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**Pengaruh Pemberian Produk Pangan Fungsional "Black Rice Crunch" terhadap Berat Badan dan
Profil Sel Darah Merah Tikus (Rattus norvegicus Berkenhout, 1769) Obesitas**
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PENGARUH PEMBERIAN PRODUK PANGAN FUNGSIONAL "*BLACK RICE CRUNCH"* TERHADAP BERAT BADAN DAN PROFIL SEL DARAH MERAH TIKUS (*Rattus norvegicus* BERKENHOUT, 1769) OBESITAS

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INTISARI

Black Rice Crunch (BRC) merupakan produk olahan berbahan dasar tepung beras hitam yang telah diproses untuk menjadi pangan fungsional. Beras hitam memiliki senyawa aktif yang berpotensi sebagai anti-obesitas. Penelitian ini dilakukan untuk mempelajari pengaruh produk BRC terhadap berat badan dan profil sel darah merah hewan model berupa tikus obesitas. Tikus *Wistar* jantan yang berasal dari LPPT UGM Unit 4 dibagi menjadi 5 kelompok: tikus kontrol (NO), tikus obesitas (BRC0), tikus obesitas dengan pakan BRC 25% (BRC1), tikus obesitas dengan pakan BRC 50% (BRC2) dan tikus obesitas dengan pakan BRC 75% (BRC3). Penelitian diawali dengan pemberian pakan obesitas selama 5 minggu. Tikus kemudian diberi pakan BRC selama 8 minggu. Sampel darah diambil sebanyak 4 kali: sebelum diberi pakan obesitas (pre-obesitas/*baseline*), setelah mencapai kondisi obesitas (pasca-obesitas/pre-BRC), setelah 4 minggu diberi pakan BRC (pasca-BRC 4 minggu) dan setelah 8 minggu diberi pakan BRC (pasca-BRC 8 minggu). Berat badan diukur saat pengambilan sampel darah. Profil sel darah merah (RBC, hemoglobin, hematokrit, MCV, MCH dan MCHC) dihitung dengan *hematology analyzer* seri Sysmex KX-21. Hasil pengukuran berat badan dan profil sel darah merah *baseline* dan pasca-obesitas (kelompok kontrol dan obesitas) diuji *one-way ANOVA* yang dilanjutkan dengan *Tukey's comparison test*, begitu juga pada seluruh kelompok saat pre-BRC, pasca-BRC 4 minggu dan 8 minggu. Hasil penelitian menunjukkan bahwa pakan BRC 75% efektif menekan penambahan berat badan tikus obesitas. Kondisi hematologis (RBC, hemoglobin, hematokrit dan MCHC) semua kelompok tikus masih dalam rentang kondisi normal. Terjadi penurunan nilai MCV pada semua kelompok saat pasca-BRC 4 minggu dan 8 minggu. Nilai MCV dan MCH relatif lebih sedikit di bawah rentang normal pada pemberian BRC 75% saat pasca-BRC 4 minggu dan 8 minggu.

Kata kunci: beras hitam, *black rice crunch*, obesitas, pangan fungsional, sel darah merah.

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EFFECTS OF FUNCTIONAL FOOD PRODUCT "BLACK RICE CRUNCH" ON BODY WEIGHT AND RED BLOOD CELL PROFILE OF OBESE RATS (*Rattus norvegicus* BERKENHOUT, 1769)

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ABSTRACT

Black Rice Crunch (BRC) is a processed product made from black rice flour which has been processed to become functional food. Black rice has active compounds that have potential as anti-obesity. This research was conducted to study the effect of BRC products on body weight and red blood cell profile of obese rats. Male Wistar rats from LPPT UGM Unit 4 were divided into 5 groups: control rats (NO), obese rats (BRC0), obese rats with 25% BRC (BRC1), obese rats with 50% BRC (BRC2) and obese rats with 75% BRC (BRC3). The research was started by giving obese food for 5 weeks. Then, rats were fed BRC for 8 weeks. Blood samples were taken 4 times: before being fed by obese feed (pre-obese/baseline), after reaching a state of obesity (post-obesity/pre-BRC), after 4 weeks being given BRC (post-BRC 4 weeks) and after 8 weeks being given BRC (post-BRC 8 weeks). Body weight was measured at the time of blood sampling. The red blood cell profile (RBC, hemoglobin, hematocrit, MCV, MCH dan MCHC) was calculated with the Sysmex KX-21 series hematology analyzer. The results of measurements of body weight and red blood cell profile on baseline and post-obesity (control and obesity group) were tested by one-way ANOVA followed by the Tukey's comparison test, likewise in all groups at pre-BRC, post-BRC 4 weeks and 8 weeks. The results showed that 75% BRC feed was effective in suppressing the weight gain of obese rats. The hematological conditions (RBC, hemoglobin, hematocrit and MCHC) of all groups of rats were within the normal range. There was a decrease in MCV values in all groups at 4 weeks and 8 weeks post-BRC. The MCV and MCH values were relatively slightly below the normal range when given 75% BRC at 4 weeks and 8 weeks post-BRC.

Keyword: black rice, black rice crunch, functional food, obesity, red blood cell profile.