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EXTENDED ABSTRACTS

Bacterial and Fungal Population Assessment in Smoked Fish during Storage Period

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ABSTRACT

Fish and fisheries products are the vital good nutritious food everywhere the planet which represents about 15-20% of all animal protein on a worldwide basis. But the nutritional value in fish mostly depends on the freshness of fish. Damage of fish starts with the death of fish thanks to enzymatic digestion, oxidation of fat and bacterial decomposition. But Microbial action has been playing an outsized role within the spoilage of fish. all kinds of foods has its natural characteristics like appearance, texture, smell, taste and flavor. If any change in one or more of those characteristics of food indicates the food spoilage which can cause illness due to the presence of pathogenic microorganisms and their toxins. After the death of fish, spoilage bacteria enter the muscle from the skin and gills, disintegrate the muscle cells and take necessary energy to grow. So, differing types of processing and preservation methods must be followed as soon as possible after the catching of fish to stay the freshness and nutritive value of fish. The purpose of fish preservation is to succeed in the fish or fisheries product to an ultimate consumer in good and usable condition. differing types of fish preservation methods like chilling and icing of fish, freezing of fish, sun drying of fish, smoking, salting, fermentation, canning of fish etc. are followed mostly altogether the regions of Bangladesh to succeed in the fish or fisheries product to an ultimate consumer in good and usable condition and stop or reduce the post-harvest losses. Smoked fish is very accepted food items in our country but haven't practiced altogether the regions of Bangladesh. Smoking is that the method of fish preservation effected by a mixture of drying and deposition of naturally produced chemicals resulting from the thermal breakdown of wood (Smoldering/smoke production). Smoking gives the merchandise a desirable colour, taste and odour, an extended shelf-life through its anti-bacterial and oxidative effect, lowering of pH and acts as antagonist to spoilage. The smoked fish products have gained a well-liked market at commercial basis thanks to its attractive colour, flavour and aroma and have a high potentiality as a processed item in Bangladesh for commercialization. But smoked fish and shellfish products are often a source of microbial hazards including Listeria monocytogenes, Salmonella spp., botulinus etc. thanks to the unhygienic and lack of cleanness, handling, marketing and storage or thanks to the partial removal of water activity during production. Raw smoked fish are generally eaten in many countries. If the smoked fish are contaminated with pathogenic microbes, this will cause the fatal diseases within the physical body. Here during this study, the used media for enumeration of bacterial load was prepared media by Merck, Germany. For enumeration of bacterial load, the petri-dish containing culture media was inoculated with l00 µl of every diluted solution of every sample using spread plate method. For enumeration of total aerobic bacteria in smoked fish sample, agar media was used as culture media and incubated at 37°C for 18-24 h within the incubator after inoculation. For the enumeration of total and fecal coliform, Membrane fecal coliform (mFC) agar media was used and inoculated media were incubated at 37°C for 18 to 24 h within the case of total coliform and within the case of fecal coliform at 44 to 44.5°C for overnight. TCBS thiosulfate citrate bile sucrose) plate was used as selective media for identification of Vibrio spp. consistent with the which were incubated at 37°C for 18-24 h to count the colonies of Vibrio spp. Yeasts and molds spp. were identified and counted on OGYEA (Oxytetracycline-Glucose-Yeast Extract Agar) plate which were incubated at 22 ± 2°C and examined for growth up to five days of incubation. Bacterial density data is transformed into natural log before statistical analysis. The means of bacterial load were compared using ANOVA followed by Tukey's post hoc ergo propter hoc for multiple comparisons. Microsoft Excel 2010 and Statistical software SPSS version 16.0 was wont to analyze the info with the extent of significance at p

Keywords: Smoking; Smoked fish- Microbial load; Total bacterial count; Total coliform; Vibrio spp.; Food safety

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