

## INTISARI

Pembuatan gigi tiruan dilakukan sebagai upaya untuk menangani masalah kehilangan gigi pada masyarakat. Resin akrilik polimerisasi panas merupakan material gigi tiruan lepasan yang paling umum digunakan. Gigi tiruan perlu dibersihkan secara teratur untuk menghindari tumbuhnya *Streptococcus mutans*. Daun *mint* mengandung senyawa aktif sebagai antibakteri seperti mentol, menton, flavonoid, polifenol, tanin, saponin, dan alkaloid. Tujuan penelitian ini adalah untuk mengkaji pengaruh ekstrak daun *mint* (*Mentha piperita* L.) terhadap pertumbuhan *Streptococcus mutans* pada resin akrilik polimerisasi panas.

Penelitian eksperimental laboratoris dilakukan pada cakram resin akrilik berdiameter 10 mm dan tinggi 2 mm. Subjek penelitian direndam dalam saliva buatan selama 1 jam, kemudian direndam dalam suspensi *Streptococcus mutans* selama 24 jam. Subjek penelitian dibagi menjadi lima kelompok yaitu kelompok kontrol positif (sodium hipoklorit 0,5%), kontrol negatif (akuades), dan kelompok ekstrak daun *mint* konsentrasi 5%, 10%, dan 20%. Masing-masing kelompok direndam selama 30 menit. Penanaman pada media *Brain Heart Infusion Agar* (BHIA) menggunakan metode *spread plate*. Bakteri yang tumbuh pada permukaan agar dihitung menggunakan *colony counter*. Data dianalisis menggunakan uji ANAVA satu jalur dan LSD.

Hasil penelitian menunjukkan rerata jumlah koloni paling banyak terdapat pada kelompok kontrol negatif ( $274 \times 10^2$  CFU/ml) dan rerata paling sedikit terdapat pada kelompok kontrol positif ( $6,4 \times 10^2$  CFU/ml) diikuti oleh kelompok ekstrak daun *mint* 20% ( $65,4 \times 10^2$  CFU/ml). Hasil uji ANAVA dan uji *Post-Hoc* LSD menunjukkan adanya perbedaan yang bermakna ( $p < 0,05$ ) antar kelompok perlakuan. Ekstrak daun *mint* (*Mentha piperita* L.) konsentrasi 20% efektif menghambat pertumbuhan *Streptococcus mutans*, tetapi efektivitasnya masih lebih rendah dibandingkan sodium hipoklorit 0,5%.

Kata kunci: Ekstrak daun *mint*, Resin akrilik, *Streptococcus mutans*

## ABSTRACT

The making of dentures is carried out as an effort to deal with tooth loss in the community. Heat polymerized acrylic resin is the most commonly used material for removable dentures. Dentures need to be cleaned regularly to avoid the growth of *Streptococcus mutans*. Peppermint leaf has antibacterial activity due to the presence of compounds such as menthol, menthone, flavonoids, polyphenols, tannins, saponins, and alkaloids. The purpose of this research is to examine the effect of peppermint leaf extract on the growth of *Streptococcus mutans* on heat polymerized acrylic resin.

Laboratory experimental research was carried out on acrylic resin discs with a diameter of 10 mm and a height of 2 mm. The research subjects were soaked in artificial saliva for 1 hour, then soaked in *Streptococcus mutans* suspension for 24 hours. The research subjects were divided into five groups: positive control group (0.5 % sodium hypochlorite), negative control group (aquadest), and groups soaked in peppermint leaf extract at concentrations of 5%, 10%, and 20%. Each group was soaked for 30 minutes. Spread plates method was used in bacteria inoculation and colony counter was used to count colony of *Streptococcus mutans*. Data were analyzed using One Way ANOVA and LSD.

The results showed the highest mean of colonies in the negative control group ( $274 \times 10^2$  CFU/ml) and the lowest mean of colonies in positive control group with  $6.4 \times 10^2$  CFU/ml, followed by the peppermint leaf extract group with a concentration of 20% ( $65.4 \times 10^2$  CFU/ml). One Way ANOVA and Post-Hoc LSD test showed that there are significant differences ( $p < 0.05$ ) between treatment groups. The conclusion of this research is peppermint leaf extract can inhibit the growth of *Streptococcus mutans* and the 20% concentration of peppermint leaf extract has the highest power to inhibit the growth of *Streptococcus mutans*, but its effectiveness was still lower compared to 0.5% sodium hypochlorite.

**Keywords:** Peppermint leaf extract, Acrylic resin, *Streptococcus mutans*