

**PENGARUH PEMBERIAN JUS JAMBU BIJI MERAH (*Psidium guajava*
L.) TERHADAP BERAT, DIAMETER TESTIS, DAN DIAMETER
TUBULUS SEMINIFERUS MENCIT (*Mus Musculus*) YANG
DIPAPARKAN ASAP ROKOK**



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**THE EFFECT OF RED GUAVA JUICE ON THE WEIGHT, TESTES
DIAMETER, AND SEMINIFEROUS TUBULES DIAMETER
OF MICE (MUS MUSCULUS) THAT ARE EXPOSED
TO THE SMOKE OF CIGARETTE**

By

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Abstract

The exposure on cigarette smoke can cause the increase of free radicals within the body. Guava juice has very high Vitamin C concentration. Vitamin C is a high antioxidant that is effective on going against the effects of free radicals within the body. This research aims to know the effect of red guava juice on weight, testes diameter, and seminiferous tubules diameter of mice that are exposed to the smoke of cigarette and to know the most effective dose to avoid the effect of free radicals.

This research is using pure experimental randomized control group post test only design and was done in Laboratory of Pharmacy Faculty Andalas University, Laboratory of Biology of Mathematic and Science Faculty Andalas University and Laboratory of Biology of Medical Faculty Andalas University from December to January 2017. The research was conducted on 25 *Mus musculus* mice that were separated into 5 groups. Negative (-) control group was given aquades during treatment. Positive (+) control, P1, P2, dan P3 groups that was given exposure towards the smoke of cigarette 2 bars cigarette every day during 28 days. P1 was given red guava juice with dose 25% 0,13ml/20gBW, P2 was given red guava juice with dose 50% 0,13ml/20gBW and P3 was given red guava juice with dose 100% 0,13ml/20gBW.

It was obtained that the given of red guava juice for 28 days can significantly increase weight, testis diameter, and seminiferous tubules diameter of mice that were exposed to the smoke. Based on *one way ANOVA* test, there was a significant difference ($p= 0,000$ or $p<0,05$) between the research group. Based on Post Hoc test, it was obtained significant difference on weight, testes diameter, and seminiferous tubules diameter of mice between K- with K+ ($p<0,05$) and there was significant difference between K+ and P2 ($p<0,05$).

It can be concluded that giving red guava juice can effect the increase of weight, testes diameter, and diameter of seminiferous tubules of mice that are exposed to the smoke of cigarettes and the dose 50% 0,13ml/20gBW/day gave better result than other dose.

Keywords: red guava juice, testes, seminiferous tubules, cigarette smoke

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Abstrak

Pemaparan asap rokok dapat menyebabkan peningkatan radikal bebas didalam tubuh. Jus jambu biji merah memiliki kandungan vitamin C yang tinggi. Vitamin C merupakan antioksidan yang efektif dalam menangkal efek dari radikal bebas didalam tubuh. Tujuan dari penelitian ini untuk mengetahui pengaruh pemberian jus jambu biji merah terhadap berat, diameter testis, dan diameter tubulus seminiferus mencit (*Mus musculus*) dipaparkan asap rokok serta mengetahui dosis paling efektif dalam meminimalkan efek radikal bebas dari asap rokok.

Rancangan penelitian yang digunakan adalah eksperimental murni *randomized control group post test only design* dan dilakukan di laboratorium Fakultas Farmasi Universitas Andalas, laboratorium Biologi Fakultas MIPA Universitas Andalas dan laboratorium Biologi Fakultas Kedokteran Universitas Andalas pada Desember hingga Januari 2017. Penelitian dilakukan pada 25 ekor mencit *Mus musculus* yang dibagi 5 kelompok perlakuan. Kelompok kontrol (-) diberi aquades selama perlakuan. Kelompok Kontrol (+), P1, P2, dan P3 dipapar asap rokok sebanyak 2 batang rokok setiap hari selama 28 hari, P1 diberi jus jambu biji merah 25% 0,13ml/20gBB, P2 diberi jus jambu biji merah 50% 0,13ml/20gBB dan P3 diberi jus jambu biji merah 100% 0,13ml/20gBB.

Didapatkan bahwa pemberian jus jambu biji merah selama 28 hari mampu meningkatkan berat, diameter testis dan diameter tubulus seminiferus mencit yang dipapar asap rokok secara signifikan. Berdasarkan uji *one way ANOVA* terdapat perbedaan yang signifikan ($p = 0,000$ atau $p < 0,05$) antara kelompok penelitian. Berdasarkan uji *Post Hoc* didapatkan perbedaan yang signifikan dari berat, diameter testis, dan diameter tubulus seminiferus antara K- dan K+ ($p < 0,05$) dan terdapat perbedaan yang signifikan pada kelompok K+ dengan P2 ($p < 0,05$).

Dapat disimpulkan bahwa pemberian jus jambu biji merah berpengaruh terhadap peningkatan berat, diameter testis, dan diameter tubulus seminiferus mencit yang dipapar asap rokok dan dosis 50% 0,13/20gBB/hari memberikan hasil lebih baik dibanding dosis 25% dan 100%.

Kata kunci: jus jambu biji merah, testis, tubulus seminiferus, asap rokok.