

RESEARCH PAPER:

Correlation on physico-chemical characteristics of Dynaneswar dam water Rahuri, Ahmednagar (M.S.)

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SUMMARY

In present investigation attempt has been made study correlation coefficient of water quality parameters viz., physical (pH, EC, TDS), major cationic constituents (Ca, Mg, Na, K) major anionic (Cl, TA, SO₄), minor constituents (PO₄, NO₃), indicators (DO, BOD, COD) and heavy metals (Fe, Zn, Cd, Cr) from the given reservoir. The analyses data were compared with standard values recommended by WHO, ICMR and BIS. The correlation coefficient 'r' among all studied quality parameters has been also worked out. The high positive correlation ($r > 0.60$) was observed in between pH-PO₄, EC-SO₄, TH-OD, TH-BOD and DO-Fe. Also high negative ($r > -0.60$) correlation observed between pH-SO₄ and TH-BOD. The linear equation was evaluated in between highly correlated pairs. The analysis was very useful in the rapid study of ground water quality. The study reveals that many samples of water in the area are suitable for potable.

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Water quality,
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Ground water quality has emerged as one of the most important and confronting environmental issues. According to WHO, 80 per cent of all the diseases of human being are caused by water or water related or water borne 4.6 lakh due to contaminated water and lack of sanitation. Now a days water bodies are contaminated by one or the other ways. Hence study was assigned.

Management of water quality presents various problems to scientists, policy makers and general public. Water quality parameter-relations are able to facilitate quantification, simplification and communication of complex water parameters. Even then studies made in the field of limnology have acquired high importance and desired attention from the concerned workers and ecologists. However, studies on water quality are raising importance in our county. Important contributions on these aspects are by Dhembare and Pondhe (1977a and b), Patil and Tijar (2001), Singh *et al.* (2001), Raka *et al.* (1999), Doctor *et al.* (1997), Venkatasubaraman *et al.* (2006).

The quality of water is described by its

physical, chemical and microbial characteristics. But if some correlation is possible among these parameters, the significant once would be fairly useful to indicate the quality of water. Dynaneshwar dam water is the major source of drinking for Ahmednagar city, a district place. The overall impact of catchments area of dam has been resulting in deterioration of the water quality by various ways. Present research work has been carried out to understand the status of dam water. This is needed for continuous of the pollution level in order to promote better condition around and city health. In view of this the study was undertaken in the Dynaneshwar dam water (19°35' N latitude and 74°27' E longitude at 572 m MSL).

EXPERIMENTAL METHODOLOGY

Collection of samples:

Collection of samples was carried out as per the methods suggested by APHA (1998). Water samples were collected early in the morning (9.00 am) from ten selected points.

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