Microencapsulation of lemon eucalyptus oil as an effective mosquito repellent by solvent evaporation method using polylactic acid

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Concerns have been raised over the various commercially available synthetic anti-mosquito formulations which have been attributed to toxic effects both to the users, environment and non-target organisms. This has led to increased interest on alternative bio insect repellents of plant origin which are safer and biodegradable. A number of essential oils such as lemon eucalyptus oil, citronella oil, catnip oil and 2-undecanone (methyl nonyl ketone) have been found to possess excellent mosquito repellent properties. However, these active compounds face some constraints that hinder their use as topical mosquito repellents such as biologically instable, strong characteristic odour and possibility of dermal irritation. In view of this observation, microencapsulation technology has been used as a means of protecting such volatile compounds from environmental aggression and its controlled release. In this study, a suitable methodology to produce polylactic acid (PLA) microcapsules containing lemon eucalyptus essential oil using solvent evaporation technique will be developed.