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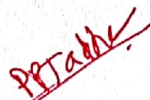
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CERTIFICATE


This is to certify that **Miss Patil Shrutika Annaso** of B.Sc III, roll no. 7589, has successfully completed her project entitled “**Study of Potability of Water from Karveer Tehsil**”.



Teacher incharge



Examiner


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TO STUDY THE POTABILITY OF WATER FROM KARVEER TAHASIL

INTRODUCTION

In rural areas toilets are unavailable for large part of population hence untreated sewage contaminates available sources of drinking water. It is well-known that fecal pollution of drinking water has frequently causes water born diseases. The water polluted by unjudicious use of chemical fertilizers and pesticides play important role in pollution of water. It is great hardship for rural people forced to drink such polluted water. It is particularly true for ground water source. The industrial waste materials, chemicals and dispensaries wastage are also mixing in drinking water in villages adjoining the Kolhapur city.

It is therefore essential that the water used for drinking purpose to be periodically examined for safeguard against the possible outbreak of water born diseases like Typhoid, cholera, fever, gastroenteritis and dysentery.

GOALS:

1. To survey the drinking water sources of some villages from Karveer tahasil.
2. To analyze drinking water samples with respect to its potability.
3. To create awareness among the respective villagers about,
 - a. Safety water use for drinking purpose.
 - b. To take precautionary measures for water born diseases.
 - c. To maintain potability of water for sustainable use.

THE CONTEXT:

Water is an indispensable component required for life to exist along with air. It is nature's free gift to human being. Water is available in various forms on the earth as river, streams, lakes, and ice. The importance of water in our life is so much that, without food one can survive for number of days but without water man can hardly survive for three or four days. It is also important for life health and sanitation. The use of water by man, plants and animals is universal.

Thus water can be considered as the important raw material of civilization because of the fact that man cannot live and industries cannot survive without it. The increase in population and industrial growth are giving pressure on the existing water sources. Hence it is necessary to take measures to prevent careless pollution and contamination of water. The water resources are inexhaustible gift of nature but to ensure there survive it is necessary to maintain, conserve and use them very carefully.



Water sources:

The main source of water is rain fall. The total quantity of water on earth is estimated at $1455 \times 10^6 \text{ Km}^3$. The percentage of water containers is estimated as Sea water 94.00%, Underground 04.00%, Glaciers 01.65%, Lakes, Rivers water, Soil moisture etc 00.35%

Water quality monitoring:-

- *The ground water quality within 50 meters
- *The specification for drinking water quality-
Shall apply for monitoring purpose-

Sr.No.	Parameters	Is 10500:1991 Desirable limit (mg/lit except for pH)
1.	Arsenic	0.05
2.	Cadmium	0.01
3.	Chromium	0.05
4.	Copper	0.05
5.	Cyanide	0.05
6.	Lead	0.05
7.	Mercury	0.001
8.	Nitrate(NO_3^-)	45
9.	pH	6.5 to 8.5
10.	Iron	0.3
11.	Total hardness(as CaCO_3)	300.0
12.	Chlorides	250
13.	Dissolved solids	500
14.	Phenolic compounds ($\text{C}_6\text{H}_5\text{OH}$)	0.001
15.	Zinc	5.0
16.	Sulphate (as SO_4)	200

The sources from which water is utilized by human being is classified in two categories,

1. Surface water sources-

- a) Lakes, streams
- b) River
- c) Storage reservoirs

2. Underground sources-

- a) Infiltration galleries
- b) Infiltration wells
- c) Springs
- d) Wells

The rivers, lakes, streams and wells are main sources of water for the man.

Water pollution sources-

- a) Industrial elements



- b) Domestic sewage
- c) Miscellaneous.

Water pollution types-

A) Physical pollution:-

- a) Colour
- b) Temperature
- c) Taste and odour
- d) Foam
- e) Turbidity

B) Chemical pollution:-

- a) Alkalis
- b) Acids
- c) Dissolved and suspended organic and inorganic substances

C) Biological pollution:-

- a) Pathogenic micro-organisms

Now, it is prime need to determine potability of water in a rural area in order to prevent water born diseases and health hazards.

The Karveer tahasil is adjoined with Kolhapur city as well as it is irrigated region. Due to industrialization and over irrigation most of the water reservoirs are polluted and their water becomes unsuitable for drinking purpose. The quality of drinking water is studied by using different parameters such as alkalinity, Coliform group of bacteria, presence of number of elements, electric conductivity, hardness, TDS, D.O. and temperature.

Alkalinity

It is a measure of the resistance of water to a change in pH. The suitable range of alkalinity is 100-500mg/liter.

Calcium / Magnesium

It determines hardness of water.

Coliform (*Escherichia coli*)

It represents recent fecal contamination of water and causes intestinal diseases.

Electric conductivity

It determines the total dissolved solids in water.

Fluoride

Naturally it is found in ground water, wells and it help to prevent dental cavities. It increases the tendency to cause tooth mottling.

Iron

It gives metallic taste at 1-2 mg/liter water.

Nitrogen (NO_3^- Nitrate)



It indicates water contamination by human or livestock wastes, excessive fertilization or sewage from dumpsites. The maximum acceptable concentration in drinking water is 10mg/lit.

Nitrogen NO_2^- (Nitrate)

It is indicator of divert contamination by sewage or manure.

pH

It expresses intensity of the acid or alkaline condition of solution. Generally accepted range of pH is 6.5 to 8.5.

Sodium

It is not considered a toxic metal 5000 to 10,000 mg/day are consumed by normal healthy adult without adverse effects. People suffering from many medical conditions such as hypertension may require a sodium restricted diet.

Sulphate (SO_4)

Sulphate very high levels responsible for brain disorders 500 mg/lit.

Total dissolved solids (TDS)

It comprises inorganic salts and small amount of organic matter dissolved in water.

PRACTICE:

1. To survey the drinking water sources from some villages of Karveer tahasil.
2. To collect and analyze water samples with respect to potability.
3. Parameters like alkalinity, electric conductivity, TDS, D.O., temperature are studied with the help of water analysis kit.
4. Hardness, Coliform bacteria, elements like Nitrates, Sodium, Chloride, Fluoride, Sulphate, Iron, Magnesium are studied with the help of standard methods.
5. Testing is done twice in the year for successive three years.

EVIDENCE OF SUCCESS:

The present investigation deals with potability of water. The reports are submitted to respective village authorities like Garmsevak, Talathi, Sarpanch and Medical officer for the further necessary action and the photographs of these events will be provided as evidence of success.



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