INTISARI

Minyak atsiri daun salam (*Syzygium polyanthum* [Wight] Walp.) berpotensi sebagai bahan aktif pasta gigi pembersih dan pencegah *extrinsic stain.* Penelitian ini bertujuan untuk menguji formula pasta gigi minyak atsiri daun salam terhadap pembersihan dan pencegahan *extrinsic stain* serta karakteristik fisikokimiawi pasta gigi.

Penelitian menggunakan daun salam dari Lendah, Kulon Progo yang di distilasi uap-air untuk mendapatkan minyak atsiri. Analisis komposisi kimiawi menggunakan GC-MS, dikombinasikan dengan *database Wiley7*. Uji aktivitas antioksidan minyak atsiri daun salam dengan metode DPPH dan FRAP. Formula pasta gigi dibuat dengan variasi konsentrasi minyak atsiri daun salam (0,125%; 0,25%; 0,5% v/v) yang diuji karakteristik fisikokimiawi menggunakan 9 parameter, dilanjutkan uji pembersihan dan pencegahan *extrinsic stain.* Nilai ΔE pembersihan dan pencegahan *extrinsic stain* dianalisis dengan uji ANAVA satu jalan.

Berdasarkan hasil GC-MS, terdeteksi 29 senyawa pada minyak atsiri daun salam, persentase tertinggi yaitu *cis-4-decenal* (37,87%), *decanal* (16,73%), dan *octanal* (16,63%). Uji aktivitas antioksidan menunjukkan nilai IC_{50} minyak atsiri dari metode DPPH dan FRAP masing-masing 2,08µg/mL dan 3,28µg/mL. Pasta gigi minyak atsiri daun salam memenuhi parameter fisikokimiawi. Uji ANAVA satu jalan menunjukkan terdapat pengaruh formula pasta gigi minyak atsiri daun salam terhadap pembersihan *extrinsic stain,* dengan konsentrasi 0,5% tidak berbeda bermakna dengan pasta gigi kontrol positif. Terdapat kecenderungan pencegahan *extrinsic stain* oleh pasta gigi minyak atsiri daun salam. Kesimpulan penelitian ini formula pasta gigi minyak atsiri daun salam konsentrasi 0,5% efektif sebagai pembersih *extrinsic stain* yang setara dengan pasta gigi kontrol positif dan menunjukkan kecenderungan sebagai pencegah *extrinsic stain.* Pasta gigi minyak atsiri daun salam memenuhi standar karakteristik fisikokimiawi.

Kata Kunci: Daun salam, Minyak atsiri, Pasta gigi, *Extrinsic stain,* Fisikokimiawi

ABSTRACT

Bay leaf (*Syzygium polyanthum* [Wight] Walp.) is potentially used as toothpaste active agent for extrinsic stain removal and inhibition. This study was conducted to evaluate formulae of bay leaf essential oil toothpastes as extrinsic stain removal and inhibition, and physicochemical characteristics evaluation of the toothpastes.

This study used bay leaf from Lendah, Kulon Progo, undergo hydro-steam distillation to earn essential oil. Chemical composition analysis using GC-MS combined with Wiley7 database. Antioxidant activities of essential oil were evaluated using DPPH and FRAP methods. Toothpastes were formulated with different concentrations of bay leaf essential oil (0.125%, 0.25%, 0.5% v/v). Physicochemical characteristics were evaluated using 9 parameters. The ΔE values from extrinsic stain removal and inhibition tests were analyzed using one-way ANOVA test.

According to GC-MS result, bay leaf essential oil contained 29 compounds. The highest percentages were cis-4-decenal (37.87%), decanal (16.73%), and octanal (16.63%). As antioxidant activity tested, IC_{50} of the essential oil from DPPH and FRAP methods were 2.08µg/mL and 3.28µg/mL. Bay leaf essential oil toothpastes met physicochemical characteristics parameters. One-way ANOVA test showed there was effect from bay leaf essential oil toothpastes' formulae to remove extrinsic stain, which toothpaste's formulae 0.5% of bay leaf essential oil had no significant difference to positive control toothpaste. Tested toothpastes tended to inhibit *extrinsic stain.* Conclusion from this study was formulae of bay leaf essential oil toothpastes had effect as extrinsic stain removal equivalent to positive control and showed a trend as extrinsic stain inhibition. Bay leaf essential oil toothpastes met physicochemical characteristic standards.

Keyword: Bay leaf, Essential oil, Toothpaste, Extrinsic stain, Physicochemical