

**Aplikasi Topikal Ekstrak Etanol Daun Sirsak (*Annona muricata* L.)
Pada Luka Tikus Hiperglikemia Setelah Diberi
Pakan Lemak Tinggi**

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INTISARI

Luka adalah terputusnya kesinambungan suatu jaringan. Luka dalam kondisi hiperglikemia diketahui memiliki waktu penyembuhan lebih lama. Salah satu terapi yang dapat dilakukan yaitu pemberian obat berbahan alami dengan menggunakan sediaan topikal ekstrak etanol daun sirsak. Penelitian ini bertujuan untuk mengetahui efektivitas aplikasi topikal ekstrak etanol daun sirsak dalam proses kesembuhan luka eksisi pada tikus hiperglikemia setelah diberi pakan lemak tinggi berdasarkan pemeriksaan kadar glukosa, lemak darah, gambaran histopatologi luka dan jumlah leukosit jaringan. Penelitian ini menggunakan 16 ekor tikus jantan strain *sprague dawley* umur 3 bulan dengan berat 150-200 gram. Tikus dibagi menjadi 4 kelompok (1, 2, 3, 4). Seluruh tikus diberi pakan lemak tinggi selama 8 minggu, kemudian dilakukan penimbangan berat badan dan pengambilan darah untuk analisis kadar glukosa darah dan lemak darah (kolesterol dan trigliserida). Kelompok 1 dan 2 kemudian diinjeksi buffer sitrat, sedangkan kelompok 3 dan 4 diinjeksi streptozotocin (30 mg/kg) secara intraperitoneal. Tiga hari pascainjeksi dilakukan pemeriksaan glukosa darah. Pembuatan luka eksisi dilakukan pada seluruh tikus dengan menggunakan *biopsy punch* (8 mm) pada punggung kanan dan kiri, kemudian diolesi salep. Kelompok 1 dan 3 diberi salep basis, sedangkan kelompok 2 dan 4 diberi salep ekstrak etanol daun sirsak 20% selama 7 hari. Pada hari ke-7 dilakukan pengambilan darah untuk analisis glukosa, lemak darah dan total leukosit serta pengambilan jaringan kulit untuk analisis histopatologi (Hematoxylin-Eosin) dan menghitung jumlah leukosit di jaringan. Hasil pengamatan glukosa, lemak darah, total leukosit darah dan jumlah leukosit jaringan setelah hari ke-7 dianalisis secara statistik menggunakan uji *Two Way ANOVA* dan gambaran histopatologi dianalisis secara deskriptif. Hasil penelitian menunjukkan kadar glukosa, lemak darah dan leukosit jaringan dipengaruhi oleh pakan lemak tinggi dan streptozotocin ($P < 0.05$), sedangkan total leukosit dan leukosit jaringan dipengaruhi oleh salep ($P < 0.05$). Sehingga dapat disimpulkan bahwa pemberian pakan lemak tinggi dan streptozotocin dapat mempengaruhi berat badan, kadar glukosa, lemak dalam darah dan salep EEDS 20% berpengaruh terhadap kesembuhan luka tikus hiperglikemia, serta gambaran histopatologi luka.

Kata kunci: daun sirsak (*Annona muricata* L.), luka, hiperglikemia, streptozotocin, lemak tinggi.

**Topical Application Of Soursop Leaf (*Annona muricata* L.)
Ethanol Extract In Hyperglycemic Rat Wounds
After Being Given A High Fat Diet**

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ABSTRACT

A wound is a break in the continuity of a tissue. Wounds in hyperglycemic conditions are known to have a longer healing time. One of the therapies that can be done is the administration of drugs made from natural ingredients using topical preparations of soursop leaf ethanol extract. This study aims to determine the effectiveness of the topical application of soursop leaf ethanol extract in the healing process of excision wounds in hyperglycemic rats after being fed a high fat diet based on examination of glucose levels, blood lipids, histopathological features of the wound and the number of tissue leukocytes. This study used 16 male *sprague dawley* rats aged 3 months with a weight of 150-200 grams. Rats were divided into 4 groups (1, 2, 3, 4). All rats were fed a high fat diet for 8 weeks, then weighed and took blood for analysis of blood glucose and blood fat (cholesterol and triglyceride) levels. Groups 1 and 2 were then injected with citrate buffer, while groups 3 and 4 were injected with streptozotocin (30 mg/kg) intraperitoneal. 3 days after the injection, blood glucose was checked. Excision wounds were made on all rats using a biopsy punch (8 mm) on the right and left backs, then smeared with ointment. Groups 1 and 3 were given base ointment, while groups 2 and 4 were given 20% soursop leaf ethanol extract ointment for 7 days. On the 7th day, blood was drawn for analysis of glucose, blood fat and total leukocytes and skin tissue was taken for histopathological analysis (Hematoxylin-Eosin) and counted the number of leukocytes in the tissue. The results of observations of glucose, blood lipids, total blood leukocytes and the number of tissue leukocytes after the 7th day were analyzed using Two Way ANOVA and histopathological descriptions were analyzed descriptively. The results showed that glucose, blood fat and tissue leukocyte levels were affected by high fat diet and streptozotocin ($P < 0.05$), while total leukocytes and tissue leukocytes were affected by ointment ($P < 0.05$). So it can be concluded that the feeding of high fat and streptozotocin can affect body weight, glucose levels, blood fat and 20% EEDS ointment affect wound healing in hyperglycemic rats, as well as the histopathological of the wound.

Keywords: soursop leaf (*Annona muricata* L.), wound, hyperglycemia, streptozotocin, high fat.