



دانشگاه زابل

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Graduate Studies Management

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**Assessment of the effect of *Lawsonia inermis* and *Caster* extract on  
wound healing in rat**

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## **Abstract:**

Wounds, as one of the common challenges in medicine and veterinary science, require effective and low-cost treatment methods. In this context, medicinal plants have emerged as a suitable alternative to chemical treatments due to their anti-inflammatory, antioxidant, and regenerative properties. This study aimed to evaluate the effects of herbal compounds from Henna (*Lawsonia inermis*) and Castor oil (*Ricinus communis*) on the wound healing process.

Standardized 5 mm wounds were created on rats, and four treatment groups were studied: Group 1 (Henna), Group 2 (Castor oil), Group 3 (Henna and Castor oil combination), and Group 4 (Eucerin as the positive control group). The wound area was measured on days 5, 10, and 14, and the percentage of improvement was calculated. Additionally, histopathological indices, including epidermal formation, bleeding and edema, angiogenesis, production of fresh and mature collagen, and fibroblast and hair follicle development, were evaluated.

The results demonstrated that the combination of Henna and Castor oil significantly reduced the wound area and accelerated healing compared to other groups. By day 14, this combination led to complete tissue regeneration and improvement in histopathological indices. Positive effects of Henna and Castor oil individually on wound healing were also observed, but their combination showed the most substantial impact.

This study highlights that herbal compounds can be used as an effective, safe, and natural method for wound healing. Further research in human models and clinical settings is recommended to fully explore the application of these compounds in skin wound treatments.

**Keywords:** Wound, Henna, Castor oil, Healing