

**Kadar SGPT, SGOT dan Bilirubin Darah Tikus (*Rattus Norvegicus* Berkenhout, 1769) Hiperglikemia dengan Perlakuan Diet Pelet Nasi dari Tiga Kultivar Padi (*Oryza Sativa* L.)**

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**INTISARI**

Diabetes Mellitus (DM) adalah salah satu penyakit degeneratif yang banyak diderita masyarakat akibat kondisi hiperglikemia berkepanjangan. Penelitian sebelumnya menyatakan bahwa kadar glukosa darah yang tinggi mengakibatkan munculnya stres oksidatif dan perubahan profil lipid yang dapat mengganggu fungsi hati. Kadar SGPT, SGOT dan bilirubin yang tinggi dapat dijadikan sebagai indikasi adanya gangguan fungsi hati. Salah satu alternatif pengobatan DM adalah dengan memanfaatkan pangan fungsional. Beras merah dan beras hitam diketahui mengandung senyawa bioaktif seperti antosianin, oryzanol dan tocopherol yang mampu memperbaiki profil lipid dan berperan sebagai antioksidan. Penelitian ini bertujuan untuk mengetahui pengaruh induksi *Streptozotocin* (STZ) terhadap gangguan fungsi hati ditinjau dari kadar SGPT, SGOT dan bilirubin serta mempelajari pengaruh pemberian diet pelet nasi 'IR-64', pelet nasi 'Cempo Abang' dan pelet nasi 'Cempo Ireng' terhadap kadar SGPT, SGOT dan bilirubin tikus hiperglikemia. Penelitian merupakan penelitian eksperimental dengan rancangan acak lengkap menggunakan 30 tikus putih Sprague-Dawley jantan yang dibagi menjadi 5 kelompok perlakuan dengan masing-masing 6 ulang. Kondisi hiperglikemia dibuat dengan injeksi STZ 65 mg/kg bb dan Nicotinamide (NA) 230 mg/kg bb melalui rute administrasi intraperitoneal. Setelah kondisi hiperglikemia tercapai, empat kelompok tikus hiperglikemia diberi perlakuan. Kelompok pertama diberi pakan standar sebagai kontrol hiperglikemia, kelompok kedua diberi pakan pelet nasi 'IR-64', kelompok ketiga diberi pakan pelet nasi 'Cempo Abang' dan kelompok keempat diberi pakan pelet nasi 'Cempo Ireng'. Setelah 30 hari perlakuan. Serum darah tikus diambil melalui sinus orbitalis. Kadar SGPT, SGOT dan bilirubin dianalisis dengan metode spektrofotometri. Analisis statistik dilakukan dengan ANOVA dan uji Duncan menggunakan SPSS versi 20. Hasil penelitian menunjukkan bahwa induksi STZ mampu meningkatkan kadar SGPT, SGOT dan bilirubin. Pemberian diet pelet dari tiga kultivar padi belum menunjukkan efek yang signifikan terhadap penurunan kadar SGPT, SGOT dan bilirubin. Ada kecenderungan pemberian diet nasi 'Cempo Abang' mampu menurunkan kadar SGPT dan SGOT karena *scavenging activities* dalam ekstrak beras merah lebih tinggi dari beras hitam.

**Kata Kunci:** Hiperglikemia, *Streptozotocin*, SGPT, SGOT, bilirubin

**Levels Of SGPT, SGOT and Bilirubin in Blood Of Hyperglycemic Rats (*Rattus Norvegicus Berkenhout, 1769*) with Treatment Of Pellets Diet from Three Rice Cultivar (*Oryza Sativa* L.)**

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**ABSTRACT**

Diabetes Mellitus (DM) is one of degenerative disease that affects many people as a result of prolonged hyperglycemia conditions as a consequence of pancreas malfunction to produce insulin. A previous studies have shown that high blood glucose levels cause oxidative stress and changes of the lipid profile that may interfere the metabolism function of liver cells. Levels of SGPT, SGOT and bilirubin can be used as indication of liver malfunction. One alternative treatment of DM is utilize the functional. Red rice and black rice contains bioactive compounds such as anthocyanins, oryzanol and tocopherols that can improve lipid profile and act as antioxidant. This study aims to determine the effect of *Streptozotocin* (STZ) induction to liver malfunction in terms of levels of SGPT, SGOT and bilirubin also to learn the influence of white rice pellets 'IR-64, red rice pellets 'Cempo Abang' and black rice pellets 'Cempo Ireng' on the levels of SGPT, SGOT and bilirubin of rats with hyperglycemia. The research was an experimental study with a completely randomized design using 30 male rats strain Spargue-Dawley that were divided into 5 groups; each groups contain 6 rats. Hyperglycemia conditions induced by injection of STZ 65 mg/kg bw and Nicotinamide (NA) 230 mg/kg bw injected through intraperitoneal routes. After the hyperglycemia condition is achieved, the four groups are treated with four types of feed. The first group was fed with standard pellets as a control of hyperglycemia, the second group was fed with pellets of white rice, the third group were fed with pellets of red rice and a fourth group was fed with pellets of black rice. After 30 days of treatment, rats blood serum taken through sinus orbitalis. Levels of SGPT, SGOT and bilirubin were analyzed by spectrophotometric method. Statistical analysis was performed by ANOVA and Duncan test using SPSS version 20. The results showed that the induction of STZ were able to increase the levels of SGPT, SGOT and bilirubin. Given diet pellets of three rice cultivars have not shown any significant effect. There is a tendency of giving red rice diet is able to reduce levels of SGPT and SGOT because scavenging activities in red rice is higher than black rice.

**Keywords:** Hyperglycemia, *Streptozotocin*, SGPT, SGOT, bilirubin