

ABSTRAK

Pradana, Endy Wira. 2014, **Uji Efektivitas Ekstrak Etanol Daun Ceplukan (*Physalis minima L.*) Terhadap *Streptococcus mutans* secara in vitro**. Tugas Akhir, Fakultas Kedokteran Universitas Brawijaya. Pembimbing : (1) Prof. Dr. Dr. Sumarno, DMM, SpMK(K). (2) Diwya Nugrahani, drg, Sp.Pros

Streptococcus mutans merupakan bakteri Gram positif dalam rongga mulut yang metabolismenya menghasilkan zat asam yang menjadi penyebab umum karies (gigi berlubang). Untuk menghambat atau membunuh *Streptococcus mutans* dapat digunakan antibakteri. Salah satu tanaman herbal yang diduga memiliki aktivitas antibakteri adalah daun ceplukan (*Physalis minima L.*). Daun ceplukan (*Physalis minima*) memiliki kandungan seperti *alkaloid*, *flavonoid*, *tanin* dan *terpenoid*. Penelitian ini bertujuan untuk membuktikan bahwa ekstrak etanol daun ceplukan (*Physalis minima L.*) memiliki efek antibakteri terhadap *Streptococcus mutans*. Penelitian ini adalah suatu penelitian eksperimental dengan metode dilusi tabung. Kelompok perlakuan yaitu kelompok bakteri yang diberi ekstrak daun ceplukan (*Physalis minima L.*) dengan konsentrasi 5%, 7,5%, 10%, 12,5%, dan 15%. Kelompok kontrol terdiri dari kontrol bakteri sebagai kontrol positif dan kontrol ekstrak daun ceplukan (*Physalis minima L.*) sebagai kontrol negatif. Hasil penelitian menunjukkan bahwa Kadar Hambat Minimum (KHM) diperoleh pada 10%, dan Kadar Bunuh Minimum (KBM) diperoleh pada 12,5%. Hasil statistik one-way ANOVA menunjukkan terdapat perbedaan signifikan antara perubahan konsentrasi ekstrak daun ceplukan terhadap *Streptococcus mutans* (nilai signifikansi 0,000 ; $p < 0,05$). Uji korelasi menunjukkan adanya hubungan kuat antara konsentrasi ekstrak dengan jumlah koloni (korelasi, $r = -0,732$; $p < 0,05$). Kesimpulan dari penelitian ini adalah ekstrak etanol daun ceplukan (*Physalis minima L.*) memiliki efek antibakteri terhadap *Streptococcus mutans* secara in vitro, KHM diperoleh pada konsentrasi 10% dan KBM pada konsentrasi 12,5%. Semakin tinggi konsentrasi ekstrak etanol daun ceplukan (*Physalis minima L.*) maka semakin rendah pertumbuhan koloni bakteri *Streptococcus mutans*.

Kata kunci: Ekstrak etanol daun ceplukan (*Physalis minima L.*), *Streptococcus mutans*, antibakteri.

ABSTRACT

Pradana, Endy Wira. 2014. **The Antibacterial Effectivity Test of Ethanolic Extract of Wild Gooseberry Leaves (*Physalis minima* L.) against *Streptococcus mutans* using In Vitro Method.** Final Assigment. Medical Faculty of Brawijaya University. Supervisors: (1) Prof. Dr. Dr. Sumarno, DMM, SpMK(K). (2) Diwya Nughrahini, drg, Sp.Pros

Streptococcus mutans is a gram-positive bacteria in oral cavity which metabolism produces acid as the common cause of dental caries (tooth decay). In order to prevent the growth or kill *Streptococcus mutans*, antibacterial agent is required. One of the herb that suppose to have an antibacterial activity is wild gooseberry leaves (*Physalis minima* L.). Wild gooseberry leaves (*Physalis minima* L.) have contain substances such as *alkaloids*, *flavonoids*, *tannins* and *terpenoids*. This research aims to prove that the ethanolic extract of wild gooseberry leaves have antibacterial effects against *Streptococcus mutans*. This research is an experimental study with the tube dilution method. The treated groups are bacteria which are given wild gooseberry leaves extract with a range of concentration from 5%; 7,5%; 10%; 12,5%; 15%. The control group consisted of bacteria as a positive control and wild gooseberry leaves extract (*Physalis minima* L.) as a negative control. Result of this research indicated that Minimum Inhibitory Concentration (MIC) is found at concentration 10% and the Minimum Bactericidal Concentration (MBC) is found at concentration 12,5%. Results of statistical test *One-way* Anova showed that there was a significant difference between the ethanolic extract of wild gooseberry leaves (*Physalis minima* L.) concentration and colony of *Streptococcus mutans* (Significancy value 0,000 ; $p < 0,05$). Correlation test showed that there was a close relation between the extract concentration and colony of *Streptococcus mutans* (Correlation value, $r = -0,732$; $p < 0,05$). The conclusion of this research is ethanolic extract of wild gooseberry leaves extract (*Physalis minima* L.) has antibacterial effects against *Streptococcus mutans in vitro*, with MIC at concentration 10% and MBC at concentration 12,5%. The higher concentration of wild gooseberry leaves extract (*Physalis minima* L.), the less number of the colony growth.

Keywords: Ethanolic extract of wild gooseberry leaves (*Physalis minima* L.), *Streptococcus mutans*, antibacterial