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ANTIBACTERIAL ACTIVITY TEST OF GREEN BETEL LEAF EXTRACT CLAY MASK (*Piper betle* L) AGAINST ACNE-CAUSING BACTERIA (*Propionibacterium acnes*)

Article Info

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ABSTRACT

Propionibacterium acnes is one of the bacteria that causes acne. Green betel leaf (*Piper betle* L.) is a plant that has been used for generations. Green betel leaf extract contains flavonoids, tannins, saponins, alkaloids, and phenols that have antibacterial potential. *Clay masks* are solid mask preparations formulated with clay minerals as the base ingredient. This study aims to determine the characteristics of an anti-acne *clay mask* made from green betel leaf extract and its antibacterial activity against *Propionibacterium acnes.* Green betel leaves were extracted through maceration method using 96% ethanol solvent then made 4 *clay mask preparations* which were tested for organoleptic, pH, homogeneity, spreadability, adhesive power and drying time and antibacterial test was carried out using well method, inhibition zone data were tested using *One-Way ANOVA* and Duncan test to determine whether there were significant differences between each formula. The results of this study aimed to determine the physical quality and antibacterial activity of green betel leaf extract *clay mask preparations against Propionibacterium acnes* . The *clay mask formula* used consisted of F0 (without extract), F1, F2, and F3 with concentration variations of 2.5%, 5% and 7.5% extract. Evaluation of physical quality included organoleptic, homogeneity, pH, spreadability, adhesive power, and drying time tests. The results of the physical preparation test of the green betel leaf ethanol extract *clay mask* showed a soft, homogeneous shape, green color, betel leaf aroma, Ph around 5-6, spreadability of 5.23-6.73 cm, adhesiveness of 15.5-24.7 seconds and drying time of 12.7-15 minutes. The antibacterial activity test showed that F3 produced the largest inhibition zone of 3 2.9 mm. Statistical analysis using One-Way ANOVA showed that variations in extract concentration had a significant effect on antibacterial activity. Thus, the green betel leaf extract *clay mask* , especially the F3 formula, has good physical quality and the highest effectiveness as an anti-acne preparation.

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