

## ABSTRACT

### THE EFFECT OF RAMBUTAN SEED (*Nephelium lappaceum L.*) INFUSION FERMENTED WITH YOGURT ON REDUCING BLOOD GLUCOSE LEVELS IN WISTAR RATS (*Rattus norvegicus*) DIABETES MELLITUS MODEL

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**Background:** Diabetes mellitus is a metabolic disorder characterized by hyperglycemia. Rambutan seeds (*Nephelium lappaceum L.*) contain bioactive compounds such as flavonoids, alkaloids, and tannins that may contribute to blood glucose reduction, and fermentation is expected to enhance their biological activity.

**Method:** This experimental study employed a pretest–posttest control group design involving 35 male Wistar rats divided into seven groups: healthy control, negative control, four treatment groups receiving fermented rambutan seed decoction for 0, 3, 5, and 7 days at a dose of 32 mg/kg body weight, and a glibenclamide group. Interventions were administered for 14 days, and random blood glucose (RBG) levels were measured before and after treatment. Data were analyzed using one-way ANOVA and Post Hoc Duncan.

**Result:** The analysis of pre–post differences in random blood glucose levels showed that fermented rambutan seed infusion reduced blood glucose levels in all treatment groups, with the greatest reduction observed in the 7-day fermentation group ( $46.25 \pm 4.11$  mg/dL), followed by the 5-day ( $33.00 \pm 4.32$  mg/dL), and 3-day ( $13.25 \pm 6.02$  mg/dL). Group with 7 days fermentation displayed the highest decrease of blood glucose level with 50 mg/dl

**Conclusion:** Administration of fermented rambutan seed decoction for 14 days affected random blood glucose levels in streptozotocin-induced Wistar rats, with the 7-day fermentation showing the greatest glucose-lowering effect.

**Keywords:** Diabetes mellitus; fermentation; rambutan seed; random blood glucose; yogurt

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