

**POTENSI PEMBERIAN BERAS HITAM GERMINASI VARIETAS
JELITENG DALAM MEMPERBAIKI PROFIL LIPID DARAH TIKUS
HIPERKOLESTEROLEMIA**

INTISARI

Oleh:

ANGESTI ARINA PRAMUDITA

21/479686/TP/13236

Hiperkolesterolemia adalah gangguan metabolisme lemak yang ditandai dengan peningkatan kadar kolesterol dalam darah dengan diagnosis kadar kolesterol darah >200 mg/dL. Prevalensi hiperkolesterolemia di Indonesia sekitar 35%. Hiperkolesterolemia dapat dikendalikan dengan konsumsi pangan fungsional yang dapat menurunkan kolesterol. Beras merupakan makanan pokok Indonesia. Beras hitam mengandung antosianin, serat, GABA, dan gamma oryzanol. Senyawa tersebut diketahui memiliki efek hipokolesterolemik. Proses germinasi dapat meningkatkan kandungan antosianin, serat, GABA, dan gamma oryzanol. Tujuan penelitian ini adalah untuk mengetahui kemampuan beras hitam germinasi varietas Jeliteng dalam memperbaiki profil lipida pada tikus yang diinduksi *high fat diet* terhadap berat badan, asupan pakan, perubahan profil lipid (total kolesterol, kadar trigliserida, kadar HDL, dan kadar LDL), kadar MDA (malondialdehyde), kadar SCFA (*short chain fatty acid*) pada tikus hiperkolesterolemia. Komposisi kimia beras hitam varietas Jeliteng germinasi juga dianalisis mencakup kadar air, abu, protein, lemak, karbohidrat, dan serat. Uji *in vivo* dilakukan dengan menggunakan 20 ekor tikus *sprague dawley* jantan dengan masa intervensi pemberian beras hitam varietas Jeliteng nongerminasi dan germinasi selama 28 hari. Kemudian, diperoleh hasil penelitian yang menunjukkan bahwa beras hitam germinasi secara signifikan meningkatkan kadar air, abu, lemak, dan serat; berpengaruh signifikan mengurangi kadar karbohidrat; tidak berpengaruh signifikan terhadap kadar protein. Germinasi beras hitam varietas Jeliteng secara signifikan dapat menurunkan berat badan, menurunkan total kolesterol, kadar trigliserida, LDL, meningkatkan kadar HDL, menurunkan kadar MDA (malondialdehyde); dan meningkatkan kadar *short chain fatty acid* (SCFA), khususnya asam propionat. Beras hitam varietas Jeliteng germinasi memiliki potensi dalam memperbaiki profil lipid darah tikus hiperkolesterolemia

Kata kunci: hiperkolesterolemia, beras hitam, germinasi, *in vivo*, profil lipid

***THE POTENTIAL OF GERMINATED JELITENG BLACK RICE IN
IMPROVING BLOOD LIPID PROFILE HYPERCHOLESTEROLEMIC RATS***

ABSTRACT

By:

ANGESTI ARINA PRAMUDITA

21/479686/TP/13236

Hypercholesterolemia is a lipid metabolism disorder characterized by elevated blood cholesterol levels. It is diagnosed when blood cholesterol exceeds 200 mg/dL. The prevalence of hypercholesterolemia in Indonesia is approximately 35%. Hypercholesterolemia can be managed by consuming functional food that help lower cholesterol levels. Rice is a staple food in Indonesia and black rice contains anthocyanins, fiber, gamma-aminobutyric acid (GABA), and gamma-oryzanol, which are known to have hypocholesterolemic effects. Germination can enhance the levels of anthocyanins, fiber, GABA, and gamma-oryzanol. This study aims to determine the ability of germinated black rice of the Jeliteng variety to improve lipid profiles in rats induced with a high-fat diet. The parameters observed include body weight, feed intake, changes in lipid profile (total cholesterol, triglyceride levels, HDL, and LDL levels), malondialdehyde (MDA) levels, and short-chain fatty acid (SCFA) levels in hypercholesterolemic rats. The chemical composition of germinated Jeliteng black rice was also analyzed, covering moisture, ash, protein, fat, carbohydrate, and fiber content. An in vivo study was conducted using 20 male Sprague Dawley rats with an intervention period of 28 days during which they were fed non-germinated and germinated Jeliteng black rice. The study results showed that germination significantly increased moisture, ash, fat, and fiber content while significantly reducing carbohydrate content. However, it did not significantly affect protein levels. Germination of Jeliteng black rice significantly reduced body weight, total cholesterol, triglyceride levels, and LDL levels while increasing HDL levels and reducing MDA (malondialdehyde) levels. However, it increase levels of short chain fatty acids (SCFA), especially propionic acid. Germinated Jeliteng black rice has the potential to improve the blood lipid profile of hypercholesterolemic rats.

Keywords: *hypercholesterolemia, black rice, germination, in vivo, lipid profile*