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## The Instant Beverage Formulation Based on Small Crab Chitosan's (*Portunus pelagicus*) and Green Tea from Indonesia

ENY PALUPI<sup>1</sup>, MAGGY T. SUHARTONO<sup>2</sup>, ANGELIKA PLOEGER<sup>3</sup>

<sup>1</sup>University of Kassel, International Food Business and Consumer Studies, Germany

<sup>2</sup>Bogor Agricultural University, Department of Food Science and Technology, Indonesia

<sup>3</sup>University of Kassel, Department of Organic Food Quality and Food Culture, Germany

### Abstract

Produce chitosan from the small crab shells has become an alternative solution of some problems of water pollution in Indonesia. Chitosan, the polymer of N-glucosamine with  $\beta$ -1,4 bond, has a hypocholesterolemic properties by binding cholesterol, lipids, and several other lipid derivatives when pass through gastrointestinal tract, and secreting them into faeces. To develop a new food product using the small crab chitosan's, the formulation of instant beverage from small crab chitosan's (*Portunus pelagicus*) and green tea has been established. Green tea was selected because having a familiar taste, contrary with small crab chitosan's which is tasteless and novel. This combination has been expected to be able to produce the acceptable food product. Small crab chitosan's (degree of deacetylation 72.4% and viscosity 19 cP) was produced by using the modified Suptijah method (1:14 vol. NaOH 50% v/v, +140°C, 2 hours, air atmosphere, and aquadest as last washer). The instant beverage formulation has been done by running two sensory evaluation stages using 30 trained assessors. The first stage was established to formulate the most acceptable instant small crab chitosan's by using edible film technique producing 8 different recipes from full factorial design between solvent (acetic 1% and lactic 1% v/v) and sorbitol concentration as plasticizer (0, 2.5, 5, and 10 g l<sup>-1</sup>). And the second stage was established to formulate the most acceptable combination between instant small crab chitosan's (g l<sup>-1</sup>) and instant green tea (2.5, 5, and 10 g l<sup>-1</sup>). The acceptance and the preference were measured by using acceptance rating test (colour, aroma, texture, and taste) and overall simple ranking test in the both stages. The results showed that acetic 1% v/v and sorbitol 2.5 g l<sup>-1</sup> produced the most acceptable instant small crab chitosan's. In the second stage, 5 g l<sup>-1</sup> instant small crab chitosan's and 2.5 g l<sup>-1</sup> instant green tea has been chosen as the most acceptable combination. Further assessment of functional effect from this new product still need to be developed.

**Keywords:** Chitosan, green tea, hypocholesterolemic, instant beverage, *Portunus pelagicus*, small crab