

INTISARI

Paparan radikal bebas berlebih merupakan salah satu penyebab penuaan dini dan kerusakan sel-sel kulit. Walaupun demikian, efek buruk paparan radikal bebas berlebih dapat dihindari dengan menggunakan antioksidan. Penelitian menunjukkan bahwa senyawa dengan aktivitas antioksidan terkandung dalam jamur tiram (*Pleurotus ostreatus*), namun aplikasinya sebagai kosmetik masih kurang ditelusuri. Oleh sebab itu, jamur tiram memiliki potensi untuk dikembangkan sebagai krim antioksidan dalam kosmetik.

Penelitian ini dilakukan untuk mengetahui perbedaan profil fisik krim ekstrak jamur tiram dengan adanya variasi konsentrasi Cremophor A6 dan Cremophor A25 sebagai agen pengemulsi dan menentukan formula optimum krim. Formula optimum krim ditentukan berdasarkan profil viskositas, daya sebar, dan daya lekat menggunakan metode *Simplex Lattice Design*. Formula optimum yang didapatkan diuji stabilitas fisiknya.

Hasil penelitian menunjukkan bahwa variasi konsentrasi Cremophor A6 dan Cremophor A25 mempengaruhi profil viskositas, daya lekat, dan daya sebar. Formula optimum yang diformulasikan mengandung 1,38% Cremophor A6 dan 1,12% Cremophor A25. Formula optimum krim ekstrak etanol 70% jamur tiram memiliki viskositas $7627,67 \pm 608,46$ cP; daya lekat $1,47 \pm 0,21$ detik; dan daya sebar $15,02 \pm 0,64$ cm². Uji stabilitas dipercepat menunjukkan bahwa krim mengalami perubahan viskositas, daya sebar, dan daya lekat. Walaupun demikian tidak terjadi pemisahan fase terhadap krim

Kata kunci: Antioksidan, Jamur Tiram, Krim, Optimasi, Cremophor

ABSTRACT

*Excessive free radicals exposures are one of the cause of premature aging and skin cells damage. However, adverse effect from excessive free radicals exposure could be prevented by using antioxidant. Study shows that oyster mushrooms (*Pleurotus ostreatus*) contain compounds which exhibit antioxidant activity, but it's application as cosmetics haven't been fully it's Therefore, oyster mushrooms have the potential to be used as antioxidant cream in cosmetics.*

The goal of this research is to see whether varying the concentration of Cremophor A6 and Cremophor A25 as emulsifying agents affect the physical profile of creams and determine its optimum formula. Optimum formula of the cream was determined by considering its viscosity, spreadability, and stickiness by using the Simplex Lattice Design method. Obtained optimum formula was then tested for its stability.

Result of this research shows that variation in Cremophor A6's and Cremophor A25's concentration affects the viscosity, spreadability, and stickiness of creams. The optimum formula contains 1.38% Cremophor A6 and 1.12 Cremophor A25. The 70% ethanol solution oyster mushroom extract cream optimum formula has the viscosity of $7627,67 \pm 608,46$ cP; stickiness of $1,47 \pm 0,21$ second; and spreadability of $4,37 \pm 0,10$ cm. Accelerated stability study shows that optimum cream formula undergoes changes on its viscosity, spreadability, and stickiness. However, there is no separation on its phases.

Key words: *Antioxidant, Oyster mushroom, Cream, Optimization, Cremophor*