



Comparative evaluation of phytochemicals and anti-microbial properties of Watermelon seeds, floral parts of Tulsi and Banana peels and their use as a potential coagulant in water treatment

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Abstract : *This investigation deals with the potential of Watermelon seeds, floral parts of Tulsi, Banana peels as a natural coagulant for water treatment. The present study also evaluates the antimicrobial activity against common pathogen, and their qualitative phytochemicals and anti-inflammatory analysis.*

For water treatment we use the process of coagulation. During this study, a surface water sample was collected for treatment by watermelon seed, floral part of tulsi, banana peel in powdered form which act as coagulants. In 500ml water sample 200mg coagulants were mixed. After treating the water with coagulants, water sample was analysed on

different parameters like pH, turbidity, hardness, alkalinity etc. All parameters were reduced after treatment with coagulants showing effective clarification agent.

Anti-microbial activity of these materials was determined by Agar- well diffusion method. The sample extract was used against Staphylococcus species (bacteria) and Aspergillus species (fungi). Methanolic extract of these samples show anti-microbial effect.

Phytochemical analysis of these materials was carried out by using various chemical tests. Results show presence of carbohydrates, alkaloids, tannins, steroids in all three extract i.e, Watermelon seeds, Banana peels, floral parts of Tulsi but protein was present in watermelon only, flavanoids were present in Banana peels and floral parts of Tulsi.

Anti-inflammatory activity was done by egg albumin method, dilution of extract and standard i.e, Diclofenac sodium (50mg) was prepared and absorbance was taken by using spectrophotometer.

Keyword: *Watermelon seeds, Banana peel, floral parts of Tulsi, antimicrobial, turbidity, water treatment.*

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Introduction:

Watermelon (*Citrullus lanatus*) belongs to the Cucurbitaceae family and is a source of multiple minerals, vitamins, proteins, present in their peels, pulp, seeds. It also contains phytochemicals, which provide resistance against various diseases. It has various beneficial effects against cardiovascular disease due to