Microbial growth, sensory characteristic and pH as potential spoilage indicators of chinese yellow wet noodles from commercial processing plants.

Abstract

Problem statement: This study was conducted to evaluate the potential use of microbial growth, sensory characteristic (odour) and pH as potential spoilage indicators of Chinese yellow wet noodles. Approach: Samples were collected from 3 commercial processing plants namely, Automated Processing (AP), Semi-automated Processing (SP) and Manual Processing (MP). The samples were kept at ambient temperature (28±2 ºC) and monitored microbiologically for ten days. Standard Plate Count (TPC) and Yeast and Mould Count (YMC) were determined using conventional spread plate methods. Sensory evaluation of noodles was carried out using Quantitative Descriptive Analysis(QDA). Results: Initial TPC for all samples were around log 3 CFU/g which significantly increased to around log 7 CFU/g towards the end of storage period. The same pattern was observed for YMC for all samples. Odour of AP, SP and MP samples began to deteriorate and samples became unacceptable to panelists on 3, 4 and 2 days of storage, respectively. Linear regression analyses between storage period and the various potential spoilage indicators demonstrated the strongest correlation for all samples between the storage time and odour (r = 0.81243 - 0.93856 and p=<0.0001). Correlation between the storage period and TPC and YMC for AP samples were also strongly correlated (r = 0.80122 - 0.8573 and p = <0.0001). The correlation between storage time and TPC as well as YMC for both SP samples and MP samples were moderately correlated (r = 0.500 – 0.700 and p<0.05). Correlation between the storage time and pH were inversely correlated for all samples (r = - 0.61439 to -0.74931 and p = <0.0001-0.0003). Conclusion/Recommendation: Taken together, odor is the most suitable to be used as spoilage indicator for Chinese yellow wet noodles.

Keyword: Chinese yellow wet noodles; Microbial growth; Sensory, Spoilage indicators.