DEVELOPMENT OF NATURAL FLAVOR ENHANCER FOR TASTEMAKER SPICE MIXTURE OF INSTANT NOODLES FROM TOMATO (*Solanum lycopersium*) AND EVALUATION OF ITS QUALITY PARAMETERS

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ABSTRACT

Mono sodium glutamate (MSG) is one of the widely used flavor enhancer which gives characteristic umami flavor. It is mainly used for the spice mixture of instant noodles as a seasoning ingredient. But it is identified as highly carcinogenic substance thus it is essential to find an alternative to MSG. Tomato is a good source of glutamic acid, which provides a natural umami flavor. So that it could be introduced as an alternative to MSG. Therefore, objective of this study is to evaluate the quality parameters of fresh tomato pulp and develop a natural flavor enhancer for tastemaker spice mixture of instant noodles from micro-encapsulated tomato powder. In this study, Padma F1 hybrid tomato variety was selected and two different freeze dried tomato powdered samples were prepared. First sample was prepared by using microencapsulation with 10% Gum Arabic (GA) and other sample was freeze dried without GA. Proximate composition, antioxidant activity and lycopene content of fresh and freeze dried tomato samples were analyzed by using AOAC 2000, 2,2- diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay and the physio-chemical properties (pH 5.126±0.00, TSS 4.533±0.05, Titratable acidity 0.4906±0.01, moisture% 6.50%±0.00, color, texture, water activity 0.4979±0.00, antioxidant content 1.49 mg/ml) and proximate analysis (Ash content 0.072733±0.000, crude protein 0.117567±0.00, crude fat 0.104450±0.00) were analyzed for the product according to standard AOAC methods. The GA coated powder sample which shows the highest antioxidant activity was chosen as the best freeze dried powder sample. Then four recipes were developed using different amounts (0.25, 0.5, 1, and 1.5 g) of GA coated powder sample, while all other ingredients remained constant. Sensory evaluation was carried out for 25 untrained panelists by using hedonic and ranking tests and spice mixture containing 1.5g of GA coated tomato powder was selected as the best recipe. It can be concluded that microencapsulated freeze dried powdered tomato could be effectively used as a flavor enhancer for the spice mixtures used in the instant noodles industry. However, further studies should be needed to evaluate the shelf life of the final product in order to ensure the stability of the final product.

Key Words – Mono sodium glutamate; Umami taste; Tomato powder; Micro-encapsulation; Gum Arabic