

Abstract

Microflora is the community of microorganisms present on external surfaces as well as inside the gastrointestinal tract of organisms and is termed as 'Gut Microflora'. Microflora of the environment plays an important role in the formation of the microflora of the digestive tract of fishes. Compared to water, ecosystem of digestive tract is far richer in nutrients and therefore more favorable environment for the growth of the majority of bacteria. Composition of these bacteria largely depends on the diet, surrounding water, temperature and other environmental conditions. Fish is continually exposed to water so a large number of bacteria reside on its external surfaces such as gills and epithelial linings. Microflora present in the gut of fishes also varies with their nutritional habits and surrounding water. Many bacterial species such as *Vibrio*, *Aeromonas*, *Bacillus*, *Pseudomonas*, Enterobacteriaceae, *Acinetobacter*, *Flavobacterium*, *Photobacterium*, *Microbacterium*, *Micrococcus*, *Staphylococcus* etc. reside in their gut. Present study was also conducted to isolate gut microflora from farm cultured freshwater fish *Labeo rohita*. Morphological and biochemical characterization of pure isolated suggested that they belong to belong to *Bacillus*, *Staphylococcus*, *Escherichia*, *pseudomonas* species of bacteria. Some probiotic strains were also isolated from fish gut. Probiotics are now widely used in aquaculture as food additives because of their beneficial effects on fish health and growth. They are used against antibiotics to combat diseases and modulate immunity responses. Gut microbiota helps in the digestion of many complex proteins and emulsifies fats. They also form symbiotic relationships with their host animal and provide many benefits to them. Many of them also form mutualistic or commensal association with their host.