

**VALIDATION OF LABORATORY METHODS FOR
TRACE METAL ANALYSIS IN FISH AND FISH
PRODUCTS**

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by

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Abstract

Fisheries sector in Sri Lanka has been involve for 1.8 percent of GDP at the current market and has been generated Rs. 31,792 million (US\$ 246Mn.) of export earnings in the year 2013. European Union is the key buyer chilled and fresh seafood products from Sri Lanka. Trace metals are one of the main fish contamination source in Sri Lanka. There are rules and regulations in the world for trace metals levels in fish during the export such as, EU regulations. In the world analytical and calibration laboratory follows the accreditation procedure, international regulations like ISO/IEC 17025. Analytical chemistry laboratory in NARA also trying to full fill ISO/IEC 17025 requirements. Method validation is one of the requirements of the ISO/IEC 17025. Method validation for trace metal analyzing procedure is very important to achieve reliable, accuracy and acceptable data. During method validation there is few validation characteristics should achieve within acceptable ranges. Especially accuracy is playing major role in method validation and also limit of detection and limit of quantification shows minimum levels that can be analyze by Atomic absorption spectrophotometer. Under this method validation procedure shows 0.5027 $\mu\text{g}/\text{kg}$ minimum level of mercury can analyze through this method, 0.7215 $\mu\text{g}/\text{kg}$ minimum level of arsenic can be analyze during this procedure and 0.126 $\mu\text{g}/\text{kg}$ minimum cadmium levels can be analyze. When calculation of the recovery each and every recovery values in sample shows between acceptable ranges. Due to that reason mercury, arsenic and cadmium analyzing procedure shows high accuracy and reliability results. Recovery values in fish and fish products show this method is suitable for Sri Lankan fish and fish products.