

INTISARI

ARINI, A.A, 2015, OPTIMASI FORMULA KRIM MINYAK ATSIRI DAUN ROSEMARY (*Rosmarinus officinalis* L) SEBAGAI ANTIBAKTERI DENGAN KOMBINASI EMULGATOR TWEEN 60 DAN SPAN 60 MENGGUNAKAN METODE DESAIN FAKTORIAL, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Daun rosemary (*Rosmarinus officinalis* L) dengan kandungan minyak atsiri mempunyai aktivitas sebagai antibakteri. Penggunaan minyak atsiri secara langsung dinilai kurang efektif, sehingga dibuat sediaan krim. Kestabilan sediaan krim dipengaruhi oleh emulgator. Penelitian ini bertujuan untuk mendapatkan formula optimum krim minyak atsiri daun rosemary menggunakan emulgator Tween 60 dan Span 60 dengan metode desain faktorial dan mengetahui aktivitas antibakteri dari formula optimum terhadap *Staphylococcus aureus* ATCC 25923.

Minyak atsiri daun rosemary diisolasi dengan metode distilasi air. Krim minyak atsiri daun rosemary dibuat dalam empat formula berdasarkan desain faktorial. Krim yang dihasilkan diuji sifat fisik meliputi viskositas, daya sebar, daya lekat dan stabilitas fisik selama satu bulan selanjutnya dibuat persamaan desain faktorial menggunakan program *Design Expert version* 8.0.6.1 untuk menentukan formula optimum. Hasil data prediksi yang diperoleh dibandingkan dengan hasil percobaan sesungguhnya menggunakan uji-t (T-test). Formula optimum dilakukan pengujian antibakteri secara metode difusi.

Formula optimum krim minyak atsiri daun rosemary diperoleh pada proporsi Tween 60 sebesar 0,73 dan Span 60 sebesar 5,47. Hasil validasi uji-t menunjukkan bahwa tidak ada perbedaan yang signifikan antara nilai prediksi dengan hasil percobaan sesungguhnya. Aktivitas antibakteri formula optimum diperoleh rata-rata zona hambat sebesar 17,3 mm.

Kata kunci : Daun rosemary, Desain faktorial, Tween 60, Span 60, *Staphylococcus aureus* ATCC 25923.

ABSTRACT

ARINI, A.A, 2015, THE OPTIMIZING FORMULA OF ROSEMARY LEAF (*Rosmarinus officinalis* L) VOLATILE OIL CREAM AS ANTIBACTERIAL WITH EMULGATOR TWEEN 60 AND SPAN 60 COMBINATION USING FACTORIAL DESIGN METHOD, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Rosemary leaf (*Rosmarinus officinalis* L) contains volatile oils which have activity as antibacterial. The use of volatile oil directly is uneffective, so it was made in the form of cream. The stability of the cream preparation is influenced by emulgator. The aim of this study was to get the optimum formula of Rosemary leaf volatile oil cream using tween 60 and span 60 emulgator with factorial design method and to find out antibacterial activity against *Staphylococcus aureus* ATCC 25923.

Rosemary leaf volatile oil isolated by water distillation method. Rosemary leaf volatile oil cream was made into four formula based on factorial design. The obtained cream were tested for the physical characteristics include viscosity, spreading ability, adhesivity and physical stability during one month and then the factorial design equalization was made by Design Expert version 8.0.6.1 to determine the optimum formula. The obtained data predicted was compared with the experimentation result using T-test. The antibacterial activity of the optimum formula was tested by diffusion method.

Optimum formula of Rosemary leaf volatile oil cream was obtained from the proportion of 0,73 Tween 60 and 5,47 Span 60. The validation t-test result indicated that it did not have significant differentiation between predict percentage and the experimentation result. Antibacterial activity of optimum formula resulted 17,3 mm inhibition zone.

Keyword : Rosemary Leaf, *Factorial Design*, Tween 60, Span 60, *Staphylococcus aureus* ATCC 25923.