

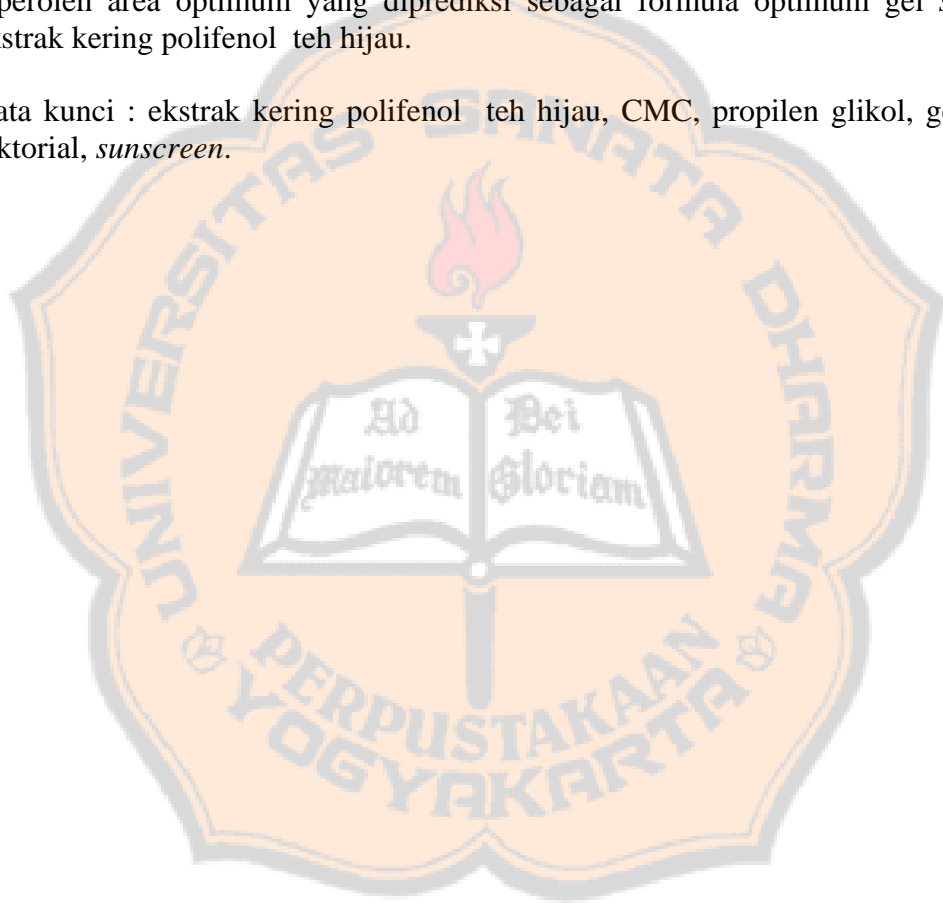
INTISARI

Penelitian ini bertujuan untuk mengetahui efek CMC, propilen glikol dan interaksi keduanya yang dominan dalam menentukan sifat fisik sediaan gel, dan kestabilan sediaan gel serta untuk mendapatkan area komposisi optimum *gelling agent* dan humektan dalam formula gel *sunscreen* ekstrak kering polifenol teh hijau. Ekstrak kering polifenol teh hijau didapatkan dari penyarian simplisia daun teh hijau dengan pelarut metanol, kloroform, air dan etil asetat.

Penelitian ini merupakan rancangan eksperimental murni menggunakan desain faktorial. Digunakan 4 formula, yaitu (1) : level CMC dan propilen glikol rendah, (a) : level CMC tinggi dan level propilen glikol rendah, (b) : level CMC rendah dan level propilen glikol tinggi, (ab) : level CMC dan propilen glikol tinggi. Optimasi dilakukan terhadap parameter sifat fisik gel yang meliputi daya sebar, viskositas, dan perubahan viskositas gel selama 1 bulan penyimpanan. Analisis statistik yang digunakan adalah *Yate's treatment* dengan taraf kepercayaan 95%.

Hasil menunjukkan bahwa CMC dominan dalam menentukan daya sebar gel, viskositas gel, dan perubahan viskositas gel. Dari *superimposed contour plot* diperoleh area optimum yang diprediksi sebagai formula optimum gel *sunscreen* ekstrak kering polifenol teh hijau.

Kata kunci : ekstrak kering polifenol teh hijau, CMC, propilen glikol, gel, desain faktorial, *sunscreen*.



ABSTRACT

The aims of the research were to investigate the dominant effect among CMC, propylene glycol, and the interaction between CMC and propylene glycol on the gel physical properties, and to obtain the optimum area of the composition gelling agent and humectant from green tea-polyphenol-dry extract sunscreen gel formulas. The active ingredient was extracted from *Camellia sinensis* L. using chloroform, methanol, water and ethyl acetate.

This research was a pure experimental study based on factorial design application. Four formulas were investigated, i.e. (1) : CMC and propylene glycol both in low level, (a) : CMC in high level and propylene glycol in low level, (b) : CMC in low level and propylene glycol in high level, (ab) : CMC and propylene glycol both in high level. They were evaluated for their physical properties parameter, i. e. spreadability, viscosity, and viscosity shift of gel over 1 month storage. Statistic analysis used was Yate's treatment with 95% level of confidence.

The result showed that CMC was dominant in determining gel spreadability, gel viscosity, and viscosity shift of gel. Based on superimposed contour plot the optimum area of gel formula was obtained limited to the composition of gelling agent and humectant which studied.

Key word : extract polyphenol, CMC, propylene glycol, gel, factorial design, sunscreen.

