INTISARI

*Curcuma mangga*mengandung flavonoid dan kurkumin yang didugamemiliki aktivitas sebagai tabir surya. Penelitian ini bertujuan untuk mengoptimasi formula dan mengetahui aktivitas perlindungan sinar UV*lotion w/o* ekstrak etanol temu manggasecara *in vitro*.

Optimasi formula *lotion w/o* dilakukanberdasarkan metode *Simplex Lattice Design*menggunakan *softwareDesign Expert*®versi 9.0.4.1dengan kombinasi setil alkohol, cera alba, dan gliserin. Sebanyak 13 formula *lotion w/o*dievaluasi sifat fisiknya untuk penentuan formula optimum.Lotion yang optimum dilakukan uji stabilitas fisik selama 4 minggu, uji spf, persen eritema, dan persen pigmentasi menggunakan spektrofotometri *UV-Vis*.

Hasil penelitian menunjukkan bahwa nilai SPF ekstrak etanol temu mangga secara *in vitro* pada konsentrasi 0,3 mg/ml memberikan nilai SPF 16,62.Hasil formula optimum lotion *w/o* terdiri dari setil alkohol 4,04 %, gliserin 7,00%, dan cera alba 7,96 % dengan nilai prediksidaya sebar 15,67 cm^2; daya lekat 0,999 detik; dan viskositas 93,72 dPa.s. Hasil penyimpanan selama 4 minggu lotion *w/o* memiliki viskositas, daya lekat, dan daya sebar fisik relatif stabil.Nilai SPF *lotion w/o* pada konsentrasi 1%; 2%; 3%; 4%; dan 5% berturut-turut memberikan nilai SPF 3,56; 7,00; 10,02; 15,06; dan 18,52; sertaberturut-turut memberikan persen eritema 1,07; 1,41; 2,17; 4,14; 10,95; dan persen pigmentasi 1,06; 1,39; 2,11; 3,93; 10,41.

Kata Kunci : *Curcuma mangga*, *lotion*, tabir surya

ABSTRACT

Curcuma mangga contains flavonoids and curcumin that are expected to have an activity as a sunscreen. This research is aimed to optimize the formula and determine the UV protection activity of the ethanol extract of mango ginger lotion w/o in vitro. Formula optimization of lotion w/o is done based on Simplex Lattice Design method using Design Expert® version 9.0.4.1 software with the combination of cetyl alcohol, cera alba and glycerin. The physical properties of 13 formulas of lotion w/o are evaluated for the optimum formula determination. The optimum lotion is done some physical stability tests for 4 weeks, SPF test, erythema percent, and the percent of pigmentation using UV-Vis spectrophotometry. The results show that the SPF value of ethanol extract of mango ginger in vitro at concentration of 0.30 mg/ml indicates the SPF value of 16.62. The result of the lotion w/o optimum formula is it consists of cetyl alcohol 4.04%, cera alba 7.96% and 7.00% glycerin and the dispersive power prediction value of 15.67 cm^2; adhesiveness of 0.99 seconds and a viscosity of 93.72 dPa.s. The result of the storage for 4 weeks shows that lotion w/o has viscosity, adhesiveness and physical dispersive power in a relative stable condition. The lotion w/o SPF value at a concentration of 1.00%; 2.00%; 3.00%; 4.00% and 5.00% respectively give the SPF value of 3.56; 7.00; 10.02; 15.06 and 18.52, and respectively give the erythema percent of 1.41; 2.17; 4.14; 10.95; and pigmentation percent of 1.39; 2.11; 3.93; 10.41.

Keywords: Curcuma mangga, lotion, sunscreen