

8th World Congress on TOXICOLOGY AND PHARMACOLOGY

April 13-15, 2017 Dubai, UAE

Multi-residue analysis (GC-ECD) of some organochlorine pesticides in commercial broiler meat marketed in Shivamogga city, Karnataka state

Lokesh L V¹, Jagadeesh S Sanganal², Yogesh Gowda S², Shekhar², Shridhar N B², Prakash N¹, Prashant kumar Waghe¹, H D Narayanaswamy² and Girish Kumar V³

¹Veterinary College, Shivamogga, India

²Veterinary College, Bengaluru, India

³Karnataka Veterinary, Animal & Fisheries Sciences University, India

Organochlorine (OC) insecticides are among the most important organotoxins and make a large group of pesticides. Physicochemical properties of these toxins, especially their lipophilicity, facilitate the absorption and storage of these toxins in the meat thus possessing public health threat to humans. The presence of these toxins in broiler meat can be a quantitative and qualitative index for the presence of these toxins in animal bodies, which is attributed to waste water of irrigation after spraying the crops, contaminated animal feeds with pesticides, and polluted air are the potential sources of residues in animal products. Fifty (50) broiler meat samples were collected from different retail outlets of Bengaluru city, Karnataka state, in ice cold conditions and later stored under -20°C until analysis. All the samples were subjected to Gas Chromatograph attached to Electron Capture Detector (GC-ECD, VARIAN make) screening and quantification of OC pesticides *viz*: Alachlor, Aldrin, Alpha-BHC, Beta-BHC, Dieldrin, Delta-BHC, o,p-DDE, p,p-DDE, o,p-DDD, p,p-DDD, o,p-DDT, p,p-DDT, Endosulfan-I, Endosulfan-II, Endosulfan Sulphate and Lindane (all the standards were procured from Merck). Extraction was undertaken by blending 50 g of meat sample with 50 g sodium sulphate anhydrous, 120 ml of n-hexane, 120 ml acetone for 15 mins, extract was washed with distilled water and sample moisture is dried by sodium sulphate anhydrous, partitioning was done with 25 ml petroleum ether, 10 ml acetonitrile and 15 ml n-hexane shaken vigorously for two minutes; sample cleanup was done with florisil column. The reconstituted samples (using n-hexane) (Merck chem) were injected to Gas Chromatograph–Electron Capture Detector (GC-ECD). The present study reveals that, among the 50 chicken samples subjected for analysis, 60% (15/50), 32% (8/50), 28% (7/50), 20% (5/50) and 16% (4/50) of samples were contaminated with DDTs, Delta-BHC, Dieldrin, Aldrin and Alachlor, respectively. DDT metabolites, Delta-BHC were the most frequently detected OC pesticides. The detected levels of the pesticides were below the levels of MRL (according to Export Council of India notification for fresh poultry meat).

Biography

Lokesh L V has completed his MVSc from Karnataka Veterinary Animal & Fisheries Sciences University, Bidar, Karnataka, India. He worked on Plant Toxicology, "Toxicity studies of *Ficus amplissima* in rabbits & rats". He has joined Karnataka Veterinary Animal & Fisheries Sciences University as Assistant Professor, in the year 2011. Presently, he is pursuing his PhD degree programme from Veterinary College, Bengaluru and working on Residue Toxicology. He has been associated with organizing two International Workshops on Comprehensive Toxicology-2015 and International Seminar on Leachables, Extractables & Residual Solvents, as Treasurer. Further, he handled two university funded research projects, published 6 research papers in both national and international journals. He was awarded with various awards, bagged first place for oral presentation in National Seminar on Ethnopharmacology, Department of Pharmacology and Toxicology, College of Veterinary and Animal Sciences, Kerala and also bagged best poster award at 36th Annual Conference of Society of Toxicology (India) 2016, held at Amity University, Utter Pradesh.

lokeshlv2013@gmail.com

Notes: