Multi pesticide and PCB residues in Nile tilapia and catfish in Assiut city, Egypt

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Abstract:

The current study investigated the levels of multi pesticide residues in the highly consumed types of Nile fish in Egypt: tilapia and cat fish. A total of 50 Nile tilapia (Oreochromis niloticus) and 50 African catfish (Clarias gariepinus) were collected from two areas in Assiut city, where most industries are situated and where agricultural activities and raising of farm animals are the main activities. In the first area, Elwasta, there is an electrical power station, and the second area, Mankbad, there is a cement factory. Fish samples were analyzed by High Resolution Gas Chromatography/Mass Spectrometry. Average pesticide residue concentrations ± SE in muscle of tilapia and catfish (n = 10 pooled samples with five fish each) were determined. The results indicated the presence of different types of organophosphorous (OPs), organochlorine (OC), polychlorinated biphenyles (PCBs), hexachlorobenzene (HCB) and trifluralin pesticides in Elwasta and Mankbad in varying degrees. Diazenon was the only OP pesticide which exceeded the permissible limit in both investigated areas with the two types of fish. On the other hand, OCs, PCBs, HCB and trifluralin pesticide residue levels have not exceeded the maximum allowable concentration limit. In general, a higher pesticide residue level was obtained in Mankbad than Elwasta. In addition, higher values are realized for the detected pesticide residues in cat fish than tilapia. The results of the study have shown the extensive and recent use of these types of pesticides in the present time in Egypt.

Keywords:

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