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**FORMULASI DAN PENENTUAN AKTIVITAS ANTIOKSIDAN  
LIP BALM MINYAK TAMANU (*Calophyllum inophyllum* L.)  
DAN MINYAK ZAITUN (*Olea europaea* L.)**

**ABSTRAK**

**Latar belakang:** Minyak tamanu dan minyak zaitun (MTMZ) memiliki kandungan flavonoid berfungsi sebagai antioksidan. Pada penelitian ini, MTMZ dimanfaatkan dalam bentuk sediaan kosmetik bibir yaitu *lip balm*. *Lip balm* berbahan dasar lilin, lemak dan minyak yang berfungsi untuk melindungi dan melembapkan bibir pecah-pecah atau kering. Tujuan penelitian ini untuk mengevaluasi pengaruh konsentrasi MTMZ terhadap sifat fisik, uji stabilitas (*cycling test*) serta aktivitas antioksidan dalam sediaan *lip balm*.

**Metode:** Sediaan *lip balm* MTMZ dibuat 3 formula dengan konsentrasi FI (10%:15%), FII (12,5%:12,5%) dan FIII (15%:10%), dilakukan uji sifat fisik (organoleptik, homogenitas, pH dan titik lebur), uji stabilitas (*cycling test*) dan mengukur aktivitas antioksidan sediaan dengan metode DPPH dan parameter IC<sub>50</sub>. Data dianalisis menggunakan SPSS dengan uji *Anova* dan untuk membandingkan data sebelum dan sesudah penyimpanan digunakan *Paired Samples T Test*.

**Hasil:** Hasil uji organoleptis, ketiga sediaan memiliki warna putih tulang, bau khas minyak tamanu dan tekstur lembut. Uji homogenitas, ketiga sediaan menunjukkan hasil yang homogen. Rata-rata hasil uji pH FI-FIII (6,07±0,25 - 6,15±0,07). Hasil analisis statistik *Anova* (0,241). Rata-rata hasil uji titik lebur FI-FIII (51,1±0,20 - 51,9±0,10). Hasil analisis statistik *Anova* (0,010). Hasil uji stabilitas sediaan *lip balm* tidak stabil dengan mengalami penurunan tekstur, pH dan titik lebur setelah *cycling test*. Rata-rata nilai IC<sub>50</sub> FI-FIII berturut-turut adalah 154,25 ppm; 150,51 ppm dan 127,33 ppm. Hasil analisis statistik *Anova* (0,000) yang berarti berbeda signifikan.

**Kesimpulan:** Konsentrasi MTMZ tidak berpengaruh terhadap sifat fisik sediaan *lip balm* meliputi organoleptis, homogenitas dan pH, tetapi berpengaruh terhadap titik lebur dan uji stabilitas (*cycling test*) serta aktivitas antioksidan dalam sediaan *lip balm* MTMZ.

**Kata kunci:** *lip balm*, minyak tamanu, minyak zaitun, *cycling test*, antioksidan.

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**FORMULATION AND DETERMINATION OF ANTIOXIDANT  
ACTIVITY TAMANU OIL LIP BALM (*Calophyllum inophyllum* L.)  
AND OLIVE OIL (*Olea europaea* L.)**

**ABSTRACT**

**Background:** Tamanu oil and olive oil (MTMZ) contain flavonoids that function as antioxidants. In this study, MTMZ is used in the form of lip cosmetic preparations, namely lip balm. Lip balm is based on waxes, fats and oils that work to protect and moisturize chapped or dry lips. The purpose of this study is to evaluate the effect of MTMZ concentration on physical properties, stability test (cycling test) and antioxidant activity in lip balm preparations.

**Methods:** MTMZ lip balm preparations were made in 3 formulas with concentrations of FI (10%:15%), FII (12.5%:12.5%) and FIII (15%:10%), physical properties (organoleptic, homogeneity, pH and melting point), stability tests (cycling test) and measuring the antioxidant activity of the preparation by the DPPH method and IC<sub>50</sub> parameters. The data was analyzed using SPSS with the Anova test and to compare the data before and after storage was used Paired Samples T Test.

**Results:** The results of the organic test, the three preparations have a bone-white color, a distinctive smell of tamanu oil and a soft texture. Homogeneity test, all three preparations showed homogeneous results. Average results of the FI-FIII pH test (6.07±0.25 - 6.15±0.07). Results of statistical analysis of Anova (0.241). The average result of the FI-FIII melting point test (51.1±0.20 - 51.9±0.10). The results of statistical analysis of Anova (0.010). The stability test results of lip balm preparations were unstable with a decrease in texture, pH and melting point after cycling test. The average IC<sub>50</sub> values of FI-FIII were 154.25 ppm; 150.51 ppm and 127.33 ppm, respectively. The results of the statistical analysis of Anova (0.000) which means that they are significantly different.

**Conclusion:** MTMZ concentration had no effect on the physical properties of lip balm preparations including organoleptics, homogeneity and pH, but had an effect on the melting point and cycling test as well as antioxidant activity in MTMZ lip balm preparations.

**Keywords:** lip balm, tamanu oil, olive oil, cycling test, antioxidants.