

Nanotech application for vector control



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A significant fraction of the global infectious disease burden is due to the vector-borne infectious diseases like Amalaria, dengue, yellow fever and chikungunya. Almost half of the world's population is infected with at least one type of vector-borne disease. We tried to develop a natural, low cost, safe and effective nano formulation using essential oils. . An experimental study of oil in water nanoemulsion preparation, process optimization and stability based on the required size distribution was performed with surfactant oil ratio (SOR), stirring time and speed as the variables for nanoemulsion preparation. The storage stability of the nanoemulsion was also studied in terms of particle size, pH, viscosity and zeta potential at room temperature and refrigeration temperature for a period of 6 months. The nanoemulsion was tested for its larvicidal activity against both susceptible and resistant strain of mosquito larvae's and their antibacterial activity was also tested.

Keywords: Nanao, nanoemaulsion, vector control, essential oil

Biography:

Dr. Latika Bhatt is an Assistant Professor and the Centre Coordinator in department of Textile Design, NIFT Bhopal. She holds a PhD in Textile Chemistry and specializes in Micro & Nanotechnology and its textiles applications. The topic of her Ph.D. was "Application of Essential Oils On Textiles". She has 9 years of industry and academic experience. She has worked in the industry as research and development merchandiser, research personal for government projects, and as an academican. She has several publications in the area of textile finishes, nanotechnology, medical textiles in national and international journals. She also has a patent to her credit in the area of nanotechnology.