INTISARI

Salah satu bakteri penyebab gingivitis ialah *Fusobacterium nucleatum* yang merupakan bakteri gram negatif. Biji pepaya mengandung komponen utama yaitu triterpenoid yang dapat merusak fraksi lipid membran sitoplasma sel serta tanin yang dapat mengerutkan dinding sel bakteri. Tujuan penelitian ini adalah untuk mengetahui pengaruh dan konsentrasi ekstrak etanolik biji pepaya terhadap pertumbuhan *Fusobacterium nucleatum*.

Ekstrak etanolik biji pepaya didapatkan dari proses ekstraksi dengan metode maserasi, diencerkan menggunakan pelarut akuades steril menjadi konsentrasi 2,5%, 5%, 10%, 20%, dan 40%. *Fusobacterium nucleatum* dibuat suspensi yang disesuaikan dengan standar *McFarland* 0,5, kemudian dibiakkan pada media *Mueller Hinton Agar* yang kemudian diberikan tujuh perlakuan yaitu ekstrak etanolik biji pepaya konsentrasi 2,5%, 5%, 10%, 20%, 40%, *chlorhexidine* 0,2%, dan akuades steril dengan metode difusi lubang. Data diperoleh dengan cara mengukur diameter zona hambat yang terbentuk di sekitar lubang menggunakan jangka sorong.

Hasil penelitian memperlihatkan zona hambat terbentuk mulai konsentrasi 20%, meningkat pada konsentrasi 40%, dan *chlorhexidine* 0,2% adalah yang terbesar. Pada konsentrasi 2,5%, 5%, 10%, dan akuades steril tidak terbentuk zona hambat. Uji *One-Way ANOVA* menunjukkan terdapat pengaruh ekstrak etanolik biji pepaya terhadap zona hambat pertumbuhan *Fusobacterium nucleatum*. Uji *Post Hoc Scheffe* diketahui bahwa kemampuan ekstrak etanolik biji pepaya konsentrasi 40% dalam menghambat pertumbuhan *Fusobacterium nucleatum* lebih baik dari konsentrasi 20%, tetapi masih di bawah *chlorhexidine* 0,2%. Kesimpulan dari penelitian ini yaitu terdapat pengaruh ekstrak etanolik biji pepaya terhadap pertumbuhan *Fusobacterium nucleatum* dan semakin tinggi konsentrasi ekstrak biji pepaya maka daya hambat terhadap pertumbuhan *Fusobacterium nucleatum* semakin besar.

Kata kunci: zona hambat, *Fusobacterium nucleatum*, ekstrak etanolik biji pepaya

ABSTRACT

One of the bacterium that cause gingivitis is *Fusobacterium nucleatum*, which is gram-negative bacterium. Papaya seeds have main components, those are triterpenoid which can destruct lipid fraction of cytoplasmic membrane cell and tannin which can break cell wall of bacteria. The aim of this research was to know the effect and concentration of ethanolic extract of papaya seed to inhibit the growth of *Fusobacterium nucleatum*.

Ethanolic extract of papaya seed were obtained from extraction process with maceration method, diluted with sterile aquadest to 2,5%, 5%, 10%, 20%, and 40% of extract concentration. *Fusobacterium nucleatum* were made in suspension of 0,5 McFarland standard, then cultured in Mueller Hinton Agar and added with ethanolic extract of papaya seed with various concentrations: 2,5%, 5%, 10%, 20%, 40%, 0,2% chlorhexidine, and sterile aquadest by well diffusion method. The data were obtained by measuring the diameter of inhibition zone around the well using a caliper.

The result of this research showed that the diameter of inhibition zone was formed at 20% of extract concentration, increased at concentration of 40%, and 0,2% chlorhexidine had the largest diameter. At 2,5%, 5%, 10% of extract concentration, and sterile aquadest had no inhibition zone. One-Way ANOVA result showed that there was an effect from ethanolic extract of papaya seed to inhibition zone of *Fusobacterium nucleatum*. Post Hoc Scheffe showed that 40% of extract concentration had a better ability in inhibit the growth of *Fusobacterium nucleatum* than 20% of extract concentration, but still under 0,2% chlorhexidine. The conclusion of this research was ethanolic extract of papaya seed could affect the growth of *Fusobacterium nucleatum* and the higher concentration of ethanolic extract of papaya seed would make the larger inhibitory activity towards the growth of *Fusobacterium nucleatum*.

Keywords: inhibition zone, *Fusobacterium nucleatum*, ethanolic extract of papaya seed