

INTISARI

Latar Belakang. Diabetes melitus (DM) yang berkepanjangan akan memiliki risiko mengalami stres. Stres akan menyebabkan peningkatan glukosa darah dan berdampak langsung pada sistem neuroendokrin yang dapat memperparah penyakit DM. Serotonin yang terkandung pada *flakes* kulit pisang kepok kuning (*Musa balbisiana* Colla) berperan dalam menurunkan kadar glukosa darah dan penurunan nilai *immobility time* pada tikus diabetes.

Tujuan Penelitian. Untuk mengkaji pengaruh pemberian *flakes* kulit pisang kepok kuning (*Musa balbisiana* Colla) sebagai antidiabetes dan antidepresan pada tikus model diabetes.

Metode Penelitian. 30 ekor tikus Wistar Jantan diinduksi STZ untuk pembuatan model diabetes, dan dibagi menjadi 6 kelompok: kelompok P1 (Normal), kelompok P2 (DM + *flakes* kulit pisang 10%), kelompok P3 (DM + pakan standar + TST), kelompok P4 (DM + *flakes* kulit pisang 5% + TST), kelompok P5 (DM + *flakes* kulit pisang 10% + TST), kelompok P6 (DM + *flakes* kulit pisang 20% + TST). Intervensi dilaksanakan selama 21 hari dan pemberian *flakes* kulit pisang kepok kuning sebanyak 15 gram setiap hari. Pemeriksaan kadar glukosa darah diukur sebelum dan sesudah intervensi, penilaian *immobility time* pada hari ke-21 dengan metode TST, dan ekspresi serotonin di pulau Langerhans dengan metode *Allred score*.

Hasil Penelitian. Secara signifikan terjadi penurunan kadar glukosa darah pada kelompok P6. Penurunan nilai *immobility time* secara signifikan juga terdapat pada kelompok P6. Ekspresi serotonin pada semua kelompok tidak berbeda signifikan tetapi pada kelompok P6 memiliki interpretasi *Allred score* mendekati dengan kelompok P1.

Kesimpulan. Pemberian *flakes* kulit pisang kepok kuning (*Musa balbisiana* Colla) dapat menurunkan kadar glukosa darah, nilai *immobility time* menunjukkan lebih rendah secara signifikan, dan ekspresi serotonin di pankreas tidak menunjukkan signifikan.

Kata Kunci: Diabetes Melitus, Stres, Serotonin, *Flakes* Kulit Pisang

ABSTRACT

Background. Diabetes mellitus (DM) will have the risk of prolonged stress. Stress will cause an increase in blood glucose and have a direct impact on the neuroendocrine system which can worsen DM disease. Serotonin is contained in a yellow kepok banana peel flakes (*Musa balbisiana* Colla) role in reducing blood glucose levels and decreasing the immobility time value in diabetic rats.

Objective. To determine the effect of yellow kepok banana peel flakes (*Musa balbisiana* Colla) as antidiabetic and antidepressants in rat model of diabetes and stress.

Methods. 30 rats Wistar male induced Streptozotocin (STZ) to models of diabetes, and were divided into 6 groups: Normal group without treatment (P1), DM group + banana peel flakes 10% + without TST (P2), DM group + standard feed + TST (P3), DM group + banana peel flakes 5% + TST (P4), DM group + banana peel flakes 10% + TST (P5), and DM group + banana peel flakes 20% + TST (P6). Intervention was conducted over 21 days and giving yellow kepok banana peel flakes as much as 15 grams per day. Examination of blood glucose levels was measured before and after the intervention, immobility time assessment on day 21 with TST methods, and assessment serotonin expression in the islets of Langerhans with the method of Allred score.

Result. Significantly decreased blood glucose levels in P6 group. Significant decrease in immobility time was also found in P6 group. Serotonin expression in all groups did not differ significantly, but the P6 group the interpretation of Allred scores was close to that of P1 group.

Conclusion. Giving yellow kepok banana peel flakes (*Musa balbisiana* Colla) can decrease blood glucose levels, the value of immobility time shows significantly lower and serotonin expression in the pancreas did not differ significantly.

Keywords: Diabetes mellitus, Stress, Serotonin, Banana Peel Flakes