1.880	1.9.5	1.750	1.808	2.620	2.965	3.101	2.985	2.704	2.985	1.461	1.672	1.785	1.860	1.585	1.673
Free CO <sub>2</sub> mg/l	13.70	13.90	13.98	13.75	13.95	13.856	18.20	19.62	18.90	17.86	18.80	18.676	11.50	12.48	12.90	12.61	12.0	12.298
Hardness mg/l	140	144	158	135	144	144.2	210	226	230	228	220	224.8	115	118	122	124	120	119.8
Alkalinity mg/l	151.1	142.4	146.1	147.2	148.0	146.96	169.0	173.1	179.6	176.8	173.6	174.42	136.2	135.3	135.1	138.0	136.0	136.12
Oil mg/l	0.3	0.4	0.4	0.5	0.5	0.42	2.1	2.6	2.8	2.8	2.6	2.58	0.2	0.5	0.4	0.7	0.3	0.42

**Table:4- Statistical elaboration of physiochemical parameters of river**

Statistical value →	Mean	Mode	Median	Minimum	Maximum	Range
Physiochemical parameter ↓						
pH	7.6112	7.3&7.1	7.42	6.4	9.2	2.8
Temperature	80.4145	81	80	71	87	16
D.O.	5.6644	5.6	5.6	4.0	9.0	5.0
B.O.D.	2.8019	1.9	2.89	1.0	4.6	3.6
C.O.D.	1.9625	----	1.87	1.301	3.101	1.8
Free CO <sub>2</sub>	14.3722	13.90	13.8.3	11.16	19.62	8.46
Hardness	157.3775	144 & 150	149.6074	112	230	118
Alkalinity	152.0852	-----	146.1	133.2	174.6	46.4
Oil	0.7538	0.4	0.42	00	2.8	2.8

**Conclusion: -**

Idols of gods are made from biodegradable or non-biodegradable material which on immersion make water polluted. Water of river is more fragile and easily change its properties. These changes are remains only for few days or month, if no repeated immersion or dumping done at same place. As river is continuously floating, pollution not remains as it is on same site for long duration. But when such activities are carried in stagnant water then more harm cause to water quality and ultimately the ecosystem get affected.

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**References: -**

1. APHA 2005. Standard methods for examination of water and waste water. American Public Health Association, Washington, D.C.
2. Bajpai A, Pani S, Jain R K, Mishra S M, 2002. Heavy metal contamination through Idol immersion in a tropical lake. Ecological environment Conservation Org. 8(2): 153-159.
3. Bhat NA, Wanganco R, Ashwini Wanganco.2012. pollution status of Bhoj Wetland before and after immersion of idols.South Asian Journal of Tourism Heritage.5(1):153-156.
4. Dhote S, Dixit S ,2011. Hydro chemical changes in two eutrophic lakes of central India after immersion of Durga and Ganesh Idol. research journal of chemical Science1(1): 38-45.
5. Dhote S, Varghese B, Mishra S M, 2001. Impact of idol immersion on water quality of Twin Lake of Bhopal.Indian Journal of Environment protection 21: 998-1005.
6. Malik G M, Raval V H, ZadaFiya S K, Patel AV.2012. Idol Immersion and Physico-chemical Properties of South Gujarat rivers,India. Research Journal Chemical Science. 2(3):21-25.
7. Malik GM, Raval VH, Zadafiya SK, Patel AV. 2010. Idol Immersion and Physico Chemical properties of South Gujarat rivers India.Curr World Environment Journal 5(1):173-176.
8. Mohini G., Ekhalak A, Ranjana S. 1991. Pollution load assessment of Tapi river During ganesh festival India. Octa J. Environment Research 2(4):310-313.
9. Rupinder Kaur 2012.effect of idol immersion on marine and fresh water bodies. Advances in Applied science Research.3: 1905-1909.
10. Shukla, S S. 2004. Effect of public awareness campaign in mitigating impact of religious activities on Bhopal Lakes. Global biodiversity forum (2): 17
11. Trivedi PK, Goel RK 1986. Chemical and biological methods water pollution studies. Environmental Publication,Karal,India.
12. Ujjania NC and Mitali S Patel, 2012. Ganesh idol immersion and its impact on Water quality of Tapi River,India. Journal of Environmental science and water Resources 1(9). 231-235.
13. Variya Rajesh, 2010. Impact of ganesh Immersion on tapi river at Umara Ovara.M.Sc. dissertation, Veer Narmad South Gujarat University, Surat.
14. Vyas Anju,Mishra DD,Bajapai A, Dixit S,Verma N, 2006. Environment Impact of Idol immersion Activity Lakes of Bhopal,India. Asian Journal of Experimental Science, 20(2):289-296.