

**QUALITY ASSESSMENT OF PIN-LEH-NGA-KHU
(*PLOTOSUS CANIUS*) AND NGA-DAN (*PANGASIUS
PANGASIUS*) FOR LOCAL CONSUMPTION**

PhD (DISSERTATION)

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ABSTRACT

The catfishes are among the most important fish which serve as a source of food for mankind and are highly consumed by all levels and is in fact one of the items of their staple food. In this investigation, the samples of catfish viz., pin-leh-nga-khu (gray eel - catfish) (*Plotosus canius*) and nga-dan (yellowtail catfish) (*Pangasius pangasius*) caught from Myanmar waters were studied with regards nutritional point of view, health hazard point of view, and microbiological point of view to assess the quality of these fish samples. Chemical analyses of these catfishes such as pH, water, chloride, fat, total nitrogen, protein, ash and volatile organic compounds, total volatile base nitrogen (TVB-N), trimethylamine nitrogen (TMA-N), ammonia (NH₃), and histamine contents were investigated. Atomic absorption spectrophotometric determination of toxic heavy metals revealed that the concentration of metals (0.008 - 0.020 ppm Hg, 0.018-0.035 ppm Cd, 0.305 - 0.470 ppm Pb, and 0.004 - 0.071 ppm As) are well below the limits set by international recommended standard reference for Food and Drug Administration. Chemical changes were studied during storage at both refrigerated and room temperatures. Changes were more pronounced at room temperature. Results from the present work were analysed using two-tailed t-test. The correlation between the spoilage indicators were calculated using Statistical Package for Social Science (SPSS) 11.5 to Windows. Good correlations were observed between the spoilage indicators: pH, TVB-N, TMA-N and histamine and correlations were significant at P=0.01 level. Microbiological assessment of these fish samples showed the absence of food poisoning bacteria, *Salmonella* and

Vibrio cholerae. By petrifilm method, coliforms, *Escherichia coli*, and *Staphylococcus aureus* were found to be less than 10 CFU/g which were below the limit of International Commission on Microbiological Specifications for Foods (ICMSF). The total microbial counts were also lower than the ICMSF limit. Microbial changes during storage were also monitored.

Keywords: *Plotosus canius*, *Pangasius pangasius*, coliforms, *E.coli*, *Staph.aureus*, *Salmonella*, *V.cholerae*, spoilage indicators, SPSS.