

RESEARCH PAPER:

## Seasonal variation in different physico- chemical parameters of Pariyej Lake, Kheda district Gujarat

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### SUMMARY

Physico – chemical parameters of Pariyej lake were studied and analysed, during January 2008 to December 2008. The water parameters such as temperature, pH, DO, BOD, COD, Total alkalinity, Ca – Hardness, Mg – Hardness, Chloride, Sulphate, Phosphate, Nitrate and TDS of water. Our present investigation shows that all the above mention parameters are within the permissible limit of WHO standards. So, its good indicator for drinking, fisheries and growth for the phytoplankton and zooplankton.

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### Key words :

Physico – chemical parameters, Pariyej lake, Dissolved oxygen, Water quality.

Water is one of the most important factor for every living organism on this planet. Water is generally used for drinking and other domestic purposes in this area. The use of fertilizers and pesticides, manure, lime, specific tank refuse dump, etc. are main sources of water pollution. (Hamilton and Helsel, 1995) In the absence of fresh water supply, people residing in this area are using lake water for their domestic and drinking consumptions. Many exhaustive and comprehensive studies carried out by Kataria *et al.*, 1997, Singh *et al.*, 2007, and Patil and Tijal, 2001). The available fresh water to man is hardly 0.3 to 0.5% of the total water available on the earth and therefore its judicious use is imperative. Lakes are one of the important water resources used for irrigation, drinking, fisheries, hydroelectric power generation, navigational and flood control purposes (Kumar *et al.*, 2006). On the other hand lakes also provide a habitat for invertebrates, fishes and aquatic birds. Therefore, scientific study needs to review strategies for conservation and better utilization of lakes.

### Study area :

Pariyej lake is big in size covers an area

of about 361 ha. It is situated at a distance of about 25 Km. from Nadiad and comes under Kheda district. It receives rain water from surrounding area and fresh water from Mahi Channel. It is located in N 22° 32' latitude and E 72° 37' Longitude. Pariyej lake is old and man made reservoir. The water is used for drinking and fisheries. The study was carried out for one year period during January 2008 to December 2008.

### MATERIALS AND METHODS

The physico – chemical parameters of water were analysed twice in a month for one year in upper and lower layer and calculated average for season and year. Water samples were collected in the morning between 8 – 9 am in glass stoppered bottle. Temperature and pH were recorded at the time of sample collection using portable kit. Water for determination of dissolved oxygen water was fixed in the field and brought to the laboratory in an ice box for further processing – DO, BOD, COD, carbanotes, Bicarbonates, Ca - Hardness, Mg – Hardness, Chloride, Sulphate, Phosphate, Nitrate, and TDS were determined in the laboratory employing methods described by APHA *et al.* (1992), Trivedi and Goal and

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