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### ABSTRACT

#### DEVELOPMENT OF POINT-OF-USE FILTRATION SYSTEM FOR HARVESTED RAINWATER USING NATURAL INDIGENOUS MATERIAL

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In Pakistan and other water stressed countries, most of rural communities rely on harvested rainwater as a source of untreated drinking and domestic water supply in the summer monsoon until it lasts. Particulate matter and air-borne microbes were the main component in the process of ice nucleation and also rainwater brings suspended impurities & microorganism due to dry and wet deposition on the catchment in rural areas. The aim of this study is to utilize natural and local material for removing suspended particulate matters and microorganisms from harvested rainwater in rural communities in Thar - desert. 50% of harvested rainwater samples collected was contaminated with *Escherichia Coli* (2 – 15CFU/100mL) with exceeded turbidity's values than WHO guidelines before filtration in column study at pilot lab scale. Filter was made by compressing the milkweed floss fiber in the column vessel. The fabricated novel indigenous filter shows a good removal efficiency of 99.33% - 100% of *Escherichia Coli* and 89.38% - 99.61% turbidity's from harvested rainwater samples. The overall result shows that the fabricated filter suitable for filtrating harvested rainwater. This paper presented a very easy, low- cost, and manually operated mechanism to extract the stored underground tank rainwater and simultaneously purifying it to reduce water-borne diseases in rural communities of Thar – desert, Pakistan.

Indicate preference of kind of presentation

Oral Communication

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Odour/VOC from waste water, sewer systems and livestock.

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