

**EFFECTIVENESS OF BITTER LEAF (*Vernonia amygdalina*) EXTRACT
APPLIED TOPICALLY TOWARDS COLLAGEN DENSITY ON
INCISION WOUND HEALING IN RATS (*Rattus norvegicus*)**

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ABSTRACT

The aim of this research was to determine the effectiveness of bitter leaf (*Vernonia amygdalina*) extract topically can accelerate the density of collagen on incision wound healing in rats (*Rattus norvegicus*). Twenty male rats were randomly divided into five groups, there were negative control (K-) treated with ointment base, positive control (K+) treated with povidone iodine 10% ointment, treated groups (P1, P2, P3) treated with bitter leaf extract ointment 16,8%; 28%; and 39,2%. Treatment had been given directly on the subcutan incision area topically twice a day for fourteen days. On the day fourteen of this research samples were dissected and taken to the skin organ preparation for histopathology test. The data of histopathological appearance were processed with *Kruskal-Wallis* using SPSS 20. The result showed is $p = 0,077$ that is no significantly different ($p > 0,05$) between treatment. Based on the result the average P1 has highest density of collagen than the others treatment. The compounds of flavonoid, saponin, and alkaloid can increase the density of collagen in incision wound healing. Bitter leaf also has cytotoxic activity that has been attributed to the sesquiterpene lactones in the leaves. These properties are important against microorganism, but could be harmful to the healthy tissue. This research concluded that bitter leaf (*Vernonia amygdalina*) can not accelerate density of collagen on incision wound healing in rats.

Keywords : bitter leaf, wound healing, collagen density