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P77 - Application of IBA in the comparative analyses of fish scales as biomonitors of pollution

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Application of IBA in the comparative analyses of fish scales as biomonitors of pollution.

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Many natural resources have on a world-wide scale been contaminated by major industrial concerns. More so, most of these natural resources have been destroyed beyond remediation. However, only a few of these incidents are noticeable, such as the Exxon Valdez (1989), oil spillage, the Thor Company, 1988, Manica Province Mining, Mozambique, 2005 and mercury release into the environment. Alarming is the fact that most environmental pollution events occurred or are occurring over extended periods of time. It is thus difficult to pinpoint the sources of pollution and therefore also holding the perpetrators legally responsible. More alarming, fish found in the resources are used as dietary supplements, especially by individuals that reside near the natural resources. The scales of fish have been proven to be applicable in monitoring contamination of the natural resources. However, the morphology and chemical composition of the scale of various species differ to a significant degree. Consequently, the incorporation of contaminants into the scale structure will be different. There is a need of pilot study for contaminants which can harm the biota. The composition of the fish scales is different. To quantify the degree of incorporation onto the scale matrix we have analysed, using PIXE, RBS and SEM, the scale of four types of fish scales, that is, *Pomadasys kaakan*; *Lutjanus gibbus*; *Pinjalo pinjalo* and *Lithognathus mormyrus*. In this work we report on the viability of using various fish scales as monitors of natural resource contamination. These compositional data will then be used to pinpoint the dates on which the pollution events occurred.

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