USE OF SEEDS OF *Moringa oleifera* AND WOOD OF *Phyllanthus emblica* TO CLARIFY TURBID WATERS AND WASTEWATERS

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Ability of mature and immature seeds of *Moringa oleifera* and wood of *Phyllanthus emblica* to purify turbid waters and wastewaters was investigated.

Mature seed extracts of *Moringa* were comparatively more effective than immature seed extracts in purifying turbid waters. Mature seed powder at 50 mg/20 ml reduced the turbidity (NTU) by 95% within 2 hours. It was the aqueous extract of *Moringa* seeds that was effective in clarifying turbid waters, not the insoluble fraction. These observations are complementary to results of some previous workers. A positive relationship between protein content and purifying ability of seed extract was also observed.

It was also found that extract of mature *Moringa* seeds have an ability to clarify textile dye solutions. All four solutions of textile dye namely Terasil Blue 3RL-02, Terasil Navy GRL-C, Terasil-Red R and Terasil Yellow 4G were clarified by *Moringa* seed extracts.

Studies on pH and the conductivity of different types of water samples showed that pH is slightly reduced and conductivity is rapidly increased when the sample were treated with *Moringa* seeds. In addition, the conductivity was found to fluctuate with time and temperature of treated samples.

The effectiveness of the mature seeds of *Moringa* against the bacterial growth of polluted waters was also studied. It was found that there is a significant difference between the bacterial growth of treated and untreated samples. It was the quantity of seeds used that mostly affected the bacterial growth, than the time exposed to the seeds.

Antimicrobial activity of crude aqueous extract of *Moringa* seeds were studied against *E. coli* and *Proteus sp.*, which are indicative of faecally polluted water and disease causal organisms. Clear inhibition zones were observed for both organisms.

The purifying ability of dried fruit, dried and non-dried branches of *P. emblica* was also investigated. The dried branches of *P. emblica* were found to be more effective in purifying turbid water whereas the non-dried branches showed little effect. Dried fruit did not show any effect.

The purifying ability of seeds of *M. oleifera* and various parts of *P. emblica* plant was also investigated against paper factory effluent but no significant effect was observed.