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Pesticide residues in aquatic organisms: Fish and frog

K S Tilak

Acharya Nagarjuna University, India

With the standard methods and guidelines prescribed by EPA for TLC and GLC procedures, the tissues of fish and frog viz. Gill, Muscle, Liver kidney, Brain and Tests (Frog only) were extracted, cleaned up and concentrated to less than one ml and are qualified and quantified. The qualified residues are classified by their standard 'Rf values' and are repository at nano level. The residues are varied in different tissues of fish and also in different fish as well as in frog due to lipophilic nature. The latent residues are known to bioaccumulate via the food chain and reach human beings and the risk to the health of the people may be cautioned. The bio-concentrations will show an impact on reproductive impairment of the commercially important fishes and to higher carnivores especially to birds. The need to protect the fast declining population like frogs which are natural pest controllers from under exposure to insecticides cannot be ignored too a part from consumption of fish and frog. In disease management of aqua farming, the chemical treatment is contemplated and use of organo phosphates like chloropyrifos result to reach a level either acute or chronic and the fish are subjected to more stress, avoid feeding which is detrimental for their growth. An attempt has been made to study the effect of three mixed pesticides in ratios as 1:1:1 (Organochlorine-Endosulphate, Organophosphate-Dimethoate and a Synthetic pyrethroid Cypermethrin. The results of the study revealed that prolonged exposure to sublethal concentration of mixture of pesticides ratios in the fish *Labeo rohita* leads to increased accumulation. The study also revealed that at sublethal concentrations of pesticide mixture lead to high residue concentrations. The uptake and persistence of endosulphan, dimethoate and cypermethrin varies according to the residues which is a prerequisite to observe any biochemical or histopathological change which are really the indices of toxicity. It is also confirmed that many of the bio chemical changes in the tissues works from their normal functions and triggers a cascade mechanism that reverberate.

Biography

K S Tilak is a Doctorate from Andhra University, Waltair, AP, India, the former Dean of faculty of Natural Sciences, Chairman Board of Studies (PG) Zoology and Head of the Department of Zoology and Aquaculture having 40 years of research experience in the field of "Aquatic Toxicology", having guided 29 research degrees, published 72 research papers in international and national journals recipient of prestigious 'Archana Gold Medal' by Academy of Environmental Biology, editor and reviewer of reputed journals, attended and conducted international and national conference in Acharya Nagarjuna University, India.

profkstilak@gmail.com