

An Overview On Fish Smoking, Nutritional Quality, Wood Biomass, And Their Effects On Health

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Abstract

Fishes are susceptible to spoilage which occurred as a results of different factors including high level of temperature, weather, acidity, processing and storage methods and during transportation. This lead to a significant loss during storage of fresh fish samples. Spoilage of fish can be achieved through subjecting the fresh samples to smoking. Cold or hot smoking method to improve shelf-life. The main purpose of this review focused differentiate fish smoking method and the effect of wood biomass on the smoked fish product. The method involved processing and smoking raw fresh fish species with different fuel-wood species to ascertain the quality of the smoked products based on the chemical composition of the smoked fish, composition of the woods biomass and the volatile compounds; both beneficial such as color, aromatic and flavor improvement as well as he harmful effect such as polycyclic aromatic hydrocarbons (HAPs) which poise a severe health effect. Pyrolysis generated from Wood smoke consist of complex mixture of liquids, solid particles and gases (aerosol) due to incomplete burning, pyrolysis or combustion of the wood biomass such as; charcoal, wood chunk, sawdust, wood pellets etc. at an elevated temperatures with reduced oxygen level. Besides the main product of pyrolysis which is 'carbon dioxide and water', wood biomass contain approximately more than 200 different organic compounds identified to induce mild, acute or severe chronic health effects when accumulated in humans body. The nutritional composition of smoked fish samples includes; crude fibre, water content, protein, ash content, amino acids, minerals, phenols and biogenic amines. All the locally available woods species that impart desired colour and flavor also contain minimal level of 0.2 – 5.0 milligram of PAHs per cubic meter of air i.e. (0.2 – 5.0 mg/M³) are recommended as safe, while at high concentration of 10 and 15 milligrams of PAHs per cubic meter of air is generally considered unsafe and could pose a chronic health challenge.

Keywords: Fish, Woody Biomass, Smoking, Composition, Health Effects

