Preservation of fresh rice noodles under ambient condition

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Noodles are a popular food among the Sri Lankan consumers due to its taste and easiness in preparation. However almost all noodles available in the local market are wheat noodles. The cost of production is the limiting factor in popularizing rice noodles in Sri Lanka. Hence, this study was undertaken to develop a suitable preservation method for fresh rice noodles in order to cut down the cost of production.

Fresh rice noodles were prepared with preservatives of 3% of ethanol, 1% of calcium propionate and 0.1 % of benzoic acid in seven treatment combinations, packaged in polypropylene pouches and stored under ambient conditions of 32±3°C and 80±5% RH. The suitable preservative combination was selected, based on microbial count, pH value and subjective measurements of odour, appearance and eating quality. The shelf lives of fresh rice noodles, packaged in polypropylene (PP), polyethylene terepthalate (PET)/linear low-density polyethylene (LLDPE) and nylon/low density polyethylene (LDPE) were determined based on microbial count, pH value and subjective measurements of odour, appearance and eating quality. The acceptability of the product was tested by comparing the preserved product with the fresh noodles using nutritional and sensory evaluation.

Raw rice noodles prepared with benzoic acid and propionic acid showed the lowest microbial count and the highest pH value and it was significantly different from that of other treatments except the sample that was prepared using all three chemical preservatives. However, the subjective measurements revealed that the noodles prepared with all three chemical preservatives were unacceptable due to its bad odour. The microbial count of fresh noodles started to increase significantly at 12^{th}, 24^{th}, 30^{th} days and reached to unsatisfactory levels at the 18^{th}, 30^{th} and 36^{th} days after packaging in polypropylene, PET/LLDPE and nylon/LDPE pouches, respectively. There was no significant difference in nutritional value and sensory quality attributes of preserved rice noodles with the fresh noodles.

The results revealed that addition of 1% of propionic acid and 0.1% of benzoic acid to the dough mixture was effective in preservation of fresh rice noodles. The shelf lives of preserved noodles packaged in PP, PET/LLDPE, Nylon/LDPE was 18, 27 and 36 days, respectively under ambient conditions, and the product is acceptable at the end of shelf life.