

ABSTRACT

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OPTIMIZATION OF ANTIOXIDANT PROPERTIES AND SENSORY ACCEPTABILITY OF MATCHA CAJUPUTS CANDY

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Cajuputs® candy is a functional candy to maintain oral health. Matcha is known to contribute to oral health and also has antioxidant activity. Four matcha types, namely samidori, gokou, yabukita and Indonesian antioxidant properties were assessed. Indonesian matcha with an IC_{50} value of 15.7 ± 1.4 mg/L has the highest antioxidant properties. Sensory evaluation was performed towards 2 and 4% matcha cajuputs candy. The addition of 2% Indonesian matcha showed comparable overall hedonic value with other types. Indonesian matcha was chosen for the main research and added at a concentration between 2 to 4%. One factor response surface methodology was used to determine the optimum matcha added concentration. The optimum matcha concentration generated by Design Expert 10.0.7® was 3.375%. Optimum product of cajuputs candy was made and the antioxidant properties and sensory acceptability were compared to control. The antioxidant activity (IC_{50} value), phenolic content, flavonoid content were 457.0 ± 13.7 mg/L, 1148.7 ± 44.4 mg GAE/100 g candy and 21.3 ± 0.6 mg QE/100g candy respectively for the optimum product and 279300 ± 15200 mg/L, 10.0 ± 0.4 mg GAE/100 g candy and 0.4 ± 0.02 mg QE/100 g candy respectively for the control. The sensory acceptability is between neutral to slightly like (4.2 ± 1.2 , 4.5 ± 1.3 , 4.7 ± 1.4 , 4.7 ± 1.0 for color, mouthfeel, taste and overall respectively) for optimum product and between neutral to like (4.9 ± 1.7 , 5.6 ± 1.1 , 4.6 ± 1.1 , 4.8 ± 1.2 for color, mouthfeel, taste and overall respectively) for control. The optimum product has significantly higher antioxidant activity (IC_{50} value), total phenolic content and total flavonoid content, but lower hedonic scores of color and mouthfeel than the control ($p \leq 0.05$).

Keywords: Antioxidant, cajuputs candy, cultivar, matcha, optimization, response surface methodology, type, variety

References: 72 (2000-2017)