

Research Application Summary

Quality and risk assessment of safety hazards in fresh fish and fish products in Malawi

Kapute, F.¹, Likongwe, J.S.¹, Kang'ombe, J.¹, Mfitlodze, B.¹ & Kiiyukia, C.²

¹University of Malawi, Bunda College of Agriculture, Aquaculture & Fisheries Science Department, P.O. Box 219, Lilongwe, Malawi

²Jomo Kenyatta University of Agriculture & Technology, P.O. Box 62,000 – 00200, Nairobi, Kenya
Corresponding author: fanuelkapute@yahoo.co.uk

Abstract

Food quality and safety issues are becoming a major concern globally due to increased and widespread emerging risks related to food borne illnesses. Countries around the world are creating food safety agencies in compliance with national and international food safety standards which Malawi also desperately needs. Unfortunately, current food safety system regarding fish and fish products faces mounting challenges due to outdated laws and also problems in food regulations and inspection procedures. Lack of up-to-date food quality standards also undermine Malawi's food exports, diminishing its ability to compete in regional and international markets such as the European Union. This study will examine public health issues associated with fish marketing and consumption in Malawi.

Key words: Fish quality, food safety, hazard analysis, Malawi

Résumé

Au niveau mondial, les questions de qualité et de sécurité des produits alimentaires deviennent une préoccupation majeure à cause des risques actuels croissants et répandus qui sont liés aux maladies présentes dans les aliments. A travers le Monde entier, les pays créent des agences de contrôle de sécurité alimentaire conformément aux normes de sécurité alimentaire nationales et internationales dont le Malawi a aussi besoin désespérément. Malheureusement, le système actuel de sécurité alimentaire concernant les poissons et les produits de pêche fait face aux défis énormes à cause des lois dépassées et également des problèmes dans les normes alimentaires et les procédures d'inspection. Le manque de normes actualisées de qualité des produits alimentaires défavorisent également les exportations des produits alimentaires du Malawi, diminuant sa capacité de concurrence sur les marchés régionaux et internationaux tels que l'Union Européenne. Cette étude examinera des questions de santé publique liées à la

commercialisation et à la consommation des poissons au Malawi.

Mots clés: Qualité des poissons, sécurité alimentaire, analyse de risque, Malawi

Background

Food safety issues are becoming a concern worldwide due to increased emerging risks related to food borne illnesses such as melamine, salmonella, swine flu, cholera etc. Fish are a highly perishable product that needs utmost care to prevent spoilage and microbial contamination that would pose a threat to the health and safety of the consumer. Malawi, where fish provides the most affordable dietary animal protein, needs food safety standards that comply with international standards. Unfortunately, the current food safety system regarding fish and fish products faces mounting challenges due to outdated laws and also problems in food regulations and inspection procedures. These challenges also undermine Malawi's food exports, diminishing its ability to compete in regional and international markets such as the European Union (EU).

Literature Summary

Awareness of food quality and safety and related issues such as quality, traceability, hazard analysis critical control point (HACCP) and certification is increasingly becoming a concern as trade in fish and fish products increase. FAO (2006) reports that globalization and expansion of the international food trade has led to the development of fish safety and quality standards that have a significant impact on the international fish trade. Malawi is not isolated and hence a call for heightened consumer awareness of food safety.

Study Description

This study will be carried out over a period of one year throughout Malawi beginning July 2010 to June 2011. In general, the study will provide indepth information on likely public health risks involving consumption of fish and fish products in Malawi. Specifically, the study intends to i) carry out an extensive review of the current fish quality and safety standards in Malawi, ii) carry out a risk assessment of quality and safety hazards in fish and fish products in Malawi to minimize the risk of food borne illness through conducting sensory, biochemical, chemical, physical and microbiological tests for local and imported fish and fish products in Malawi, iii) conduct a hazard analysis critical control point (HACCP) for local and imported fish and fish products, and iv) develop a traceability system for the fresh fish industry in Malawi.

	<p>Fresh fish samples for sensory analysis will be collected (purchased) from selected outlets. To maintain quality, fish will be immediately preserved in ice. The fish will then be carried to the laboratory at Bunda College for sensory analysis using the Quality Index Method (Hyldig and Petersen, 2004). Biochemical and chemical, physical and microbiological analysis will also be carried out. The Quality Index (QI) data will be analysed as described by Bonilla <i>et al.</i> (2007). Student's t-test and analysis of variance (ANOVA) will be computed by the Microsoft Excel for the bacterial counts where counts will be log-transformed before the statistical analysis.</p>
Research Application	<p>The field of fish quality and postharvest analysis is new in Malawi and so is the study. Results from this study will be instrumental in strengthening consumer safety in terms of fish and fish products in Malawi.</p>
Acknowledgement	<p>We thank the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) for the financial support towards the study which has just commenced.</p>
References	<p>Bonilla, A.C., Sveinsdottir, K. and Martinsdottir, E. 2007. Development of quality index method (QIM) scheme for fresh cod (<i>Gadus morhua</i>) fillets and application in shelf life study. <i>Food control</i>, 18, 352-358.</p> <p>Food and Agriculture Organization, 2006. Reforming fisheries and aquaculture in the Asia-Pacific. Asia-Pacific Fishery Commission (APFIC) Regional Consultative Forum Meeting. RAP Publication 2006/19. Kuala Lumpur, Malaysia</p> <p>Hyldig, G. and Green-Petersen, D.M.B. 2004. Quality index method – An objective tool for determination of sensory quality. <i>Journal of Aquatic Food Product Technology</i> 13(4).</p>