International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 02 | Feb -2020 ISSN: 2582-3930

To Study The Purification Of Water By The Seeds Of Moringa Oleifera

Tarun Kumar Mahawar[1], Sayed Imran Ali[2], Dr.Trapti Sharma[3], HarishUniyal[4]

1.B.tech student, Department of Civil Engineering, MAIIT, Kota

2. Head of Department, Department of Civil Engneering, MAIIT, Kota

3.Head of Department, Department of Chemistry, MAIIT, Kota

4. Assistant professor,Department of Civil Engineering, MAIIT, Kota

ABSTRACT – Access to safe drinking water is one of the main human rights. However, today, nearly 76 million people in india do not have access to safe drinking water, especially in rural areas. Simple, effective, and low-cost technical solutions are being sought to resolve this situation. *Moringa oleifera* is an alternative, since their seeds contain a natural coagulant able to effectively reduce the turbidity of the raw water. There are represent the result of Moringa Oleifera seeds on PH and TDS value of mudy water and soap water.

Key Word: PH, Moringa Oleifera(MO), Total dissolved solid(TDS)

I. INTRODUCTION

Moringa oleifera is also called as drum stick. Drum stick is consumed as food material in all over India. But many people don't know the important traditional use of moringa oleifera. The drum stick can also be used to purify the turbid water. Usually most of the people in rural areas when they get turbid water ,immediately the only method which comes their mind is to purify the turbid water are that boiling the water and filtering the water. Water that is used composition of surface water and ground water change on times scale of minutes to years. Natural water occurs at or near the surface of the earth that come in contact with sedimentary and ingenious rocks. Water is usually saturated with rock chemical found at different depths. Rain water is also used during times of draught, surface water used for drinking and cooking purpose require treatment because it is more valnearable to contamination from activities occurring at the earth's surface. This paper report the use of moringa oleifera seeds in an attempt to study water clarity and pollutant removal in water treatment.

II. MATERIALS AND METHODS

A. Mudy Water and Soapy Water

The mudy water was prepared from soil adopted in this study, consists of two water sample taken at a specific time. Samples were collected in the glass beakers and the characterization of surface water sample was conducted immediately after the sample arrived to laboratory.

B. Moringa Oleifera

The procedure for the preparation of moringa oleifera seed powder is given below.

(a) For water treatment purpose , the seedpods were first allowed to dry naturally on the prior to harvesting.

(b) 10 gm seed powder of moringa were prepared just before their use.

(c) A paste of moringa seeds powder with water was prepared.

(d) Hulls and wings from kernels were removed manually to increase the effect of powder to reduce to waste sludge formation.

(e) The seeds kernels were grounds to a medium fine powder in grinder and powder was used as coagulant for analysis.

C. Physical method of analysing the water samples

Table 1 physical methods.

s.no.	Physical parameter	method
1	PH	PH Meter
2	TDS	TDS Meter

D. Treatment Procedure Adopted .

In this present work two method were adopted to treat the turbid water and they are PH method and TDS method.

- PH method and TDS method

  In these methods, we prepared two sample one of mudy water sample and other is soapy water sample and we use PH and TDS meter to take the reading of two sample water. First of all we take initial reading before adding the moringa seeds powder and then we take the reading after

adding seeds powder at interval 10 minutes,30 minutes and1 hours. For taking next reading we clean the pH and TDS Meter carefully by tissue paper plot the graph.

III. RESULTS AND DISCUSSION

The initial characteristics of water sample for experimental results after treatment with PH and TDS meter are tabulated in table 2 and 3 respectively

- **Initial characteristic of mudy and soapy water sample**

The water sample were analyzed in Environmental Engineering laboratory, Department of Civil Engineering, MAIIT,Kota the analysis results are summarized in table 2.

Table 2 Initial characteristics of water sample

s.n.	Parameter	Units	Value of concentrated water sample	
			Mudy water sample	Soap water sample
1	PH		6.17	6.20
2	TDS	Mg/l	314	332

Table 3 Results of experimental studies.

Coagulants used : Moringa oleifera						
s.n.	**parameter**	**Initial value**		**Final concentration of coagulants**		
		Mudy	**soap**	**Time period**	**Mudy water**	**Soap water**
1	**PH**	**6.17**	**6.20**	**10 minutes**	**6.13**	**6.05**
				30 minutes	**5.93**	**5.98**
				1 hours	**5.88**	**5.99**
2	**TDS**	**314**	**332**	**10 minutes**	**304**	**343**
				30 minutes	**308**	**331**
				1 hours	**308**	**342**

- **Use of purified water by use of MO**

(a) We can use it in flood condition.

(b) We use it for drinking for human and animals after some chemical treatment.

(c) We can use in a fire protection work.

(d) We use it to transportation on required place.

(e) We use it to increase ground water table.

(f) We use it to wash cloths after some treatment and filtration.

IV. RESULT & DISCUSSION

The value of PH and TDS were calculated for two samples at different interval. These results give the information about the condition of water.

The results show that moringa oleifera seeds increase the settlement property and decrease PH and TDS value.

V. CONCLUSION

Based on the analysis and results of the present study it is conclude that within the statical limitation the mudy water can be better treated by using coagulant Moringa oleifera. We use 20 gm seeds powder. It is concluded that to compare the efficiency of column and coagulant studies in depth investigation are required on the factor like saturation and regeneration capacities and potential of adsorbent.

REFERENCES

[1] Maruti Prasad S V, SrinivasaRao B, "A low cost water treatment by using a natural coagulant", International Journal of Research in Engineering and Technology, E-ISSN: 2319-1163, P-ISSN: 2321-7308, Vol.2, Issue.10, pp.239-242, 2013.

[2] Mangale S M, Chonde S G, Jadhav A S and Raut P D, "Study of Moringaoleifera(Drumstick) seed as natural Absorbent and Antimicrobial agent for River water treatment", Vol.2, No.1, ISSN. 2231 – 3184, pp.89-100, 2012.

[3] Sunita Singh Thakur and SonalChoubey, "Assessment of coagulation efficiency of Moringaoleifera and Okra for treatment of turbid water", Archives of Applied Science Research, Vol.6, No.2, pp.24-30, 2014.