

## ABSTRACT

### EFFECT OF KERSEN FRUIT EXTRACT (*Muntingia calabura*) ON BLOOD GLUCOSE LEVELS AND HISTOPATHOLOGICAL FEATURE RATS OF PANCREAS (*Rattus novergicus*) INDUCED BY STREPTOZOTOCIN

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Diabetes mellitus is a set of symptoms which is marked by exceed of blood glucose level than its normal values (hyperglycemia) due to body lack of insulin. Kersen fruit (*Muntingia calabura*) is a plant expected containing active antidiabetic ingredients such as ascorbic acid, fiber, beta-carotene, riboflavin, thiamine and niacin. The study was conducted to determine kersen fruit potentials in lowering blood sugar level.

Animal models used in this study were male white rats (*Rattus norvegicus*) accounted for 25 rat and it have 6 weeks. The next Stage is divided into 5 groups : group I (negative control) were given 2 ml physiological saline, group II (positive control) were given 2 ml physiological saline, group III was given kersen fruit extract 100 mg/kg, group IV were given kersen fruit extract 200 mg/kg, and group V were given kersen fruit extract 400 mg/kg. Diabetes mellitus on groups 2-5 induced by *streptozotocin*. Examination of white rats in blood sugar levels are based on sugar levels of pre-experimental, days 14 and days 28. Blood sugar values obtained before treatment and after treatment were analyzed using *Repeated Analysis of Variance (Repatet ANOVA)*. After that, rats killed and necropsy for pancreatic histopathological picture seen with *Gomori's Staining Hematoxylin Phloxine Chromium Stain for Cytoplasmic Granules*.

The results showed levels of glucose in the blood of -experimental, days 14 and days 28 in units of mg/dl, Group I (133±40,07, 164±18,61, 105±10,02), group II (136±63,54, 362±214,04, 431±45,57), group III (133±53,36, 513±102,38, 109±37,23), group IV (100±54,62, 376±111,75, 153±75,04), and group V (83±7,81, 225±67,68, 169±110,53). Based on statistical analysis is known that group III showed blood sugar levels a meaningful at days 28, so that a dose of 100 mg/kg could be potentially cause lowering blood sugar effect is the best. Histopathologic examination showed percentage of cells being vacuolated on groups I-V was 8,09%, 75,76%, 63,34%, 61,30%, 60,62%. Kersen fruit extract can reduce the number of pancreatic  $\beta$  cells that had vacuolated on histopathologic examination.

**Key words:** *Rattus norvegicus*, diabetes mellitus, kersen fruit, blood sugar and pancreatic  $\beta$  cells.