**FORMULATION *MOUTHWASH FROM WATER EXTRACH OF TORCH GINGER* (*Etlingera elatior* (Jack) R.M. Sm) AND ANTIBACTERIAL   
TEST AGAINTS *Streptococcus mutans* AND SALIVA SPECIMENS**

**NUR ALFINA**

**NPM.182114096**

# ABSTRACT

*Halitosis is a bad breath coming out of the oral cavity. The bad breath is caused by indiscipline in maintaining healthy teeth such as not regularly brushing teeth, cavities, dental plaque, dental caries and others. Bacteria that can cause oral health problems are Streptococcus mutants. The objective of this research were to obtain mouthwash preparations from natural ingredients from water extrach of torch ginger stem (Etlingera elatior (Jack)* R.M.Sm*) which has the antibacterial and rational activity to maintain oral hygiene and care.*

*The extract of torch ginger stem was prepared from fresh torch ginger stem with distilled water and tested for antibacterial activity against Streptococcus mutants. Furthermore, it was formulated into mouthwash with concenctration 30%, 40% and 50 % by using basic formula of a mixture arabic gum, sorbitol, sodium benzoate. Quality testing consist of organoleptic and preference tests, pH, stability and antibacterial activity by calculating total plate numbers in saliva volunteer specimens before and after the use of the preparation were conducted after formulation.*

*The results of the quality test, mouthwash torch ginger stem juice with the concentration of 30%, 40%, and 50% could be formulated into mouthwash, it has pH aroud 5.2-6.6, and stableed in storage for 12 weeks and formulas containing 40% extracts of torch ginger stem is highly preferred by panellist. The of stem juice of torch ginger started have effective antibacterial activity against Streptococcus mutants at a concentration 20 % with a diameter of inhibitor of 12,50 ± 0.5. Mouthwash have the antibacterial activity against saliva by testing the total plate count of the strongest specimens of salivary preparations with 50% concentration, the reduction in bacterial colonies of 53.13 ± 5.38%, almost the same as Listerin® preparations of 54.14 ± 5.49. This is because the sample contains secondary metabolites that have antibacterial activity, namely, flavonoids, tannins, saponins, alkaloids, triterpenoids / steroids, glycosides and essential oils.*

***Keywords:*** *stem, torch ginger, antibacterial, mouthwash, Streptococcus mutant*

**FORMULASI *MOUTHWASH* SARI BATANG KECOMBRANG *(Etlingera elatior* (Jack) R.M.Sm *)* DAN UJI ANTIBAKTERI TERHADAP BAKTERI *Streptococcus mutans*****DAN SPESIMEN SALIVA**

**NUR ALFINA**

**NPM.182114096**

# ABSTRAK

Halitosis adalah bau nafas tak sedap yang keluar dari rongga mulut. Bau mulut disebabkan oleh ketidakdisiplinan dalam menjaga kesehatan gigi misalnya tidak mengosokkan gigi secara teratur, gigi berlubang, plak gigi, karies gigi dan lain-lain. Bakteri yang dapat menyebab masalah kesehatan mulut yaitu *Streptococcus mutans.* Tujuan penelitian untuk mendapatkan sediaan *mouthwash* dari bahan alami sari air batang kecombrang *(Etlingera elatior* (Jack) R.M.Sm*)* yang mempunyai aktivitas antibakteri dan rasional untuk menjaga kebersihan dan perawatan kesehatan mulut.

Sari batang kecombrang dipersiapkan dari batang kecombrang segar dengan pelarut akuades dan diuji aktivitas antibakteri terhadap *Streptococcus mutans.* Selanjutnya diformulasikan ke dalam sediaan *mouthwash* konsentrasi 30%, 40% dan 50% menggunakan formula dasar campuran gom arab, sorbitol, natrium benzoat dan dilakukan pengujian mutu terdiri dari uji organoleptis dan kesukaan, pH, stabilitas dan aktivitas antibakteri dengan cara perhitungan angka lempeng total pada spesimen saliva sukarelawan sebelum dan setelah penggunaan sediaan.

Hasil pengujian mutu sediaan *mouthwash* sari air batang kecombrang dengan konsentrasi 30%, 40% dan 50% dapat diformulasikan ke dalam sediaan *mouthwash* mempunyai pH 5,2- 6,6 dan stabil pada penyimpanan selama 12 minggu dan formula yang mengandung sari air batang kecombrang 40% sangat disukai panelis. Sari air batang kecombrang mempunyai aktivitas antibakteri terhadap *Streptococcus mutans* yang efektif mulai konsentrasi 20% dengan diameter hambatan 12,50 ± 0,5 mm. Sediaan *mouthwash* mempunyai aktivitas antibakteri terhadap saliva dengan pengujian angka lempeng total terhadap spesimen saliva paling kuat sediaan konsentrasi 50% terjadi pengurangan koloni bakteri sebesar 53,13 ± 5,38% hampir sama dengan sediaan Listerin® sebesar 54,14 ± 5,49. Hal ini disebabkan karena sampel mengandung metabolit sekunder yang mempunyai aktifitas sebagai antibakteri yaitu alkaloid, saponin, glikosida, steroid/triterpenoid, flavonoid, tanin dan minyak atsiri.

**Kata Kunci** : batang, kecombrang, antibakteri, *mouthwash, Streptococcus mutans*