ABSTRAK

UJI AKTIVITAS ANTIBAKTERI KOMBINASI EKSTRAK DAUN JAMBU BIJI (*Psidium guajava* L.) DAN DAUN SALAM (*Syzygium polyanthum* [Wight.] Walp) TERHADAP BAKTERI *Streptococcus mutans*

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Latar Belakang: Karies gigi merupakan masalah utama kesehatan gigi dan mulut di dunia. Salah satu penyebab karies gigi yaitu oleh bakteri *Streptococcus mutans*. Daun salam (*Syzygium polyanthum* [Wight.] dan daun jambu biji (*Psidium guajava* L.) merupakan bahan alam yang mengandung senyawa aktif yang dapat menghambat bakteri penyebab karies gigi salah satunya adalah flavonoid. Penelitian ini bertujuan untuk mengetahui perbandingan ekstrak daun salam dan daun jambu biji yang tertinggi menghambat pertumbuhan bakteri *S. mutans.*

Metodologi: Daun jambu biji dan daun salam diekstraksi dengan metode maserasimenggunakan etanol 96%. Ekstrak kental yang diperoleh kemudian dibuat konsentrasi 30% untuk daun jambu biji dan 10% untuk daun salam. Rancangan penelitian menggunakan Rancangan Acak Lengkap (RAL) yang dibagi menjadi 5 perbandingan daun salam dan daun jambu biji (ml : ml) yaitu A (10 ml : 0 ml), B (7,5 ml : 2,5 ml), C (5 ml : 5 ml), D (2,5 ml: 7,5), E (0 ml: 10 ml). Masing masing perlakuan dilakukan uji aktivitas antibakteri menggunakan metode Kirby-Bauer dengan kontrol positif kloramfenikol dan kontrol negatif DMSO 5%. Analisis data menggunakan Anova pada tingkat kepercayaan 95% dan dilanjutkan dengan uji LSD.

Hasil Penelitian: Uji aktivitas perbandingan daun salam dan daun jambu biji menghasilkan zona hambat terbesar pada perlakuan B yaitu daun salam 7,5 ml : daun jambu biji 2,5 ml dengan diameter zona hambat 8,7 mm terhadap *S. mutans* dengan kadar flavonoid 5,08%. Sedangkan, zona hambat terkecil pada perlakuan E yaitu daun salam 0 ml : 10 ml daun jambu biidengan diameter zona hambat 6,9 mm terhadap *S. mutans* dengan kadar flavonoid 1,7%

Kesimpulan: Kombinasi daun salam dan daun jambu biji mampu meningkatkan penghambatan bakteri *S. mutans*, penghambatan yang tertinggi dihasilkan oleh kombinasi ekstrak daun salam dan daun jambu biji 7,5 ml dan 2,5 ml.

Kata Kunci: *Psidium guajava* L.,*Syzygium polyanthum* [Wight.]Walp, *Streptococcus mutans***,** Antibakteri, Flavonoid.

ABSTRACT

ANTIBACTERIAL ACTIVITY OF COMBINATION OF GUAVA LEAF EXTRACT AND BAY LEAF EXTRACT on *Streptococcus mutans*

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Background: Dental caries is a major problem of oral health in the world. One cause of dental caries is by the bacterium *Streptococcus mutans*. Guava leaf (*Psidium guajava* L.) and bay leaf (*Syzygium polyanthum* [Wight.] are natural ingredients that contain active compounds that can inhibit bacteria which cause dental caries, one of one of the active compounds is flavonoids. This study aims to determine the comparison of bay leaf extract and guava leaves that the highest inhibit the growth of *S. mutans*.

Method: Guava leaf and bay leaf has extracted with maceration method using ethanol 96%. Thick extract obtained then made a concentration of 30% for guava leaves and 10% for bay leaves. Research was conducted experimentally using a Complete Random Design (CRD) with volume comparison treatment of bay leaf extract and guava leaf extract (ml : ml) as follows : A (10 ml : 0 ml), B (7.5 ml : 2.5 ml), (5 ml : 5 ml), D (2.5 ml : 7.5 ml), E (0 ml : 10 ml). Each treatments was assayed for antibacterial activity using *Kirby-Bauer* method with positive control chloramphenicol and negative control DMSO 5%. Data analysis used ANOVA at the 95% confidence level and continued with LSD test.

Result: Comparative activity test of bay leaf and guava leaf produced the highest inhibitory zone was treatment B with volume comparison treatment (7.5ml : 2.5 ml) with inhibition zone diameter of 8.7 mm against *S. mutans* with a total flavonoid content of 5,08% . Meanwhile, the lowest inhibitory zone was treatment E (0 ml: 10 ml) with inhibition zone diameter of 6.9 mm *against S. mutans* with 1.7% flavonoid content.

Conclusion: The combination of bay leaf and guava leaf extract increased the inhibition of *S. mutans,* an effective inhibition produced by a combination of bay leaf extract and guava leaves 7.5 ml and 2.5 ml.

Keyword: *Psidium guajava* L, *Streptococcus mutans***,** total flavonoid content, inhibition zone diameter