

Formulasi Sediaan Pasta Gigi Bubuk Siwak (*Salvadora persica*) Dengan Carbopol 940 Sebagai Gelling Agent Dan Uji Aktivitas Terhadap Bakteri

Streptococcus mutans

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INTISARI

Karies gigi merupakan salah satu gangguan kesehatan gigi penyakit infeksi yang dihasilkan oleh bakteri. Bakteri *Streptococcus mutans* merupakan salah satu bakteri yang menyebabkan karies gigi. Kayu Siwak mengandung *salvadora* yang mampu membunuh bakteri dan menghambat pertumbuhan bakteri. Carbopol 940 dapat membuat sediaan pasta gigi menjadi lebih stabil berfungsi sebagai basis *gelling agent* dengan kekentalan yang cukup. Penelitian ini bertujuan mengetahui pengaruh formulasi sediaan pasta gigi bubuk siwak dengan variasi carbopol 940 sebagai *gelling agent* serta memiliki aktivitas antibakteri *Streptococcus mutans*. pasta gigi dibuat dengan tiga variasi konsentrasi dari carbopol 940 secara berurutan yaitu 1% (formulasi 1), 1,5% (formulasi 2), 2% (formulasi 3) dan zat aktif siwak sebanyak 3%. Dilakukan uji sifat fisik dan stabilitas pasta gigi meliputi organoleptis, pH, viskositas, tinggi busa, daya sebar, homogenitas dan *extrudability* serta uji aktivitas antibakteri terhadap bakteri *Streptococcus mutans* dengan metode difusi sumuran. Analisis data dengan metode statistika dengan metode *One Way ANNOVA*. Hasil formulasi sediaan pasta gigi bubuk siwak dengan variasi *gelling agent* menunjukkan hasil uji sifat fisik dan uji stabilitas. Uji sifat fisik menunjukkan bahwa sediaan pasta gigi bubuk siwak memenuhi parameter secara organoleptik, daya sebar, tinggi busa, dan *extrudability* menunjukkan hasil yang signifikan. Uji stabilitas menunjukkan homogen memenuhi persyaratan sedangkan untuk uji stabilitas pH dan viskositas sediaan pasta gigi bubuk siwak menunjukkan hasil yang tidak signifikan. Uji aktivitas antibakteri *Streptococcus mutans* pada pasta gigi bubuk siwak menunjukkan adanya zona jernih disekeliling sumuran yang menandakan adanya zona hambat. Hasil menunjukkan bahwa pasta gigi bubuk siwak memenuhi kriteria dari pasta gigi yang meliputi uji mutu fisik dan uji aktivitas antibakteri.

Kata kunci : Pasta gigi, Carbopol 940, Karies gigi, Siwak, *Streptococcus mutans*.

ABSTRACT

Formulation of Preparations for Siwak Powder Toothpaste (*Salvadora Persica*) with Carbopol 940 as Gelling Agent and Activity Test for *Streptococcus mutans* Bacteria

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Dental caries is one of the dental health problems that is an infectious disease produced by bacteria. *Streptococcus mutans* bacteria is one of the bacteria that cause dental caries. Siwak wood contains *Salvadora* which is able to kill bacteria and inhibit bacterial growth. Carbopol 940 can make toothpaste preparations become more stable to function as a gelling agent base with sufficient thickness. This study aims to determine the effect of siwak powder toothpaste formulation with carbopol 940 as a *gelling agent* and has an antibacterial activity of *Streptococcus mutans*. Toothpaste is made with three variations of concentrations of carbopol 940 accordingly, namely 1% (formulation 1), 1.5% (formulation 2), 2% (formulation 3) and active ingredient siwak as much as 3%. Tests of physical properties and stability of toothpaste include organoleptic, pH, viscosity, high foam, dispersal power, homogeneity and *extrudability* as well as antibacterial activity tests on *Streptococcus mutans* bacteria by the diffusion method. Data analysis with statistical methods with the One Way ANNOVA method. The results of siwak powder toothpaste formulation with gelling agent variations showed the results of physical properties and stability tests. Tests of physical properties showed that the preparation of siwak toothpaste powder met organoleptically, dispersion, foam height, and extrudity parameters showed significant results. The stability test showed that the homogeneous met the requirements while the stability test for pH and viscosity of the siwak powder toothpaste preparations showed insignificant results. The antibacterial activity test of *Streptococcus mutans* on siwak toothpaste showed a clear zone around the well that indicated the presence of a inhibitory zone. The results showed that the siwak toothpaste met the criteria of toothpaste which included a physical quality test and an antibacterial activity test.

Keywords: Toothpaste, Carbopol 940, Dental caries, Siwak, *Streptococcus mutans*.