

SPECIAL COLLECTION  
LIBRARY USE ONLY



National University of Science and Technology  
Zimbabwe



NAME MTISI FARLANE  
REG NO N0110183G  
SUPERVISORS Dr CT PAREKH  
Dr H CHIRIRIWA

TITLE: DETERMINATION OF THE MOST EFFECTIVE CONCENTRATION OF DEET  
AND PERMETHRIN IN A MOSQUITO REPELLENT SOAP AND ASSAY OF ACTIVE  
INGREDIENTS



LIBRARY NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY P.O. BOX 346 BULAWAYO ZIMBABWE		
DATE	ACCESSION	CLASS No.
11/05/16	SC 15/851	

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR:

BACHELOR OF SCIENCE HONOURS DEGREE IN APPLIED CHEMISTRY (MAY 2015)



# ABSTRACT

This report was an effort amongst countless others, to find an effective mosquito repellent soap formulation and to deliver a quality product to the consumers. A small but growing number of consumers is seeking the assurance that the product they are to buy meets their expectations. The project was carried out to investigate the most effective concentration of N-N Diethylnetoluamide and Permethrin in a mosquito repellent soap and to develop a method for the assay of the active ingredients. The effect of perfume in a repellent soap was also investigated. In the experiment nine soaps were prepared and the concentrations of DEET and Permethrin were varied with six soaps having both the ingredients. Efficacy tests were carried out on the different soaps. The most effective soap in repelling mosquitoes and economically was the one which had 50% DEET. Physical and chemical tests were done. The soaps had an average total fatty matter of 71.6%, average moisture content of 14.35% and average free alkali of 0.04. The experimental soaps were benchmarked against the United Refineries and Unilever specifications. A statistical method of analysis was carried out at 95% confidence interval of the experimental soaps quality results against other commercial soap results with no significant difference between the two.