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Oil and gelatin from Nile perch (*Lates niloticus*) processing byproducts

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Nile perch is a major fish species in the East African region, with annual catch estimated at 400,000MT. Approximately 50% of total mass of Nile perch remains as processing byproducts from filleting. Nile perch skins and bones were used for production of gelatin while belly flaps were used for oil extraction. Highest gelatin yield was obtained from Nile perch skins. Nile perch gelatin was found to contain 21.5% imino acids, which is higher than values reported for temperate fish species. The functional properties of Nile perch gelatins were generally superior to those for commercially available temperate fish species, with skin gelatin generally exhibiting superior functionality to bone gelatin. The properties of Nile perch gelatin were also found to vary with size of fish and these differences were associated with differences in molecular weight distribution. The fatty material yield and oil composition were found to vary with fish size, catch area and season. Nile perch from Lake Victoria had higher fatty material yield and omega-3 fatty acids (FAs) but lower content of vitamin A than that from Lake Albert. Omega-3 FAs values decreased significantly with increase in fish size. Large fish category had the highest amount of fatty material yield and vitamin A followed by the medium while the small category had the lowest. Organochlorides and heavy metal contamination was generally low. On the whole, Nile perch by products seem potential raw materials for production of gelatin and oil for pharmaceutical, food and other industrial applications.

Biography

J H Muyonga is a Professor of Food Science and Dean at School of Food Technology, Nutrition and Bioengineering at Makerere University. He holds a BSc in Food Science from Makerere University, an MS in Food Science from Cornell University and a PhD from University of Pretoria. He is passionate about research commercialisation and strengthening industry-university linkages. His research covers aspects of food protein chemistry, characterisation of nutraceutical components from food materials, food lipids and the effect of processing on nutritional and functional properties of foods. He has published widely, with over 1200 citations in widely indexed journals.

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