

Research Paper :

Purification- clarification of lake water by natural coagulant (*Moringa oleifera*) seed powder

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ABSTRACT

In the present investigation, seeds of *Moringa oleifera* have been used to determine its efficiency in treating lake water and compared with the performance of Alum + bleaching powder, poly aluminum chloride and ferric chloride. Residual turbidity, Hardness, Alkalinity, TDS Values are within the WHO limit or not has also been examined.

KEY WORDS : Natural coagulant, Lake water, *Moringa oleifera*, Ahmedpur

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In rural areas, surface water and ground water are the preferred sources for drinking or daily usage. However only simple primary treatment plant is given for treatment of such water at village level is not only a theoretical exercise but practically impossible due to several reasons (8). Natural poly electrolytes of plant origin have been used for many centuries in developing countries for clarifying or purifying turbid water (9). According to literature, several works (3,4,7,10) has shown powdered *Moringa oleifera* seeds as most promising coagulant in water treatment. *Moringa oleifera* seeds treat water on two levels acting both as a coagulant and antibacterial agent (2).

EXPERIMENTAL METHODOLOGY

For lake water, selected site is Manjara dam, dist. Beed, Maharashtra. From this dam water supplies to Latur and several areas of Beed district. Turbid water samples were collected in plastic bottles of two liters. Total four samples were collected having approximately same turbidity. Samples were analyzed before and after treatment by using prescribed methods from APHA (1998) and NEERI (2007) (1,6)

Dried pods of *Moringa oleifera* were collected and seeds were separated from the pods and then

pulverized.

Jar-test:

- Coagulation/flocculation is the process of binding small particles in the water together into larger, heavier clumps which settle out relatively quickly. The larger particles are known as floc. Properly formed floc will settle out of water quickly in the sedimentation basin, removing the majority of volumetric flask (1,000 ml)
- Analytical balance
- Coagulants and coagulant aids
- Magnetic stirrer (optional)
- A stirring machine with six paddles capable of variable speeds from 0 to 100 revolutions per minute (RPM)

