

## **Pengaruh Pemberian Minuman Biji Alpukat (*Persea americana* mill.) dan Jahe (*Zingiber officinale* rosc.) Terhadap Kadar Glukosa Darah Mencit Diabetes Melitus Tipe 2**

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### **ABSTRAK**

**Latar Belakang:** Diabetes tipe 2 adalah kondisi tubuh mengalami resistensi insulin yang dapat disebabkan stress oksidatif dan inflamasi. Biji alpukat dan jahe mengandung senyawa metabolit yang berperan sebagai antioksidan dan antiinflamasi yang mampu memperbaiki resistensi insulin dan menurunkan kadar glukosa darah.

**Tujuan:** Mengetahui pengaruh pemberian minuman biji alpukat dan jahe terhadap penurunan kadar glukosa darah puasa mencit diabetes tipe 2

**Metode:** Penelitian *true experimental* rancangan desain kelompok kontrol acak *pretest-posttest*. Mencit jantan sejumlah 20 ekor dikelompokkan secara acak pada 3 kelompok yaitu kelompok kontrol positif (K+), kontrol negatif (K-), dan perlakuan (P). Induksi STZ 180 mg/kgBB dan NA 70 mg/kgBB pada kelompok K+ dan P untuk pengondisian diabetes tipe 2. Kelompok P diberi perlakuan minuman kombinasi biji alpukat dan jahe melalui oral selama 7 hari dengan dosis 420 mg/kgBB. Biji alpukat dan jahe dikombinasikan dengan perbandingan 60:40. Kadar glukosa darah puasa (GDP) diukur dengan metode *strip test* glukometer. Data penelitian dianalisis statistik dengan uji *Paired T-test*, uji *Wilcoxon*, uji *One Way Anova*, dan uji *Kruskal Wallis* pada *software* SPSS.

**Hasil:** Terdapat penurunan kadar GDP pada kelompok K- dan P setelah masa perlakuan, sedangkan kelompok K+ mengalami peningkatan. Perubahan kadar GDP signifikan terdapat pada kelompok P ( $p=0,027$ ) yaitu penurunan sebesar  $61,25 \pm 30,03$  mg/dL atau 17,67%. Terdapat perbedaan pengaruh antarkelompok yang dilihat dari adanya perbedaan signifikan ( $p= 0,049$ ) rerata perubahan kadar GDP setelah perlakuan.

**Simpulan:** Minuman kombinasi biji alpukat dan jahe berpengaruh signifikan terhadap penurunan kadar glukosa darah puasa mencit diabetes tipe 2.

**Kata Kunci:** biji alpukat; jahe; diabetes; kadar glukosa darah puasa

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***Effects of Avocado Seed (Persea americana mill.) and Ginger (Zingiber officinale rosc.) Drink Administration on Blood Glucose Levels in Type 2 Diabetic Mice***

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**ABSTRACT**

**Background:** Type 2 diabetes is a health condition characterized by insulin resistance, often triggered by oxidative stress and inflammation. Avocado seed and ginger contain metabolite compounds with antioxidant and anti-inflammatory properties, which can help enhance insulin sensitivity and reduce blood glucose levels.

**Objectives:** To study the effect of administering avocado seed and ginger drinks on the reduction of fasting blood glucose levels in type 2 diabetic mice

**Methods:** This is a true experimental study using a pretest-posttest randomized control group design. The study involved 20 male mice randomly divided into three groups: a positive control group (K+), a negative control group (K-), and a treatment group (P). Type 2 diabetes was induced in the K+ and P groups through the administration of STZ at 180 mg/kgBW and NA at 70 mg/kgBW. The treatment group (P) received an oral combination of avocado seed and ginger drink for seven days at a dose of 420 mg/kgBW with a 60:40 ratio of avocado seed to ginger. Fasting blood glucose levels were measured using the glucometer strip test method. Statistical analysis was conducted using Paired T-test, Wilcoxon test, One Way Anova test, and Kruskal Wallis test in SPSS software.

**Results:** There was a decrease in GDP levels in both the K- and P groups during the treatment period, whereas the K+ group showed an increase. Significantly, group P demonstrated substantial changes in GDP levels ( $p = 0.027$ ), with a decrease of  $61.25 \pm 30.03$  mg/dL, equivalent to 17.7%. There is a difference in the intergroup effects observed in the presence of a significant difference ( $p = 0.049$ ) in the mean change in GDP levels after the treatment.

**Conclusion:** The combination drink of avocado seed and ginger has a significant effect on reducing fasting blood glucose levels in type 2 diabetic mice.

**Keywords:** Avocado seed; ginger; diabetes; fasting blood glucose

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