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Effect of sequentially extracted crude extracts of *Allium sativum* L on of *Anopheles subpictus* larvae

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Controlling of mosquito-borne diseases including malaria is becoming more and more difficult because of increasing resistance to insecticides. Hence one of the alternative approaches for mosquito control is the use of extracts of plant origin. *Allium sativum* is used in folk medicine and it possesses bactericidal effects. Therefore the present work aims at evaluating the effect of sequentially extracted crude extracts of bulb of *Allium sativum* against third instar larval stage of *Anopheles subpictus*. Sequential extraction method was used for extraction using solvents increasing polarity such as hexane, dichloromethane (DCM), ethyl acetate, ethanol, methanol and water and each filtrate was concentrated using rotary evaporator at 40^{0}C. Stock solution was prepared by dissolving each dried extract in acetone and DMSO (1:1 v/v). From this stock solution following concentrations of 50, 75, 100, 125, 150, 175, 200, 225 and 250 ppm were prepared by diluting the stock solution with water. In to 200 ml of each concentration, 20 larvae were added carefully and triplicate test was maintained to all concentrations of each solvent extract. The solvent mixture was used as control. Each experiment was carried out at ambient temperature (29±2^{0}C). Larval mortality was recorded after 24 hours. Mortality data were analysed by log probit regression analysis to calculate 50% lethal dose (LD_{50}) at 95% confidence limit. The bioassay results revealed that DCM extract caused a higher mortality against third instar larvae of *An. subpictus* and LD_{50} value was found to be 158.172 ppm (fiducial limits=146.020-170.836 and X^2= 2.2072). Also the ethanol extract showed larvicidal effect and LD_{50} value was 164.507 ppm (fiducial limits=155.222-174.152 and X^2=8.6047). LD_{50} value of hexane, ethyl acetate, methanol and aqueous extracts was ranged from 269.803 ppm to 298.200 ppm. Control experiment with solvents did not cause mortality of larvae. It is concluded that DCM extract of this plant is better than other solvent extracts to cause higher mortality of third instar of larvae *An.subpictus*.

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