



Affiliation: Jomo Kenyatta University of Agriculture and Technology, Department of Zoology

Specialization: Aquatic Ecology and Conservation Biology

Research interest: Understanding the ecology and biology of invertebrates and other aquatic resource. Designing low-cost and sustainable fisheries and aquaculture systems as well as fish feeds with a key focus on live food culture, fish larvae culture and fish nutrition.

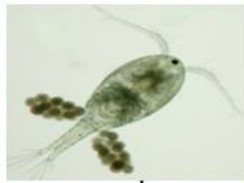
Current Research Interest and ongoing projects

Studies on improving culture stability and viability of live foods: Effects of waste generated bacteria and commercial probiotics on growth performance of live foods.

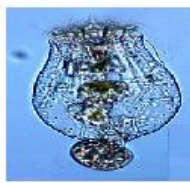
Goal: 1. Assess the effect of waste generated bacteria/ commercial probiotics on population growth, reproductive behavior and locomotory behavior of live feeds; 2. Evaluate the dietary value of live feeds co-feed on bacteria and micro-algae; 3. Elucidate the effect rotifer encapsulated with bacteria on marine fish larvae growth, immunity and digestive enzymes.



Artemia



copepods



rotifers



cladocerans



Low-cost sustainable technologies for tropical aquaculture: Enhancing food security through extensive research in aquaponics

Aquaponics is a modern dual-production system that creates a symbiotic relationship between aquaculture and crops grown in hydroponic systems. The aim of this study is to develop a low-cost aquaponics system for small and medium scale farmers with a view of improving food security in Kenya. This study assesses the growth and physiology of Nile Tilapia (*Oreochromis niloticus*) and African catfish (*Clarias gariepinus*), as well as, the filtration efficiency of African indigenous vegetable, amaranth (*Amaranthus cruentus*) grown on pumis. This research has been ongoing since 2016 with funding from JICA. Currently two Ph.D. students are attached to this project.



Impact of climate change on plankton community structure, land use and social livelihood of small holder farmers along the Lake Turkana basin, Kenya

Blue economy is an emerging frontier concept for sustainable utilization and healthy productivity of freshwater and ocean ecosystems for improved livelihoods. Seasonal variations in weather patterns and increased anthropogenic activities contribute to the shift in diversity and distribution of the aquatic bioresource. Mapping such effects is important in the development of prediction models for management of water resources. This research has been submitted for funding and one Ph.D. and one M.Sc. students are engaged on this work.

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