

## Physico-Chemical Study of Water from Miraj Tahsil, District Sangli (India)

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### Abstract

In present work influence of environmental parameters on water quality at Miraj tahsil of sangli district was studied. A water samples were analyzed for different parameter such as Electrical conductivity, pH, dissolved oxygen, total alkalinity, total hardness, Dissolved oxygen, and total dissolved solids (TDS). It was observed that range of physio-chemical parameters were within the range prescribed by WHO.

**Key words:** Water quality,  $P^H$ , TDS.

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### Introduction

In nature water is one of the abundantly available. It plays vital role in all forms of living organisms, plants, animals and human being. Ground water is vital component of our life support system and its resources are being utilized for drinking, irrigation and industrial purposes. Quality of ground water has not good for drinking purpose due to increase in salinity, high concentrations of nitrate, fluoride, arsenic, iron, total hardness and few toxic metal ions in water due to urbanization and industrialization. It causes many health problems. To avoid these continuous monitoring of water quality is necessary, So in monitoring the parameters such as Hydrogen ion concentration (pH), Electrical conductivity, is an important factor in study of acidity, alkalinity and dissolved ionic substance of water. If concentration of chloride is higher electrical conductivity water will be higher. TDS values are used to determine whether the given water sample is suitable for drinking agriculture and industrial purpose. Total Dissolved solids are due to salt water contamination and industrial pollution. If values of alkalinity are higher then there is presence of carbonate, bicarbonate and hydroxide in water sample. From the literature survey, the

wastages of industries not properly treated, they waste directly throw in nallahs and some of waste spreads on the roads directly. Our present works have been focused on to assessment of drinking water quality in the different villages of Miraj Tahsil.

### Materials and Methods

The fresh samples were collected for analysis and analyzed for different physico-chemical parameters such as pH, Electrical conductivity., TDS, alkalinity, Dissolved Oxygen, Hardness, Acidity of water. For this purpose sample were collected from various villages of miraj thsil such Kasbe Digraj, Kavte-Piran, Malwadi, Ashta, Bhilawdi, Ankalkhope and Sangliwadi.

### Result and Discussion

In present study seven different sites were selected for water analysis and sample collected from various regions for the analysis. The analysed parameters are as recorded in table no 1

**TABLE: I. THE PHYSICO-CHEMICAL PARAMETER GROUND WATER**

Sample No.	Villages	pH	EC. (Us/cm)	TDS mg/lit	Alkalinity mg/lit	DO mg/lit	Hardness mg/lit
1	Kasbe Digraj	7.2	162	118.4	126.2	7.3	160.2
2	Kavte-Piran	7.3	178	116.5	133.2	6.9	180.5
3	Malwadi	7.3	166	130.1	132.6	7.2	176.6
4	Ashta	7.5	192	115.1	147.5	7.2	120.1
5	Bhilawdi	7.4	190	152.1	145.8	7.3	162.5
6	Ankalkhope	7.3	165	117.1	120.2	7.2	148.2
7	Sangliwadi.	7.6	196	92.5	160.5	7.1	88.9

The average values of pH remained alkaline it various from 7.2 to 7.6. Hardness values were recorded within 88.9 mg/L to 180.5 mg/L these values are within limits of WHO standard. Hardness is due to multivalent cations in solution associated with anion like chlorides, sulphate and bicarbonate. TDS is the measure of all dissolved organic and inorganic substances in water. Our study found maximum TDS (152.1 mg/l) in Bhilawadi village and low TDS (92.5 mg/l) in Sangliwadi. The parameter TDS is important which depends on the presence of different particulate

matter in the water. In the sample of sangliwadi higher the alkalinity (160.5 mg/lit) was found these are due to presence of carbonate, bicarbonate and hydroxide in water. It imports undesirable taste to water alkalinity gives bitter taste to water.

### Conclusion

Physico-chemical properties water from different villages of Miraj Tahsil, was carried out in present work. The collected samples from different village's shows variation in results. This study reveals that the parameters are within the range prescribed by WHO.

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