

3<sup>rd</sup> International conference on  
Green Chemistry and Technology

March 14, 2022 | Webinar

## Development of Eco-friendly Ethylene Scavenger Filters for Horticulture Application

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The preservation of climacteric fruits such as apples, plum, peach, pear, bananas, mangoes, kiwi, cucumbers, tomatoes and avocados, and vegetables such as carrots, potatoes and asparagus for a longer time is a biggest challenge for the horticulture industries. Most of fruits and vegetables produce a gaseous compound called "Ethylene" which increases the chlorophyll degradation process and accelerate ripening, senescence and softening of the same. Most of commercially available ethylene absorber sachets are composed of potassium permanganate (KMnO<sub>4</sub>) which is toxic in nature. In present study non-toxic, aqueous natural plant extract based ethylene scavenger filter was developed by green approach which increases the shelf life of fruits and vegetables in warehouses or in transportation and in household refrigerators. The eco-friendly ethylene scavenger filter was developed by the treating cotton woven or non-woven or viscose knit fabric with a highly stable water based emulsion which is composed of herbal oil extract, emulsifier and anti-oxidant agent. This filter showed much more higher ethylene absorption capacity (tested by NIOSH 1619) i. e. 95.47% and 99.89% antibacterial activity (AATCC 100-2019) as compare to potassium permanganate based ethylene absorber sachets.