

## Formulasi edible film ekstrak daun sirih (Piper betle L.)

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### Abstrak

Halitosis (bad breath) is the most complained problem among mouth and teeth health. The source of halitosis are volatile sulfur compounds produced by Streptococcus mutata from degradation of food debris. Sirih leaves (Piper betle L.) are traditionally used as mouth antiseptic for its volatile oil. The aim of this research was to formulate sirih extract into an extract with minimum inhibitory concentration (MIC) with 96% ethanol for 24 hours, resulting to an extract with minimum inhibitory concentration (MIC), on Streptococcus mutans of  $8.49 \times 10^8$  g/ml. The extract with strength quadruple of the MIC, or equal to 0.92% provide iodine, was formulate using 2 factorial design. Corn starch, hydroxypropyl methycellulose (HPMC) and sorbitol were independent variables and drying time, moisture, film thickness, desintegrating time, and film strength were the dependent ones. The results showed that HPMC significantly fastened the drying time, decreased the moisture, and lengthened the desintegrating time. Sorbitol significantly fastened the drying time, increased the moisture, and strengthened the film, while corn starch decreased the moisture and lengthened the disintegrating time. Optimization of the formula ingredients using contour plot superimposed cannot be determined due to edible film disintegrating time that was out of comparative interval.