

Larvicidal effect of Crude extracts of *Curcuma longa* against *Anopheles* sp

Uthayarasa. K, Surendran, S.N., Pathmanathan, K and Jeyadevan, J.P

In recent years use of easily biodegradable and environment-friendly natural insecticides of plant origin has received renewed importance for mosquito vector control. *Anopheles* sp is a vector of malaria disease. The present communication deals with the laboratory studies to assess effect of sequentially extracted solvent extracts such as hexane, dichloromethane (DCM), ethyl acetate (EA), ethanol, methanol and water or rhizome of *curcuma longa* for control of third instar larvae of *Anopheles* sp. Acetone and DMSO (1:1 v/v) was used as solvent for preparation of stock solution. Stock solution was diluted with water and following concentration was prepared 50, 75, 100, 125, 150, 175, 200, 225 and 250 ppm. 20 larvae were added to 200 ml of each concentration. The solvent was used as control. Each test was maintained at ambient temperature ($29\pm 2^{\circ}\text{C}$) and was performed in triplicate. Mortality was recorded at 24, 48 and 72 hours. Mortality data were applied to log probit regression analysis to analyze 50% of lethal dose (LD_{50}) and LD_{50} was expressed as mean value of triplicate. The results revealed that ethanol and DCM extracts were found to have higher toxic effect on third instar larvae of *Anopheles* and LD_{50} values were 105 ppm and 115 ppm respectively. LD_{50} value of EA and hexane were 135 ppm and 210 ppm respectively. LD_{50} value of methanol and aqueous extract were greater than 250 ppm at 24 hours. Solvent did not cause mortality of larvae of *Anopheles* sp. As the exposing time was increased mortality was also increased after 24 hours for each test. Further study will be continued to isolate and purify the more toxic compound / compounds and which will be used to the field application.

Key Words: *Anopheles* sp, *curcuma longa*, larvicidal effect, sequential extraction