ABSTRAK

UJI AKTIVITAS FORMULASI HAIR TONIC EKSTRAK ETANOL 70% DAUN PARE (*Momordica charantia* L.) TERHADAP PERTUMBUHAN RAMBUT PADA KELINCI (*Oryctolagus cuniculus*)

Samantha Koralina / 22010319130083
Program Studi Farmasi, Departemen Kedokteran, Fakultas Kedokteran
Universitas Diponegoro

Latar Belakang : Secara empiris, daun pare (*Momordica charantia* L.) digunakan untuk merangsang pertumbuhan rambut karena terdapat metabolit sekunder yang dapat mempercepat pertumbuhan rambut dan mencegah kerontokan.

Tujuan : Penelitian ini bertujuan untuk mengetahui pengaruh variasi konsentrasi ekstrak etanol 70% daun pare (*Momordica charantia* L.) 5%, 10%, dan 15% pada *hair tonic* terhadap pertumbuhan rambut kelinci New Zealand Jantan (*Oryctolagus cuniculus*) serta untuk mengetahui apakah sediaan memiliki stabilitas yang baik dilihat dari siklus 0 dan 6.

Metode : Sediaan *hair tonic* diuji organoleptis, pH, dan viskositas sebelum dan sesudah uji *cycling test* selama 6 siklus, serta dilakukan uji iritasi. Sebanyak 6 ekor kelinci jantan New Zealand dicukur, kemudian dioleskan sediaan sebanyak 0,2 mL selama 21 hari dengan pembagian perlakuan berupa K- (sediaan tanpa zat aktif), F1 (sediaan dengan ekstrak daun pare 5%), F2 (sediaan dengan ekstrak daun pare 10%), F3 (sediaan dengan ekstrak daun pare 15%), dan K+ (minoksidil 0,0004%). Panjang rambut diukur menggunakan jangka sorong dan bobot rambut ditimbang menggunakan timbangan analitik. Analisis data menggunakan uji parametrik One Way ANOVA dan non-parametrik Kruskal Wallis dan Wilcoxon.

Hasil : Sediaan *hair tonic* secara organoleptis berbentuk cair, berwarna hijau kehitaman, homogen, memiliki pH yang masuk dalam rentang toleransi kulit (4-7,5), dan viskositas di bawah 5 cP. Sediaan formula F3 memberikan aktivitas paling besar dengan rata-rata panjang rambut 2,4818 cm dan rata-rata bobot rambut 0,3822 gram dibandingankan dengan F1 (2,3761 cm dan 0,1524 gram), F2 (2,4354 cm dan 0,3107 gram), K- (1,7911 cm dan 0,0960 gram), dan K+ (2,3518 cm dan 0,1732 gram).

Kesimpulan : Sediaan *hair tonic* memberikan stabilitas yang baik secara organoleptis, pH, dan viskositas. Sediaan formula F3 memberikan aktivitas pertumbuhan rambut terbaik.

Kata kunci *: Momordica charantia L., formulasi, hair tonic, in vivo*

ABSTRACT

ACTIVITY TEST OF HAIR TONIC FORMULATION OF 70% ETHANOL EXTRACT OF BITTER GOURD LEAF (*Momordica charantia* L.) ON HAIR GROWTH IN RABBITS (*Oryctolagus cuniculus*)

Samantha Koralina / 22010319130083
Program Studi Farmasi, Departemen Kedokteran, Fakultas Kedokteran
Universitas Diponegoro

Background : Empirically, bitter gourd leaves (*Momordica charantia* L.) are used to stimulate hair growth because of secondary metabolites that can accelerate hair growth and prevent hair loss.

Aim : This research aims to determine the effect of concentration variations of 70% ethanol extract of bitter melon leaves (*Momordica charantia* L.) 5%, 10%, and 15% in hair tonic on hair growth in male New Zealand rabbits (Oryctolagus cuniculus) and to determine whether the preparation has good stability seen from cycle 0 and 6.

Methods : Hair tonic was tested for organoleptic, pH, and viscosity before and after cycling test for 6 cycles, as well as an irritation test. A total of 6 male New Zealand rabbits were shaved, then 0.2 mL of the preparation was smeared for 21 days with the treatment division of K- (hair tonic without active substance), F1 (hair tonic with 5% bitter melon leaf extract), F2 (hair tonic with 10% bitter melon leaf extract), F3 (hair tonic with bitter melon leaf extract 15%), and K+ (minoxidil 0.0004%). Hair length was measured using a caliper and hair weight was weighed using an analytical balance. One Way ANOVA was used for parametric data analysis and Kruskal Wallis and Wilcoxon were used for non-parametric data analysis.

Results : Hair tonic is in the form of liquid, blackish green in color, homogeneous, has a pH within the skin tolerance range (4-7.5), and a viscosity below 5 cP. The F3 formulation provides the greatest activity with an average hair length of 2.4818 cm and an average hair weight of 0.3822 gram compared to F1 (2.3761 cm and 0.1524 gram), F2 (2.4354 cm and 0 .3107 gram), K- (1.7911 cm and 0.0960 gram), and K+ (2.3518 cm and 0.1732 gram).

Conclusion : Hair tonic preparations provide good stability organoleptically, pH, and viscosity. Formula F3 provides the best hair growth activity.

Keywords : *Momordica charantia L., formulation, hair tonic, in vivo*