

Evaluation of Efficiency of Naturally Available Disinfectants and Filter Media in Conventional Gravity Filters

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Abstract : Gravity filters are one of the most commonly used, economically viable and moderately efficient water purification systems. Their efficiency is mainly based on the type of filter media installed and its location within the filter mass. Several researchers provide valuable input in decision of the type of filter media. However, the choice is mainly restricted to the chemical combinations of different substances. This makes it very much dependent on the factory made filter media, and no cheap alternatives could be found and used. This paper presents the use of disinfectants and filter medias either available naturally or could be prepared using natural resources in conventional mechanism of gravity filter. A small scale laboratory investigation was made with variation in filter media thickness and its location from the top surface of the filter. A rigid steel frame based custom fabricated test setup was used to facilitate placement of filter media at different height within the filter mass. Finely grinded sun dried Neem (*Azadirachta indica*) extracts and porous burnt clay pads were used as two distinct filter media and placed in isolation as well as in combination with each other. Ground water available in Marathwada region of Maharashtra, India which mainly consists of harmful materials like Arsenic, Chlorides, Iron, Magnesium and Manganese, etc. was treated in the filters fabricated in the present study. The evaluation was made mainly in terms of the input/output water quality assessment through laboratory tests. The present paper should give a cheap and eco-friendly solution to prepare gravity filter at the merit of household skills and availability.

Keywords : fliter media, gravity filters, natural disinfectants, porous clay pads

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