



the skin sensitivity tests were applied to the prepared formulations in human volunteers. The oils were also developed in the form of fumigant dosage form and their effectivenesses were evaluated by following the standard method.

The results showed that citronella oil was effective as topical mosquito-repellent formulations. The effective concentrations were 15%-30% with the effective duration of repellent action between 2.00 to 3.67 hours. The effective duration could be increased upto 5.33 hours by the incorporation of various additives particularly vanillin. The inverse relationship between the evaporation rate of citronella oil and the vanillin concentration was proposed as mechanism of action of the added vanillin. The acrylates copolymer and SCMC were found to be effective additives for prolonging the repellent action only at certain concentration ranges. Plai oil was found to be less effective compared to citronella oil. The effective repellent durations were only 0.67-1.83 hours at plai oil concentrations of 20-30%. The repellent duration could be increased upto 5.50 hours by the incorporation of 5%vanillin. However, the plai oil formulations, due to its strong odour, were not accepted by volunteers due to its strong odour. In contrast to citronella oil formulations, most of the formulations with citronella oil were well accepted particularly the formulations with vanillin. It was found that both oils were not suitable and were not effective for fumigant dosage forms.