

ENERGETIC CONTENT OF SELECTED COMMERCIAL FISH SPECIES OF LAKE

EDWARD AND GEORGE, WESTERN UGANDA

BY

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Abstract

A study to assess variations of energy content among fish species and among size groups of the same fish species in Lakes Edward and George was carried out to reflect on the effect of food source and utilization on the performance and wellbeing of fish. This will thus contribute to the required database towards enhanced management strategies on the fisheries of these lakes. The three fish species, *Bagrus docmak*, *Clarias gariepinus* and *Oreochromis niloticus* were randomly sampled from fisherman's catch at selected 6 fish landing sites of Lake Edward and Lake George during the period May to August 2012 and April 2013. Following preparation of collected fish samples, gross energy content per gram of each fish species under study were determined in triplicate by use of a bomb calorimeter in the Physical Chemistry Laboratory of the Department of Chemistry, Makerere University.

Lake Edward's *Bagrus docmak*, *Clarias gariepinus* and *Oreochromis niloticus* fish species presented more calories per gram than those from Lake George. There was no significant difference in energy content between *Bagrus docmak* and *Clarias gariepinus* ($P=0.702$). The energy content between *Bagrus docmak* and *Oreochromis niloticus* from the two lakes was

significantly different ($P < 0.000$). Similarly there was a significant variation in energy content between *Clarias gariepinus* and *Oreochromis niloticus* from Lake Edward and George. However, *Bagrus docmak* presented more energy returns compare to *Clarias gariepinus* and *Oreochromis niloticus* in that order in both lakes. Significant differences in energy content among size groups; 1 (Juvenile), 2 (adult) and 3 (adult) of the three fish species from these two lakes was recorded ($p < 0.000$). Significant differences in energy content amongst the three fish species is mostly attributed to the different feeding habits. The comparatively higher energy returns among fish species in Lake Edward than in Lake George could reflect a diverse food base for the former. This is an indication that to a great extent, performance and wellbeing of fish species translates from food availability. Fisheries management strategies should therefore ensure protection of the fishery food bases of the two lakes especially Lake George through serious mitigation measures of possible shockers of the environment.