

EVALUATION OF MICROBIAL LOAD IN SUN-DRIED AND INDUSTRIALLY PACKAGED SILVER CYPRINIDS (*Rastrineobola argentea*)

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ABSTRACT

Rastrineobola argentea, commonly known as ‘omena’ is a traditionally important fish species for food security and socio-economic development of the local communities around Lake Victoria and beyond. Contamination by potentially dangerous microorganisms can easily occur during storage, transportation and sale at open-air markets as the drying is normally done on the ground at landing sites. High microbial load may prove harmful even after cooking or frying owing to the fact that some microbes are heat resistant. Despite all this, there is very little data available on the risks posed to human health and associated with *R. argentea* consumption from the way it is handled through the supply chain. This study was done to determine and compare the microbial load in sun-dried and industrially packed *R. argentea*. Random sampling technique was used to select five supermarkets and five open-air markets within Eldoret town to obtain samples of industrially-packaged and sun-dried *R. argentea* respectively. The samples were evaluated for total bacterial load and *S. aureus* using standard laboratory media and biochemical tests. The results of this study indicated that bacterial load was significantly higher in sun dried samples than in industrially dried and packaged samples of *R. argentea*. For instance, the mean of total bacterial load was established to be 99 and 335 Colony Forming Units (CFUs) for industrially packaged and sun-dried *R. argentea* respectively. *R. argentea* continues to play a very important role in job creation, nutrition, income generation and food security, especially during dry spells when rain-fed agricultural activities are almost impossible. This study recommends that for food security to be realized, silver cyprinids need to be properly handled, dried and stored in order to reduce the levels of contamination with bacteria. Its consumption can be greatly enhanced if it is introduced into the human diet using modern and improved preservation and processing methods.

Keywords: Silver cyprinids, *Rastrineobola argentea*, bacterial load, *Staphylococcus aureus*, Food security.