

## Isolation, culture and identification of *Lactobacillus* species from the gut of *Sphyraena sphyraena*, *Chrysisthys nigrodigitatus* and *Clarias gariepinus* for use as probiotics in fish feeds

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Disease outbreak is increasingly recognized as a significant constraint to aquaculture production and trade. Bacterial infections are part of the causes of mortality in fish. Use of antibiotics resulted in resistant strain of bacteria in fish. The use of *Lactobacillus* as probiotics is now being investigated as alternative. Studies were carried out to isolate and identify probiotics from the guts of *Sphyraena Sphyraena* (Marine water), *Chrysisthys nigrodigitatus* (brackish water) and *Clarias gariepinus* (freshwater). Guts removed from dissected fishes were divided into 3 regions: foregut, midgut and hindgut. These samples were mixed homogeneously in sterilized phosphate buffer saline (PBS) separately and allowed to pour in MRS broth and agar medium. *Lactobacillus* was isolated from fish guts using MRS agar and broth. There was subsequent culture and subculture of *Lactobacillus* to obtain discrete colonies. Single colony of *Lactobacillus* was isolated using colony morphology and some biochemical tests. The identity of the culture was determined by using Bergey's manual of Determinative bacteriology, (API- 50 CHL, BioMérieux). Bacteria isolated from the foregut, midgut and hindgut were identified as *Lactobacillus brevis* and *Lactobacillus plantarum* from *Sphyraena Sphyraena* (Marine water), *Lactobacillus plantarum* and *Lactobacillus pentosus* from *Chrysisthys nigrodigitatus* (brackish water) and *Lactobacillus plantarum*, *Lactobacillus pentosus* and *Lactococcus lactis ssp lactis 1* from *Clarias gariepinus* (freshwater). Population level of bacteria was higher in the midgut and hindgut region than observed in the foregut region. Microscopically they were Gram-positive, rod shaped, non- motile, catalase negative and absence of Endospore. The isolates would be evaluated for fish feed supplement as probiotics.

### Biography

Caroline Ayo-Olalus is a research scientist at the Department of fish technology, Nigerian Institute for Oceanography and Marine Research Lagos, Nigeria. She is a fish Nutritionist specializes in fish feed production from locally available fish feed ingredients. She has published extensively in reputable journals. She is currently a PhD student at the University of Ibadan, Ibadan, Nigeria. She has recently won a research grants from Agricultural research council of Nigeria on the "Potential benefits of probiotics on the immune response and growth of some culturable fish species" where she is the Principal Investigator. She has attended many conferences and workshops.

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