ABSTRACT

In Punjab (Pakistan), most of the fish markets lack appropriate frozen storage facilities and have poor hygienic conditions. Due to improper practices throughout the fish supply chain, the chemical and nutritional quality of fish deteriorates progressively. Therefore, the current study was designed to evaluate the chemical and nutritional quality of edible fish species sold in markets of selected towns of Lahore i.e. Allama Iqbal, Data Ganj Baksh, and Aziz Bhatti town in comparison with the freshly caught fish to check whether the marketed fish is suitable for human consumption or not. Selected fish species were *L. rohita*, *O. niloticus*, and *R. rita*. The parameters used to evaluate the spoilage were total volatile basic nitrogen (TVBN) estimation, formaldehyde contents, pH, and proximate composition.

TVBN contents of *L. rohita* from Data Ganj Baksh town, *O. niloticus* from Aziz Bhatti, and Data Ganj Baksh town were significantly spoiled and considered unfit for human consumption. However, all fish species were found not to be adulterated by formalin solution. The pH level of *O. niloticus* from three towns was significantly high and the same trend was observed in *R. rita* from Aziz Bhatti town. The protein contents degraded in all three fish species in comparison to the freshly caught fish. Lipid contents were higher in marketed *L. rohita* and *R. rita* and lower in *O. niloticus*. However, the level of ash contents declines in all the fish species. The moisture level was low in *L. rohita* and *R. rita* whereas a slightly higher moisture level was reported in *O. niloticus*. Our results suggest the significant spoilage in the markets of Lahore. Therefore, fish marketing infrastructure must be improved to make sure that fish remains frozen throughout the entire supply chain to effectively reduce spoilage. There is a dire need for advisory services to guide consumers on safe fish consumption, to help them gain the maximum nutritional benefits.

Keywords: TVBN, formalin, proximate composition, spoilage, *L. rohita*, *O. niloticus*, and *R. rita*