

## ABSTRACT

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### **ANTIBACTERIAL ACTIVITY OF BETEL LEAF (*Piper betle* L.) JELLY CANDY ON *Streptococcus mutans***

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Confectionery products with oral health-intended use are quite popular. Jelly candy is a type of confectionery product made using gelling agent. Betel vine (*Piper betle* L.) is a plant well-known for its antibacterial characteristics. In the making of betel leaf jelly candy, the betel leaf extract was incorporated into the candy to inhibit the growth of *S. mutans* as cavity-causing bacteria. This research was aimed to determine the best solvent type (hexane, ethyl acetate, and ethanol) in a sequential extraction to inhibit the growth of *S. mutans* and to incorporate the chosen extract into jelly candy to assess its antibacterial activity as well as sensory acceptability. Results showed that ethyl acetate betel leaf extract had the strongest antibacterial activity against *S. mutans* with MIC of 12887 ppm. Jelly candy was then made using different concentration of betel leaf ethyl acetate extract (1 MIC, 2 MIC, 3 MIC, 4 MIC) and different concentration of peppermint oil (0%, 0.15%, 0.30%) Based on hedonic rating of overall acceptance, 3MIC betel leaf extract and 0.15% peppermint essential oil were selected as the best formulation of hard candy with hedonic score of  $4.60 \pm 1.17$  Inhibition towards *S. mutans* in this formulation was  $10.88 \pm 2.88$  mm when observed using well-diffusion method.

Keywords : Betel leaf, betel leaf extract, jelly candy, *S. mutans*.

References: : 61 (1991-2020)