

INTISARI

Sinar UV menimbulkan *Reactive Oxygen Species* (ROS) yang dapat ditanggulangi dengan antioksidan. Kelopak bunga rosella (*Hibiscus sabdarifa* L.) mengandung senyawa antioksidan antosianin namun rentan terhadap kerusakan, sehingga perlu diformulasikan dalam sediaan yang dapat menjerap yaitu multiemulsi A/M/A dan suspensi liposom. Penelitian bertujuan untuk memperoleh formula optimum dan kondisi penyimpanan multiemulsi A/M/A, serta mengetahui pengaruh penyimpanan terhadap stabilitas antosianin ekstrak rosella dalam multiemulsi A/M/A dan suspensi liposom yang ditunjukkan dengan laju disipasi dan *entrapment efficiency*.

Formula optimum diperoleh dengan optimasi formula kemudian diuji sifat dan stabilitas fisiknya. Laju disipasi ditetapkan *slope* persamaan ln jumlah antosianin ekstrak kelopak bunga rosella total dan fase luar multiemulsi A/M/A dan suspensi liposom. *Entrapment efficiency* dihitung dengan mengukur persentase selisih antosianin ekstrak kelopak bunga rosella total dan fase luar kedua sediaan dengan menggunakan metode spektrofotometer visibel derivatif. Analisis statistik dilakukan dengan *t-test*.

Hasil penelitian menunjukkan pada multiemulsi A/M/A diperoleh formula optimum, kondisi penyimpanan optimum yaitu pada suhu rendah (-4°C) dalam wadah terlindung dari cahaya dengan penambahan gas nitrogen, serta multiemulsi A/M/A dengan kondisi penyimpanan optimum memiliki laju disipasi dan *entrapment efficiency* antosianin ekstrak kelopak bunga rosella lebih tinggi daripada suspensi liposom.

Kata kunci : Ekstrak kelopak bunga rosella, Multiemulsi A/M/A, Suspensi Liposom, Laju disipasi, *Entrapment efficiency*

ABSTRACT

UV light could induced production of Reactive Oxygen Spesies (ROS) which can solved by using antioxidant. Roselle (*Hibiscus sabdariffa* L.) was contained anthocyanin as an antioxidant agent, but this compound was less stable in environmental conditions, so it needs to be formulated in a dosage form that could entrapped and protect it. The aim of this study were to determine optimum formula of multiple emulsion and storage condition, stability of anthocyanin roselle extract in W/O/W multiple emulsion and liposome suspension by evaluating the rate of dissipation and *entrapment efficiency*.

Optimum formula were obtain by optimize formula then was tested physical charateristic and stability. Rate of dissipation was determine by calculated slope ln amount of anthocianin roselle extract in entrapped and outer phase multi emulsion and liposome suspension. *Entrapment efficiency* was calculated by separating the total extract and the extract that not entrapped in both of dosage form, then was analyzed by derivative visible spectrophotometry. Statistical analyze was conducted by t-test.

The result showed that optimum multiple emulsion was produced, optimum storage condition are low temperature (-4°C), in fotoprotective container with adding nitrogen gas, W/O/W multiple emulsion in optimum storage condition has higher rate of dissipation and entrapment efficeincy than liposome suspension.

Keywords : Roselle pathel extract, W/O/W multiple emulsion, Liposome suspension, Rate of dissipation, *Entrapment efficiency*