

Selection and Comparison of Two Wood Smoke and Fruit Juices as Flavorings on the Physiochemical and Sensory Qualities of Catla (*Catla catla*)

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Fish is a highly nutritious food and preserved in many ways. Preservation affects the physical and nutritional composition of fish. Smoking improves the colour and flavour of fish while extending the shelf life. Catla (*Catla catla*) is an exotic fish species currently harvested from reservoirs in Sri Lanka. It contains major and minor nutrients but poor preference among consumers due to the muddy taste and unpleasant odour. This study was conducted to identify specific wood smoking conditions while comparing the physiochemical and sensory qualities of smoked Catla flavored with pineapple and orange juice stored under chill (4°C) and frozen (-18°C) conditions. Frozen Catla was thawed, made into steak, and washed. Pre trials were conducted to find out the best brining time, brining concentration, smoking agent, and smoke level. Accordingly, wood-smoked (1Cinnamon: 1Mahogany) Catla flavored with pineapple juice and orange juice were produced. The steaks were immersed in brine containing 10% (w/v) NaCl (dip and allow to drain) and smoked at 107°C for 40 minutes along with pineapple and orange juice separately. Final products were vacuum-packed and stored at 4°C and -1°C for analysis. Microbial quality (*Escherichia coli*, *Salmonella sp.* and Total plate count), TBARS, pH, colour, and texture were detected during 21 days of storage, and proximate analysis was conducted for the raw fish and the final products. Microbial count and lipid oxidation were within the permitted levels in both fruits flavored smoked fish compared under two storage conditions for 14 days. Frozen storage was better in extending the shelflife for the lower microbial counts and lipid oxidation when compared to the chill storage. In conclusion, immersing Catla steaks in 10% (w/v) NaCl followed by smoking at 107°C for 40 minutes with pineapple juice or orange juice using 1:1 combination of cinnamon: mahogany can be considered as the best conditions to produce smoked Catla.

Keywords: Catla catla, Wood smoking, Sensory qualities, Physiochemical properties