Microbiological qualities and antibiotic susceptibility of bacteria from fresh and smoked fish from Ikeji-Arakeji market Osun State, Nigeria.

Abstract

Fresh and smoked catfish serves as a source of protein, but their microbiological qualities remain significant concern for public health. This study investigated the microbiome of fresh and smoked catfish and their susceptibility to antibiotics. Samples of fresh and smoked catfish were collected from Ikeji-Arakeji market, bacteria and fungi were isolated and antimicrobial susceptibility was accessed. The results obtained indicated total bacteria count of fresh catfish isolates ranged from $2x10^4$ to $12x10^4$ Cfu/g, while the results obtained indicated total bacteria count of smoked catfish isolates ranged from $3x10^4$ to $9x10^4$ Cfu/g. A total number of six bacteria were isolated from the catfish samples, which were *Escherichia coli, Staphylococcus aureus, Bacillus subtilis, Micrococcus luteus, Pseudomonas aeruginosa* and *Proteus vulgaris.* Four were found in smoked fish samples, *Escherichia coli, Staphylococcus aureus, Bacillus subtilis* and *Micrococcus luteus ,* the percentage prevalence indicated *Staphylococcus aureus* had highest of 47% while *Escherichia coli* had lowest of 15%, while five were found in fresh catfish, *Escherichia coli, Staphylococcus aureus, Bacillus subtilis, Pseudomonas aeruginosa* and *Proteus vulgaris,* the percentage prevalence indicated *Pseudomonas aeruginosa* had highest of 36% while *Escherichia coli* had lowest of 8% .Three fungi were isolated from fresh and smoked catfish which were *Aspergillus sp., Mucor sp., Penicillum sp*., the percentage distribution indicated *Aspergillus sp.* had lowest of 8% while *Mucor sp*. had highest of 62% in smoked catfish, while *Aspergillus sp.* had lowest of 28% while *Penicillium sp* . had highest of 62% in smoked catfish. The antbacterial susceptibility of the isolates indicated *Bacillus subtilis, Micrococcus luteus* were found to be susceptible to eight of the antibiotics used while *Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa* and *Proteus vulgaris* were susceptible to six antibiotics. This study confirms the presence of some pathogenic bacteria and fungi isolates from the frozen and smoked catfish which are of public health significance.

Key Words: Fish, microbiome and antibiotics.

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