OMICS Group Conferences
Accelerating Scientific Discovery
2nd International Summit on Toxicology
October 7-9, 2013 Hampton Inn Tropicana, Las Vegas, USA

The compatibility of Spindor dust with *Poecilia Reticulata* for integrated mosquito larviciding

Joy Anogwih

University of Lagos, Nigeria

Abstract

The compatibility of spindor dust (spinosad), a bio-rational larvicide derived from the fermentation of a soil bacterium *Saccharopolysporaspinosa*, was investigated on the mosquito fish, *Poecilia reticulata*, and larvae of both *Anopheles gambiae*and*Culex quinquefasciatus* mosquitoes. Three replicates of each to different concentrations of spinosad under static bioassay were performed to determine the acute toxicity of the larvicide on each organism. To investigate the genotoxic and ultrastructural changes inguppy, the fish were exposed for 28 days to low concentrations of the test larvicide capable of killing 30%, 50% and 70% of *Cx. quinquefasciatus* larvae.Thereafter, gill and intestinal cells were removed at days 3 and 28 respectively, and then processed for epifluorescent and transmission electron microscopic studies. Spinosad showed no lethal toxic effect on *P. reticulata* but caused an appreciable mortality to*Anopheles* and *Culex* larvae with 24hLC_{50} values of 59.34 μgL^{-1} and 73.06 μgL^{-1} respectively. The larvicide failed to significantly induce micronuclei in the fish as determined with acridine orange assay ($P>0.05$). Marked damages that were characterised by pycnotic nuclei, loss of cristae in mitochondria, dense and degraded cytoplasm were found in the exposed intestinal cells of the fish except at 49 μgL^{-1} of spinosad. The use of spinosad for integrated mosquito larval control is highly compatible with *P. reticulata*at 49 μgL^{-1}.

Biography

Anogwih Joy Anuri, is a young researcher and lecturer in the Department of Zoology, University of Lagos, Nigeria. She completed her Bachelor's Degree in Zoology; Masters Degree in Applied Entomology and Parasitology; Postgraduate Diploma in Science Education and recently, a PhD. Degree in Applied Entomology and Pest Management from different Universities across Nigeria. She has also undergone trainings in different parts of the world including training in Transmission Electron Microscopy at the Central Michigan University, USA. She has worked on parasitic helminthes, protozoan infections in school children as well as, HIV infected individuals. She has also worked in the area of mosquito vector control. She is presently interested in pest control and pesticide toxicology with emphasis on sustainable mosquito vector control. She has her publications in reputed journals including Clinical Toxicology.