

CHAPTER V CONCLUSION AND SUGGESTION

A. Conclusion

Based on the research results, it can be concluded that:

1. Administration of streptozotocin (STZ) in Groups B, C, D, E, F, and G increased HbA1c levels compared with the healthy control group (Group A), confirming the successful establishment of a diabetic rat model.
2. There was a significant difference in HbA1c levels between the streptozotocin-induced group without treatment (Group B) and the streptozotocin-induced groups receiving treatments (Groups C–G), indicating that therapeutic interventions affected HbA1c levels.
3. Administration of non-fermented rambutan seed (*Nephelium lappaceum* L.) infusion (0-day fermentation) at a dose of 19.2 mg/kgBW for 14 days in group C reduced HbA1c levels, with a mean decrease of $0.8225 \pm 0.8694\%$.
4. Administration of rambutan seed infusion fermented with yogurt for 3 days at a dose of 19.2 mg/kgBW in group D reduced HbA1c levels, with a mean decrease of $1.1625 \pm 0.1755\%$.
5. Administration of rambutan seed infusion fermented with yogurt for 5 days at a dose of 19.2 mg/kgBW in group E reduced HbA1c levels, with a mean decrease of $1.6925 \pm 0.4655\%$.
6. Administration of rambutan seed infusion fermented with yogurt for 7 days at a dose of 19.2 mg/kgBW in group F reduced HbA1c levels, with a mean decrease of $1.4700 \pm 0.4292\%$.
7. Administration of glibenclamide at a dose of 0.09 mg/200 gBW in group G produced the greatest reduction in HbA1c levels, with a mean decrease of $1.7080 \pm 0.25381\%$, and served as the most effective intervention in this study.
8. Overall, administration of yogurt-fermented rambutan seed infusion at a dose of 19.2 mg/kgBW for 14 days affected the reduction of HbA1c levels in streptozotocin-induced diabetic Wistar rats, with 5-day fermentation producing the most effective HbA1c-lowering effect

among the fermentation treatments, while glibenclamide remained the most potent comparator.

B. Suggestion

1. Future studies are recommended to use raw materials in dried, powdered, or standardized extract forms to ensure material availability and consistency, and to align the research timeline with the rambutan harvesting season.
2. To address the limited availability of STZ, more systematic procurement planning is required, including the identification of alternative suppliers or the use of validated alternative induction methods.
3. Further studies should optimize STZ and herbal dosages through preliminary or dose-escalation studies to improve the validity and reproducibility of the findings.
4. Animal age should be strictly controlled in the study design, as older rats exhibit increased physiological vulnerability to experimental treatments and pathological conditions.