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Study of Rheological and Sensory Properties of Reduced-Salt Probiotic Ashi Noodle

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Pasta and noodle products have existed for thousands of years and play an important role in human nutrition and culture. World consumption of pasta and noodle products has increased in recent years, due to the ease of transportation, cooking, mechanizations, and development of infrastructure. Ashi noodle is a type of noodle produced in Iran by mixing wheat flour, salt and water. It has been reported that incorporation of salt has a remarkable impact on product quality but, it has detrimental effect on human health and induces renal impairments. Also, there is an increased consumers' demand for healthy food while maintaining quality and sensory properties Therefore, reduction of salt in food products such as Ashi noodles can be a challenge of investigation. This study was carried out at two stages. At the first stage, the effect of salt (2 and 3%) and guar and xanthan (0.5 and 1%) addition to Ashi noodles on rheological (water absorption, dough consistency, gluten softening degree, starch gelatinization, amylase activity and starch retrogradation), physiochemical characteistics (moisture and ash content) and sensory properties was investigated. The results showed that by increasing hydrocolloids concentration and decreasing salt level, water absorption, strach gelatinization and starch retrogradation were significantly increased, whereas gluten softening and amylase activity were decreased. Regarding the results obtained, samples with 1% xanthan and 2% salt were recognized as the best in terms of rheological, physiochemical and sensory properties. At the second stage of the study, low-salt probiotic Ashi noodles were prepared by using *Bacillus subtilis* and *Bacillus coagulans* (109 cfu/g) and viability and sensory characteristics of the samples were studied. The results showed that the number of *B. subtilis* and *B. coagulans* reached from 7.13× 108 and 5.57× 108 cfu/g (in preparation stage of dough) to 3.4× 107 and 3 × 107 cfu/g (after baking), respectively. Ashi noodles containing *B. subtilis* was the best treatment in terms of sensory properties at this stage.

Biography:

Dr. Mortazavian (associate professor of Shahid Beheshti University of Medical Sciences) was born in 1978 in Iran. He was graduated (MSc and PhD of Food Technology) from University of Tehran (Iran). His professions are Dairy and probiotic technology. He has published 7 books and more than 100 research articles. He has many national and university research awards and honors; and is a member of Iran National Élites Foundation. Dr. Mortazavian is Vice President of Educational Affairs in faculty and the manager of Students Research Center at University as well as consultant of some governmental organizations regarding standardization, regulation and surveillance.