Activation of rabbit’s fibroblast to acceleration of wound healing by St. John’s Wort extract (Hypiran®)

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This study was carried out for evaluation of Hypericum perforatum extract (Hypiran®) on open wound healing in rabbits. 40 white – German rabbits were selected from both sexes in mean weight of 2850 grams (2750 - 3000 grams rang). The rabbits were divided into 4 same size groups, (No. 1 to 3 test groups as well as No. 4 control). Full-thickness skin wounds (2.5 in2.5 cm) were created on the dorsal aspect of skin in animals. In test groups (groups 1 to 3) wounds were treated by cream standardized with 0.75%, 1.5% and 3% Hypiran® respectively in comparison to the corresponding vehicle (control or group 4) and a bandage hold in place with a surgifix and re-bandaged for 35 days everyday. Wounds were photographed and biopsied every week (five times). All photographs were analyzed by Scion Image software and total wound surface, granulation tissue and re-epithelialized area were calculated. Specimens of normal skin and final scar tissue of all of wounds were assayed for hydroxy proline content. Sequential wound biopsies were evaluated histopathologically for fibrin, collagen, crimp, myofibroblast, leukocytes and tissue damage status. Measured wound areas were analyzed, using ANOVA test. Qualitative evaluation of histopathological values was shown a better condition in test groups. Findings obtained in the present study indicated that Hypericum perforatum extract exhibited a wound-healing activity mainly due to the increase in the stimulation of fibroblast collagen production, the activation of fibroblast cells and regulation of these cells which plays a role in wound repair by closing damaged area. But suggests that to use higher concentrations of Hypericum perforatum extract (Hypiran®) to find better results in next experiments.

Keywords: Hypericum perforatum, Hypiran®, wound healing, rabbit, fibroblast, collagen

Acaricidal effects of extract and oils of Cedrus against Cnemidocoptes gallinae comparing with a chemical drug

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Mites are one of important parasitic agents of avian, among them is genus Cnemidocoptes. It belong to family sarcoptidae which is contain three species such as Cnemidocoptes mutanc, C pilae and C.gallinae, which is a burrowing mite that can cause feather loss. In this field trial extract and essential oil of Cedrus compared with a chemical acaricides called Lambdasi halothrin (an organophosphorus compound). For this purpose 12 local hens which was naturally infested with C.gallinae were collected and randomly assigned to four treatments. Each treatment contained of 3 local hens. Treatment 1 was treated with normal saline as negative control and 2 and 3 treated with extract and oil of cedrus, respectively. Group 4 was treated with lambdasi halothrin as well. Obtained results showed that in groups treated with cedrus oil and lambdasi halothrin 75% and 95% gaining in health were obtained, respectively. And Mite scrapings after topical application of cedrus oil caused complete recovery after 10 days in severe infestation with re growth of feather on days 14 post treatment. According to above mentioned results cedrus oil may be considered as potential candidates for biocontrol of Cnemidocoptes gallinae in the field.

Keywords: Cnemidocoptes, extract and essential oil, Cedrus, Lambdasi halothrin, biocontrol