

diagnostic methods and modelling for pest prioritization, introduction, spread, establishment and economic impact.

In order to connect with the international plant trade, plant disease management within an exporting country is important to ensure that they can meet the biosecurity requirements of importing countries. Aiming scientific research in plant pathology and disease management would underpin the basis for safe trade in plant material and would contribute to the country's economy.

Keywords: Phytosanitary, Plant biosecurity, Plant quarantine

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Biological Sciences

Functionalization of cotton fabric imparting mosquito repellency, UV protection and antimicrobial potential using seven selected plants

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In wake of eco-friendly approach, there is a growing trend to impart various functional attributes in textile substrates through Green Chemistry approaches. In this context, a comparative study of coloration, mosquito repellency, UV protection and antimicrobial potential of extracts of seven selected plants were done using cotton fabric. The plant biomass include leaves of *Lawsonia inermis*, rhizome of *Curcuma longa*, bark of *Acacia nilotica* & *Eucalyptus globules*, peels of *Punica granatum* & *Allium cepa* and flowers of *Tagetes erecta*. For this purpose, extracts of these plant biomass were applied on cotton fabric samples and following properties were evaluated; color strength by Kubelka-Munk equation; anti-microbial potential by zone of inhibition in bacteriostasis agar; UPF for UV protection by ultraviolet absorbance analysis; mosquito repellency by percentage insect landing and percentage repellency. It was found that *Tagetes erecta* showed good mosquito repellency, UV protection and antimicrobial potential along with its exceptionally high color strength value but poor fastness properties. However, *Acacia nilotica* demonstrated outstanding fastness properties and other attributes studied but showed moderate color strength value.

Keywords: Mosquito repellency, UPF (Ultraviolet Protection Factor), Zone of inhibition