

# Effect of idol immersion on some water bodies of Dhar town, M.P.

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## SUMMARY

The study was conducted on physico-chemical characteristics of some selected ponds at Dhar town. The sampling points were selected on the basis of idol immersion sites. Sampling was done before and after the idol immersion. Results showed variation in some parameters which produced pollution in such water bodies and harmful effects on animals and fishes. This type of study will be helpful in administration of water pollution abatement and protection of beautiful water bodies of Dhar town.

## Key words :

Idol, Immersion, Abatement, Water bodies

Our earth is unique and provides an environment for the evolution of life and natural resources for its maintenance. But due to man made activities these resources are consumed and regularly deteriorated. Water is one of the most important resource on earth which is direct example of this deterioration. Water pollution is most dangerous environmental pollution. It has many causes, which include the immersion of idols and worship waste materials also.

Immersion of idols of lord Ganesha is carried out every year on the Ananta Chaturdashi day in the month of Bhadrapada *i.e.* either in August or September, after ten days of worship and Navratri Mahotsav in October or November month, after nine days of worship. Thousands of these idols are immersed in different water bodies such as lakes, reservoirs, ponds, rivers and canals around different towns and cities.

These idols are made up of plaster of paris, clay and cloth supported by small iron rods and coloured with different types of paints such as varnish and water colours, when immersed these coloured chemicals are dissolved slowly leading to significant alteration in the water. Similarly idols are also immersed in the Dhar town in different ponds, wells and reservoirs etc.

## MATERIALS AND METHODS

The Dhar district is situated between the parallels of 22° 1' 14" and 23° 9' 49" North and the meridians of 44° 28' 27" and 75° 42' 43" East. Geographically it is divided by Vindhya hills in two parts of northern plateau of Malwa and southern plateau of Nimar.

An investigation was carried out to find out

the effects of immersion of Ganesha idols on water quality of 3 ponds *i.e.* Munjsagar pond, Devisagar pond and Natnagra pond. Collecting and analyzing the water samples from the immersion sites of the ponds before and after ten days of the events for two years (2006 and 2007) with following the standard methods of APHA (1998) and Trivedi and Goel (1986).

## RESULTS AND DISCUSSION

The physico-chemical parameters is given in Table 1.

The colour of water was changed after the immersion of idols. The pH was slightly alkaline but it was in desirable limit of BIS.

The turbidity value of these ponds became higher due to immersion of idols and some other worship waste materials immersed with them. Due to this waste material disposal, the turbidity was found higher (Rohella *et al.*, 2001).

All the ponds showed higher conductivity and TDS values after the immersion of idols, because solid content of water increased higher content of solid with inferior potability, which may induce an unfavorable physiological reaction in the transient consumers.

The total hardness of all the ponds found increased significantly after the immersion of idols because calcium and magnesium increased significantly in the pond water after idol immersion. In some ponds it was above the limits of permissible standards (Mahapatro *et al.*, 2000). Though the calcium and magnesium are non poisonous, but they increase only the hardness of water,

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which may adversely affect human health. Hardness of water was almost unchanged even after the treatment unless method of water softening is employed additionally. It is uneconomical in cooking of food as it requires extra fuel consumption and washing of cloth requires excessive soap consumption. The hard water also causes scale formation on equipment etc. It creates digestive problems and loss of hair. It is in agreement with the study of Jain *et al.* (1997).

The average concentration of heavy metals especially arsenic, iron, lead and mercury was also increased considerably in all pond waters compared to the specification of highest desirable limits as set by BIS and ICMR standards (Table 1). Excess of these elements causes skin diseases. The concentration of iron in the pond water also changed but it was below the limit of standards (Panda and Singh, 1996).

The lead and mercury are the potentially noxious heavy metals, which increased many folds in the water due to the idol immersion, compared to the specifications of highest desirable limits of BIS and ICMR standards.

It was observed that the concentration of mercury, the causative chemical of the famous “Minamata” disease of Japan after the immersion of idol, its concentration increased more than 60 to 70 times in the pond water.

The heavy metals are known to be persistent in the aquatic environment and gradually accumulate and magnify through the process known as bioaccumulation and biomagnifications, while they move up in the food chain. Thus, lead and mercury may magnify in their concentration at different tropic levels, including in fishes

and birds inhabiting the pond, which finally reach the humans through food. Organic compounds of mercury, for example methyl mercury when it enters the human body, concentrates in the brain and destroys the brain cells, damaging the central nervous system and also causes corrosion and ulceration of the digestive tract. Thus, people consuming contaminated fish caught from the pond over a period of time may get affected with mercury poisoning.

Waste worship material like flowers, Kumkum and Panchamrata also create contamination of water. It can be utilized in the formation of methane gas. Energy production by this gas solves the electricity problem. On the basis of above discussion we can conclude that the water of Devi Sagar pond and Munj Sagar pond sites were more polluted because more idols were immersed in these ponds. Natnagra pond is some away from the town area so less idols are immersed, that cause less polluted water.

#### Suggestion:

Following suggestion are made looking into the environmental protection of the ponds:

- Strict implementation of central and state level legislations, they should conduct environmental awareness programmes, may be through different media particularly before the “Vinayak Chauterdarshi”, (Ganesh Festival) and “Durga puja (Navratri Festivals) days.
- To educate the public of the town and make them aware of the harmful environmental effects of immersion of idols in the pond, persuade them not to use these ponds

**Table 1 : Phisco-chemical characteristics of pond water**

Sr. No.	Parameters	BIS and ICMR standards for highest desirable limits	Devi Sagar pond				Munj Sagar pond				Natnagra pond			
			Before immersion of idols		After immersions of idols		Before immersion of idols		After immersions of idols		Before immersion of idols		After immersions of idols	
			2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
1.	pH	6.5-7.5	8.52	8.34	8.6	8.56	8.3	8.34	8.48	8.58	7.6	7.96	7.69	7.91
2.	Turbidity	10	18.4	20.4	26.6	29.3	42.6	44.2	45.3	45.8	13.4	18.1	18.4	19.2
3.	*Conductivity	2000	263	268	345	368	323	334	517	520	180	188	198	196
4.	T.D.S.	200	16	168	220	228	200	210	330	310	110	118	130	134
5.	Calcium	75	48.8	46.5	80.6	83.4	43.4	48.8	73.6	75.3	45.3	47.7	67.6	69.4
6.	Magenesium	30	8.6	7.9	12.4	16.8	7.4	7.9	11.4	10.9	6.6	6.9	10.1	9.8
7.	Total hardness	200	57.4	55.4	92	100	50.8	56.7	85	86.2	519	546	77.7	79.2
8.	Arsenic	0.05	0.12	0.14	0.56	0.5	0.12	0.13	0.52	0.54	0.1	0.11	0.49	0.51
9.	Iron	0.3	0.13	0.14	0.24	0.25	0.12	0.12	0.24	0.25	0.11	0.12	0.23	0.24
10.	Lead	0.1	0.36	0.32	0.56	0.53	0.34	0.33	0.5	0.52	0.35	0.34	0.49	0.47
11.	Mercury	0.001	0.36	0.39	0.63	0.68	0.3	0.29	0.71	0.69	0.26	0.29	0.61	0.64

\*µ Mhos

All parameters -Mg/l

for immersion of idols.

– For the preparation of idols natural soils should be used.

Social organizations should come forward and collect all the idols after the completion of festivals and immerse them in to deep in the earth.

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