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CONTENTS :

- Inhibition of mangosteen pericarp extract (*Garcinia mangostana* L) growth of bacteria supragingival plaque
- The inhibition Cacao Pod Husk Extract (*Theobroma cacao*) toward the growth of supragingiva bacteria
- Inhibitory effect of *Kappaphycus alvarezii* extract against supragingival plaque bacteria



Table of Contents

No	Title	Page
1	Daya hambat ekstrak kulit manggis (<i>Garcinia mangostana</i> L.) terhadap pertumbuhan bakteri plak supragingiva. <i>[Inhibition of mangosteen pericarp extract (<i>Garcinia mangostana</i> L.) growth of bacteria supragingival plaque]</i>	37 - 42
2	Daya hambat ekstrak kulit buah kakao (<i>Theobroma cacao</i>) terhadap pertumbuhan bakteri supragingiva <i>[The Inhibition Cacao Pod Husk Extract (<i>Theobroma cacao</i>) toward the growth of supragingiva bacteria]</i>	43 - 47
3	Daya Hambat Ekstrak Rumput Laut (<i>Kappaphycus alvarezii</i>) terhadap Bakteri Plak Supragingiva <i>[INHIBITORY EFFECT OF <i>Kappaphycus alvarezii</i> EXTRACT AGAINST SUPRAGINGIVAL PLAQUE BACTERIA]</i>	43 - 49



The Inhibition Cacao Pod Husk Extract (*Theobroma cacao*) toward the growth of supragingiva bacteria

Daya hambat ekstrak kulit buah kakao (*Theobroma cacao*) terhadap pertumbuhan bakteri supragingiva

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Abstract

*Background: Cacao (*Theobroma cacao*) is rich in polyphenol compounds, polyphenol oxidase, and endophytic fungi. Cacao pod husk is a waste product of the cacao industry and present a serious disposal problem. Cacao pod husk also contained polyphenol as a mixture of condensed or polymerized flavonoids. Endophytic fungus in cacao pod husk may be producing polyphenol oxidase with high bioactivity because cacao pod husk contained polyphenol as inducer for fungus to produce this enzyme. In medicine, polyphenol oxidases are used for prevention of bacterial adhesion.*

Purpose: The aim of this study was to find the inhibition of cacao pod husk extract on the growth of supragingival bacteria. Method: This research was done in vitro experiment using agar disc diffusion method. The extract was diluted into concentration of 100%, 50%, 25%, 12,5%, 6,25%, 3,12%, 1,56%, 0,78%, 0,39%, and 0,19%. In this method, the cacao pod husk extract suspension was incorporated onto 5 mm paper discs then gently placed on the seeded assay plates. The zone of inhibition is measured after the incubation. The inhibitory zones were recorded in millimeters and analyzed using One Way ANOVA test. Result: The result showed that antibacterial activity of cacao pod husk extract was active on supragingival bacteria with Minimum Inhibitory Concentration (MIC) of 12,5% with average of inhibitory zone 9,38 mm. Result of statistical test revealed that cacao pod husk extract had significant differences of inhibitory zone from each concentration on supragingival bacteria. The cacao pod husk extract was potential against supragingival bacteria ranged from 12,5%. Conclusion: Cacao pod husk extract could inhibit the growth of supragingiva bacteria with MIC at 12,5%.

Keyword : cacao, pod, husk, extract, inhibition, antibacteria, supragingiva, bacteria, -,

Abstrak

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