

ABSTRACT

THE EFFECT OF RAMBUTAN SEED (*Nephelium lappaceum* L.) INFUSION FERMENTED WITH YOGURT ON REDUCING HbA1c LEVELS IN WISTAR RATS (*Rattus norvegicus*) DIABETES MELLITUS MODEL

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Background: Diabetes mellitus is a chronic metabolic disease characterized by persistent hyperglycemia and elevated HbA1c levels. The use of natural products as alternative therapies continues to be explored. Rambutan seeds (*Nephelium lappaceum* L.) contain flavonoids and antioxidants that have the potential to improve glycemic control. This study aimed to evaluate the most effective fermentation duration for reducing HbA1c levels in Wistar rats (*Rattus norvegicus*).

Method: This study used a pretest–posttest control group design involving 35 male Wistar rats (*Rattus norvegicus*) divided into seven groups. The researcher provides several types of infusions made from fermented rambutan seeds to determine which duration has the greatest effect. HbA1c levels were analyzed using Welch’s ANOVA, followed by the Games–Howell post hoc test when significant differences were observed ($p < 0.05$).

Result: There was a significant difference in HbA1c reduction among the intervention groups. The greatest reduction among the fermentation treatments was observed in the 5-day fermentation group, followed by the 7-day, 3-day, and 0-day fermentation groups. The glibenclamide group showed the highest overall reduction.

Conclusion: Rambutan seed infusion fermented for five days showed the greatest effectiveness in lowering HbA1c levels.

Keywords: Diabetes, Rambutan Seed, HbA1c, Yogurt, Wistar rats