TESIS

PENGARUH PEMBERIAN YOGURT SINBIOTIK TEPUNG PISANG TANDUK (*Musa paradisiaca fa. corniculata*) TERHADAP KADAR GLUKOSA DARAH DAN INSULIN TIKUS SINDROM METABOLIK

THE EFFECT OF SYNBIOTIC YOGURT BANANA (*Musa paradisiaca fa. corniculata*) FLOUR ON BLOOD GLUCOSE AND INSULIN LEVELS IN METABOLIC SYNDROME RATS

Tesis
Untuk memenuhi sebagian persyaratan
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ABSTRACT

THE EFFECT OF SYNBIOTIC YOGURT BANANA (*Musa paradisiaca fa. corniculata*) FLOUR ON BLOOD GLUCOSE AND INSULIN LEVELS IN METABOLIC SYNDROME RATS

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Background : The metabolic syndrome begins with insulin resistance characterized by hyperinsulinemia and hyperglycemia. Synbiotic yogurt banana flour contains probiotic, prebiotic, and antioxidant which all of them play role improving the metabolic syndrome.
Objective : To prove the effect of synbiotic yogurt banana flour lowering blood glucose and insulin levels in metabolic syndrome rats.
Methods : True-experimental study with randomized controlled group pre-post test design in male wistar rats. Eighteen rats were induced to become metabolic syndrome with High Fat Fructose Diet (HFFD) for 2 weeks and they were divided into 3 groups: control (K), treatment group which were P1 and P2 receiving doses of synbiotic yogurt banana flour 0.009 and 0.018 ml/grBW/day respectively. The interventions were carried out for 2 weeks. The differences of the pre-post interventions data were analyzed by *paired t-test*, where as the differences between the groups were analyzed by *One-way* Anova and *Kruskal Wallis* followed by *post hoc* analysis.
Results : Treatment group P1 and P2 experienced a decrease in blood glucose levels significant post-intervention ($p<0.05$). Treatment group P2 experienced a decrease in insulin levels significant post-intervention ($p<0.05$).
Conclusion : Synbiotic yogurt banana flour administration lowers blood glucose levels and insulin levels in metabolic syndrome rats.
Keyword: glucose, insulin, metabolic syndrome, synbiotic yogurt banana

ABSTRAK

PENGARUH PEMBERIAN YOGURT SINBIOTIK TEPUNG PISANG TANDUK (*Musa paradisiaca fa. corniculata*) TERHADAP KADAR GLUKOSA DARAH DAN INSULIN TIKUS SINDROM METABOLIK

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Latar belakang : Sindrom metabolik diawali dengan resistensi insulin yang ditandai dengan hiperinsulinemia dan hiperglikemia. Yogurt sinbiotik tepung pisang tanduk mengandung probiotik, prebiotik, dan antioksidan dapat memperbaiki kondisi sindrom metabolik.

Tujuan : Membuktikan pengaruh pemberian yogurt sinbiotik tepung pisang tanduk terhadap penurunan kadar glukosa darah dan insulin tikus sindrom metabolik.

Metode : *True-experimental* dengan rancangan *randomized controlled group pre-post test design* pada tikus wistar jantan. Delapan belas tikus dibuat sindrom metabolik dengan *high fat fructose diet* (HFFD) selama 2 minggu kemudian dibagi 3 kelompok secara acak: kelompok kontrol (K), kelompok perlakuan 1 (P1) dan kelompok perlakuan 2 (P2) dengan dosis pemberian yogurt sinbiotik tepung pisang tanduk 0.009 dan 0.018 ml/grBB/hari tikus. Intervensi diberikan selama 2 minggu. Uji beda sebelum dan sesudah perlakuan menggunakan uji *paired t-test*. Uji beda selisih sebelum dan sesudah perlakuan antar kelompok menggunakan uji *One-way* Anova dan *Kruskal Wallis* yang dilanjutkan analisis *post hoc*.

Hasil : Kelompok P1 dan P2 mengalami penurunan kadar glukosa darah yang bermakna setelah intervensi ($p<0.05$). Kelompok P2 mengalami penurunan kadar insulin yang bermakna setelah intervensi ($p<0.05$).

Simpulan : Pemberian yogurt sinbiotik tepung pisang tanduk terbukti menurunkan kadar glukosa darah dan insulin pada tikus sindrom metabolik.

Kata kunci: glukosa, insulin, sindrom metabolik, yogurt sinbiotik pisang