

INTISARI

Latar Belakang. Penurunan daya tahan terhadap stresor yang diikuti dengan peningkatan *bowel transit time* dapat berpengaruh terhadap konsistensi feses. Kulit pisang kepok kuning (*Musa balbisiana* Colla) yang merupakan bahan dasar *flakes* mengandung triptofan yang merupakan prekursor serotonin. Serotonin merupakan faktor utama dalam respon “*fight or flight*”. Sebanyak 95% serotonin dihasilkan di saluran gastrointestinal dan sisanya di hasilkan di otak. Mengonsumsi *flakes* kulit pisang kepok kuning dengan dosis yang tepat diharapkan dapat meningkatkan daya tahan terhadap stres dan mempertahankan gula darah dalam kadar normal.

Tujuan Penelitian. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *flakes* kulit pisang kepok kuning terhadap nilai *immobility time* dan ekspresi serotonin di epitel mukosa kolon tikus Wistar (*Rattus norvegicus*) jantan.

Metode Penelitian. Tikus Wistar Jantan, usia 6-8 minggu dengan berat 100-150 g, dikelompokkan menjadi 5 kelompok. Dilakukan *Tail Suspension Test* (TST) untuk melihat aktivitas dari serotonin. Kelompok P1 diberi pakan standar (*flakes* 0%); Kelompok P2 diberi pakan standar + TST; Kelompok P3 diberi *flakes* 5% + TST; Kelompok P4 diberi *flakes* 10% + TST; Kelompok P5 diberi *flakes* 20% + TST. Pemberian *flakes* dilakukan selama 21 hari; penilaian konsistensi feses dilakukan pada hari ke-0, ke-7, ke-14 dan ke-21 ; TST dilakukan pada hari ke-21. Terminasi dilakukan pada hari ke-22 untuk pengambilan kolon, selanjutnya dilakukan prosedur untuk pengecatan IHC dan penilaian *Allred Score* untuk menilai ekspresi serotonin di epitel mukosa kolon.

Hasil Penelitian. Hasil penelitian *Flakes* kulit pisang kepok kuning menyebabkan nilai *immobility time* lebih rendah secara signifikan dibandingkan dengan kelompok yang tidak diberi *flakes*. *Flakes* kulit pisang kepok kuning menyebabkan skor konsistensi feses lebih rendah secara signifikan dibandingkan kelompok yang tidak diberi *flakes*. *Flakes* kulit pisang kepok kuning menyebabkan ekspresi serotonin di epitel mukosa kolon lebih tinggi secara signifikan dibandingkan dengan kelompok yang tidak diberi *flakes*.

Kesimpulan. Pemberian *flakes* kulit piang kepok kuning (*Musa balbisiana* Colla) dapat menurunkan nilai *imobility time* secara signifikan, skor konsistensi feses lenih rendah ke skor normal secara signifikan, dan ekspresi serotonin lebih tinggi secara signifikan di epitel mukosa kolon dibandingkan kelompok yang tidak diberi *flakes*.

Kata kunci: *flakes*, pisang kepok kuning, kulit pisang, serotonin, ekspresi serotonin, data tahan stres

ABSTRACT

Background. *Decreased resistance to stressors followed by an increase in bowel transit time can affect the consistency of faeces. Efforts have been made to improve the resistance to stressors which have been carried out pharmacologically and non-pharmacologically. Non-pharmacological therapy is now more preferred because it has minimal side effects. Indonesia is a country with abundant banana yields. Banana peels are currently not utilized properly by the community. Kepok kuning banana peel flakes are foods made from kepok kuning banana peel. Kepok kuning banana peel contains tryptophan which is a precursor of serotonin. Serotonin is a major factor in the "fight or flight" response. As much as 95% of serotonin is produced in the gastrointestinal tract and the rest is produced in the brain. Consuming the yellow kepok banana peel flakes at the right dose is expected to increase stress resistance and maintain blood sugar in normal levels.*

Objective. *This study aims to determine the effect of giving kepok kuning banana peel flakes on the value of immobility time and expression of serotonin in the mucosal epithelium of the male Wistar colon (*Rattus norvegicus*).*

Methods. *Male Wistar rats, age 6-8 weeks, weighing 100-150 g, divided into 5 groups. Do the Tail Suspension Test (TST) to view the activity of serotonin. P1 group was fed a standard (flakes 0%); P2 group was fed standard + TST; P3 group was given flakes 5% + TST; P4 group was given a 10% + TST flakes; P5 group were given a 20% + TST flakes. Giving flakes carried out for 21 days; faecal consistency assessment is carried out on days 0, 7, 14 and 21; TST performed on day-21. Terminate performed on day 22 for retrieval of the colon, then performed the procedure for IHC staining and Allred Score ratings to assess serotonin expression in colonic mucosal epithelium.*

Result. *The results of the study of kepok kuning banana peel flakes cause significantly lower immobility time compared to the group without flakes. Kepok kuning banana peel flakes cause significantly lower feces consistency scores compared to the group without flakes. Kepok kuning banana peel flakes caused significantly higher serotonin expression in the colonic mucosal epithelium compared to the group without flakes.*

Conclusion. *Consumption of kepok kuning banana peel flakes can increase resistance to the presence of stressors, help increase intestinal motility and can increase the expression of serotonin in the mucosal epithelium of the colon. Thus, kepok kuning banana peel flakes can be well absorbed by the intestine.*

Keywords: *flakes, kepok kuning, banana peels, serotonin, serotonin expression data stress resistant*