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Characterization and Antibiotic Susceptibility Profile of Bacteria Isolated from Seafoods Sold in Coastal Cities of India

Seafoods are highly perishable commodities as they deteriorate faster due to bacteria occurring naturally in marine environment. This limits the shelf life of the seafoods which may eventually become unfit and unsafe for human consumption. The present study was aimed at isolation and characterization of bacteria from fresh seafoods along with determination of antibiotic susceptibility profile. Ninety samples of seafishes comprising of Indian Sardine (*Sardinella longiceps*) and Indian anchovy (*Stolephorus indicus*) sold in three different forms were collected from the seacoasts of Chennai, Cochin, Kanyakumari, Mangalore and Tuticorin. The samples were transported in sterile saline bags and kept refrigerated until further processing. Ten gram of each sample was homogenized and bacterial enumeration was done using plate count agar. Selected colonies were morphologically, culturally and biochemically characterized on selective and differential media. Antibiotic susceptibility profiling was carried out using Kirby Bauer's agar disc diffusion method and the diameters of the inhibitory zones were recorded. The standard plate count ranged between 3.9×10^3 and 17000×10^3 cfu/g. 220 bacterial isolates were obtained with 81% isolation frequency for Gram-negative bacteria. The isolates demonstrated lipolytic, proteolytic, ureolytic, deaminase producing-, hydrogen sulphide producing -, gelatinolytic and acid producing abilities. 16% of the isolates demonstrated beta hemolysis. The presumptive identification revealed the presence of members belonging to the genera *Escherichia*, *Staphylococcus*, *Listeria*, *Salmonella*, *Vibrio* and *Pseudomonas*, indicating the potential to cause spoilage and hemolysis. Majority of the isolates exhibited resistance to vancomycin, ceftazidime and cefazolin. Regular testing, implementation of hygienic practices and appropriate storage of the seafoods are recommended.

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