

73. Title: Insect repellent and antibacterial solution for textiles

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Keywords: Insect Repellent, Antibacterial solution, Textiles, Fabrics

Domain: Textiles (Functional textiles)

Summary: Available chemical-based Insect repellent solutions are toxic and create negative externalities on environment Prolonged exposure of chemical-based repellent can cause health issues viz. Asthma, ocular irritation etc. And, these repellent solutions are expensive and need periodic replacement. Hence, in order to find an environment friendly solution, green chemicals δ -Decalactone (DDL), 2 nonene-4-one, and 6-amy α -pyrone (6PP) are developed from waste lignocellulosic biomass having mosquito repellence and antibacterial properties. This method gives non-toxic, economic, environment friendly and bio renewable solution.

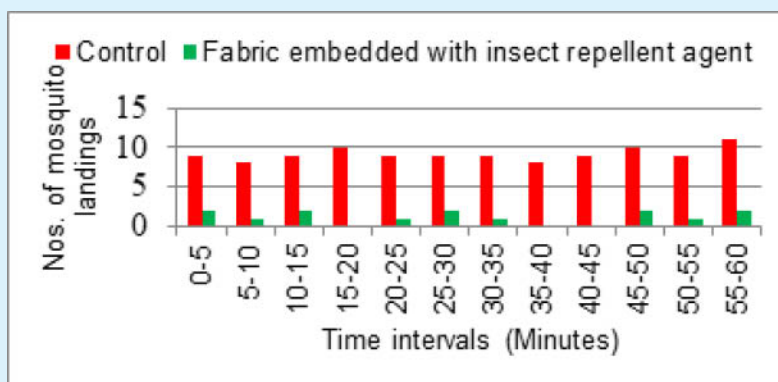


Figure: Mosquito repellency cage test results

Advantages:

- » Durable Repellence effect on textile substrates
- » 87% mosquito repellence efficiency
- » Zero waste generation during manufacturing of repellent solutions
- » The developed repellence effect (both leaching and non-leaching type) is embedded inside the fabrics at molecular level; hence it will work effectively during the durable finishing of textile.

Applications:

- » Textiles, clothing and medical protective gears viz. masks, apron, surgery gowns, etc.
- » Medical tents, Mosquito nets
- » Paints, Sprays and Floor cleaning liquids

Scale of Development: A functional prototype solution is developed and validated.

Technology Readiness Level: 4

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