

EFEK BOBA TERUNG BELANDA (*Solanum betaceum* Cav.) TERHADAP KADAR HDL, LDL, DAN RASIO LDL/HDL PADA TIKUS SPRAGUE DAWLEY YANG DIBERI DIET TINGGI LEMAK

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INTISARI

Latar Belakang: Tingginya prevalensi dislipidemia di Indonesia disebabkan oleh berbagai faktor baik *modifiable* maupun *non-modifiable*. Salah satu faktor yang dapat dikendalikan (*modifiable*) adalah faktor diet atau pola makan. Pemberian makanan fungsional seperti boba terung belanda berpotensi untuk memperbaiki profil lipid darah karena adanya kandungan senyawa fenolik dan antioksidan. Sehingga perlu dilakukan uji untuk melihat pengaruh pemberian boba terung belanda terhadap kadar HDL dan LDL tikus *Sprague dawley* yang diberi diet tinggi lemak.

Tujuan: Mengetahui pengaruh pemberian boba terung belanda (*Solanum betaceum*) terhadap kadar HDL dan LDL pada tikus *Sprague dawley* yang diberi diet tinggi lemak.

Metode: Penelitian ini merupakan penelitian eksperimental dengan *pre-posttest control group design* pada hewan coba yaitu tikus *Sprague dawley*. Hewan coba dibagi ke dalam 4 kelompok: kontrol normal (K1), kontrol positif (K2), perlakuan dosis 0,16 g/200 gram BB (P1), perlakuan dosis 0,32 g/200 gram BB (P2). Hewan coba diinduksi pakan tinggi lemak selama 14 hari kemudian dilakukan pengukuran kadar HDL dan LDL sebagai data *pre-test*. Selanjutnya, diberikan pakan standar dan intervensi boba terung belanda pada kelompok perlakuan selama 28 hari untuk kemudian diukur kembali kadar HDL dan LDL sebagai data *post-test*.

Hasil: Terdapat perbedaan signifikan pada data *pre-test* dan *post-test* kadar HDL kedua kelompok perlakuan ($p < 0,05$). Kadar HDL kelompok P1 dan P2 mengalami peningkatan sebesar $36,04 \pm 0,550$ mg/dl dan $46,33 \pm 1,153$ mg/dl atau 143,6% dan 184,62% secara berurutan. Selanjutnya, terdapat perbedaan signifikan pada data *pre-test* dan *post-test* kadar LDL kedua kelompok perlakuan ($p < 0,05$). Kadar LDL kelompok P1 dan P2 mengalami penurunan sebesar $44,28 \pm 0,575$ mg/dl dan $50,83 \pm 0,745$ mg/dl atau 54,9% dan 62,54% secara berurutan. Rasio LDL/HDL menunjukkan adanya penurunan signifikan ($p < 0,05$) dan berada pada rentang normal.

Kesimpulan: Pemberian boba terung belanda selama 28 hari efektif dalam meningkatkan kadar HDL dan menurunkan kadar LDL serta rasio LDL/HDL tikus *Sprague dawley* yang diberi diet tinggi lemak.

Kata Kunci: Boba, terung belanda, HDL, LDL, Rasio LDL/HDL

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THE EFFECT OF TAMARILLO FRUIT BOBA (*Solanum betaceum* Cav.) ON HDL, LDL LEVELS, AND LDL/HDL RATIO IN *SPRAGUE DAWLEY* RATS INDUCED BY HIGH FAT DIET

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ABSTRACT

Background: The high prevalence of dyslipidemia in Indonesia is the result of a complex combination of factors, including both modifiable and non-modifiable variables. One modifiable factor is dietary or eating pattern. The provision of functional foods such as tamarillo boba has the potential to improve blood lipid profiles due to the presence of phenolic compounds and antioxidants. Therefore, further investigation is required to observe the effect of tamarillo boba on the HDL and LDL levels of *Sprague dawley* rats induced by high-fat diet.

Objectives: To evaluate the impact of tamarillo (*Solanum betaceum*) boba on high-density lipoprotein (HDL) and low-density lipoprotein (LDL) levels in *Sprague dawley* rats induced by high-fat diet.

Methods: An experimental study with a pre-posttest control group design was conducted on *Sprague dawley* rats. The animals were divided into four groups: a normal control group (K1), a positive control group (K2), a treatment group with a dose of 0.16 g/200 grams of body weight (P1), and a treatment group with a dose of 0.32 g/200 grams of body weight (P2). The experimental animals were induced with a high-fat diet for 14 days, after which HDL and LDL levels were measured as pre-test data. Thereafter, the treatment groups were provided with standard feed and tamarillo boba intervention for 28 days, after which HDL and LDL levels were measured again as post-test data.

Results: There was a significant difference in the pre-test and post-test HDL levels in both treatment groups ($p < 0.05$). The HDL levels in the P1 and P2 groups increased by 36.04 ± 0.550 mg/dl and 46.33 ± 1.153 mg/dl, or 143.6% and 184.62%, respectively. Furthermore, there was a significant difference in the pre-test and post-test LDL levels in both treatment groups ($p < 0.05$). The LDL levels in the P1 and P2 groups decreased by 44.28 ± 0.575 mg/dl and 50.83 ± 0.745 mg/dl, or 54.9% and 62.54%, respectively. The LDL/HDL ratio showed a significant decrease ($p < 0.05$) and fell within the normal range.

Conclusion: The intervention of tamarillo boba for a treatment period of 28 days was observed to be effective in increasing high-density lipoprotein (HDL) levels and decreasing low-density lipoprotein (LDL) levels and the LDL/HDL ratio in *Sprague dawley* rats induced by high-fat diet.

Keywords: Boba, tamarillo fruit, HDL level, LDL level, LDL/HDL ratio

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