INTISARI

Minyak nilam berasal dari daun tanaman nilam (*Pogostemon cablin* Benth.) yang berkhasiat untuk merawat dan mencegah kerusakan kulit dari masalah penuaan dini sehingga berpotensi diformulasikan menjadi sediaan kosmetika. Penelitian ini bertujuan untuk memformulasikan minyak nilam dalam sediaan kosmetik berupa nanoemulsi serum *spray* serta menguji profil iritasinya terhadap hewan uji.

Formula sediaan nanoemulsi serum *spray* memvariasikan perbandingan minyak nilam dan VCO untuk memperoleh formula terbaik berdasarkan karakteristik sediaan meliputi parameter nilai transmitan, pH, dan ukuran droplet. Uji stabilitas dilakukan pada formula terbaik untuk melihat kestabilan dalam penyimpanan. Formula terbaik juga diuji untuk mengetahui profil iritasinya pada kelinci albino (*Oryctolagus cuniculus*).

Formula terbaik nanoemulsi serum *spray* minyak nilam memiliki komposisi fase minyak berupa minyak nilam 3% b/b, VCO 1% b/b. Formula terbaik memiliki nilai transmitan sebesar 99,80±0,14%, rata-rata ukuran diameter droplet sebesar 15,15±0,66 nm, indeks polidispersitas (PdI) sebesar 0,197±0,053, dan nilai pH 6,19±0,03. Hasil uji stabilitas menunjukkan bahwa formula memiliki kestabilan fisik dan kimiawi yang baik. Formula terbaik nanoemulsi serum *spray* minyak nilam juga tidak menunjukkan respon iritasi pada kelinci albino.

Kata kunci: minyak nilam, VCO, nanoemulsi, serum *spray*, iritasi

ABSTRACT

Patchouli oil is derived from the leaves of the patchouli plant (Pogostemon cablin Benth.), which is known for its beneficial properties in treating and preventing skin damage caused by premature aging. As a result, it has the potential to be formulated into cosmetic preparations. This study aims to formulate patchouli oil into a cosmetic preparation in the form of a nanoemulsion serum spray and assess its irritation profile on animals.

The formulation of the nanoemulsion serum spray varies the ratio of patchouli oil and virgin coconut oil (VCO) to obtain the best formula based on formulation characteristics, including transmittance value, pH, and droplet size. Stability testing is conducted on the best formula to assess its stability during storage. The best formula is also tested to determine its irritation profile on albino rabbits (Oryctolagus cuniculus).

The best formula for the patchouli oil nanoemulsion serum spray consists of an oil phase composition of 3% w/w patchouli oil and 1% w/w VCO. The best formula exhibits a transmittance value of 99.80±0.14%, an average droplet diameter size of 15.15±0.66 nm, a polydispersity index (PdI) of 0.197±0.053, and a pH value of 6.19±0.03. The stability testing results indicate that the formula possesses good physical and chemical stability. Furthermore, the best patchouli oil nanoemulsion serum spray formula shows no signs of irritation on albino rabbits.

***Keywords**: patchouli oil, VCO, nanoemulsion, serum spray, irritation.*