

ABSTRAK

MAULIDHA YUNIZA ANANTA, 2021, FORMULASI DAN UJI AKTIVITAS ANTIBAKTERI *Streptococcus mutans* ATCC 25175 DARI SEDIAAN OBAT KUMUR EKSTRAK ETANOL BUNGA CENGKEH (*Syzygium aromaticum* L. Merr.), SKRIPSI, PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh Dr. apt. Ismi Rahmawati, M.Si dan apt. Siti Aisyah, M.Sc.

Obat kumur merupakan sediaan cair dengan rasa enak sebagai pembersih rongga mulut serta dapat membantu membunuh bakteri dan mengurangi bau mulut. Aktivitas antibakteri banyak dimiliki oleh tanaman tradisional salah satunya bunga cengkeh. Penelitian ini bertujuan menguji aktivitas antibakteri terhadap bakteri *Streptococcus mutans* dari sediaan obat kumur ekstrak bunga cengkeh.

Ekstrak didapatkan menggunakan metode maserasi dengan pelarut etanol 96%. Pembuatan sediaan obat kumur menggunakan variasi konsentrasi ekstrak yaitu 2,5%; 5%; dan 7,5%. Pengujian mutu fisik dan stabilitas menggunakan parameter uji organoleptis, homogenitas, pH, dan viskositas. Hasil data diuji statistik menggunakan *Paired Samples T-Test*. Pengujian aktivitas antiakteri menggunakan metode difusi kertas cakram. Hasil data diuji statistik menggunakan *One Way Anova* dan uji lanjutan *Tukey*.

Hasil penelitian yang didapatkan menunjukkan formulasi sediaan obat kumur memiliki mutu fisik dan stabilitas yang baik, kecuali pH sediaan dengan konsentrasi 5% dan 7,5% tidak memenuhi persyaratan. Sediaan obat kumur ekstrak bunga cengkeh memiliki potensi sebagai antibakteri. Formulasi sediaan obat kumur konsentrasi 2,5% menghasilkan zona hambat $8,00 \pm 0,50$ mm, 5% sebesar $9,13 \pm 0,61$ mm, 7,5% sebesar $11,60 \pm 0,75$ mm, K(+) sebesar $12,57 \pm 1,29$ mm, dan K(-) sebesar 0,00 mm. Formulasi sediaan obat kumur konsentrasi ekstrak 7,5% memiliki aktivitas yang paling efektif.

Kata kunci : Obat kumur, bunga cengkeh, *Streptococcus mutans*, difusi cakram.

ABSTRACT

MAULIDHA YUNIZA ANANTA, 2021, FORMULATION AND ANTIBACTERIAL ACTIVITY OF *Streptococcus mutans* ATCC 25175 FROM MOUTHWASH CLOVE FLOWER ETHANOL EXTRACT (*Syzygium aromaticum* L. Merr.), THESIS, BACHELOR OF PHARMACY, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA. Supervised by Dr. apt. Ismi Rahmawati, M.Si and apt. Siti Aisyah, M.Sc.

Mouthwash is a liquid preparation with a good taste as an oral cleanser and helped kill or reduce bad breath. Many traditional plants had antibacterial activity, one of which is the clove flower. This study aimed to test the antibacterial activities against *Streptococcus mutans* bacteria from clove flower extract mouthwash preparations.

The extract was obtained using the maceration method with 96% ethanol as solvent. The manufacture of mouthwash preparations used variations in the concentration of extracts 2.5%; 5%; and 7.5%. Physical quality and stability testing used organoleptic test parameters, homogeneity, pH, and viscosity. The result of the data were statistically tested using the *Paired Samples T-Test*. Antibacterial activities test using paper disc diffusion method. The result of the data were statistically tested using *One Way Anova* and *Tukey* follow-up test.

The results obtained showed that the formulation of mouthwash clove preparations had good physical quality and stability, except that the pH of the preparations with concentrations of 5% and 7,5% did not meet the requirements. The preparation of clove flower extract mouthwash had the potential to be antibacterial. Mouthwash formulation with a concentration of 2.5% resulted in an inhibition zone of 8.00 ± 0.50 mm, 5% by 9.13 ± 0.61 mm, 7.5% by 11.60 ± 0.75 mm, K(+) is 12.57 ± 1.29 mm, and K(-) of 0.00 mm. The formulation of mouthwash preparation with an extract concentration of 7.5% had the most effective activity.

Key words : Mouthwash, clove flower, *Straptococcus mutans*, disc diffusion.