**Effect of Hydro-Alcoholic Foliar Extract of Aroeira (*Schinus terebinthifolius* RADDI) In Rats Skin Wound Healing**

**Abstract**

*Schinus terebinthifolius* Raddi (Anacardiaceae), popularly known as Brazilian pepper, is an evergreen, pioneer and indigenous plant from Brazil, and it is used as food condiment. Stem bark is used to fight inflammations of various origins, especially those of the female genital system, since they have, among others, anti-inflammatory and healing properties. The objective of the present work was to observe the effect of Aroeira hydro-alcoholic foliar extract in open wounds in the dorso-costal region of rats. Aroeira leaves were collected from Bach Site, in Ibiúna, SP, Brazil, and transported to the Uninove laboratory in Styrofoam boxes for drying, grinding and extraction. 10 g of leaf powder were extracted with 70% of ethanol and gave equivalent of 39.85mg of SAB as proteins and, equivalent of 11.25mg of chlorogenic acid as phenols. 10% of the extract was mixed in gel. After approval by the Ethics Committee, 24 Wistar rats, male, adult (weighting about 200-250g) were divided into three groups and in all animals one skin fragment was removed, with four centimeters in diameter and treated. The animals of the first group were treated with aroeira gel, those of the second group with gel-10% of ethanol (70%), and those of the third group with Fibrinase (commercial), this group being the positive control, on further days. The evaluation of the wound was done macroscopically in the predetermined periods (0, 5, 7, 14 and 21 days). Macroscopic analysis of the wound was done macroscopically in the predetermined periods (0, 5, 7, 14 and 21 days). Macroscopic analysis of the evolution of the lesion aspect and measurement of wound was performed by digital planimetry. Partial results indicated a better healing process in the wounds areas treated using gel-Aroeira when compared to gel-alcohol and fibrinase control. It is possible to conclude that hydroalcoholiccaroeea gel is effective in the healing of wounds in the skin of rats and can be used as herbal medicine.

**Keywords:** Aroeira Leaves; Hydroalcoholic Extract; Healing of Wounds

**Introduction**

*Schinus terebinthifolius*, native to various plant formations in the northeast, central-west, southeast and south of Brazil, is known by different popular names, such as aroeira, aroeiramansa, aroeira-vermelha, aroeira-precoce, aroeira-pimenteira, aroeira- sertão, cambuí, coração-de-bugre e fruto-de-sabia [1]. Our interest in the species is due to its secondary metabolism that produces several active compounds among others.
fibrinase. Daily application was performed over the wound, 4cm² of total area in dorsal region of each animal. The wound evaluation was made macroscopically in time of 0, 5, 7, 14 and 21 days, and skin healing retraction measures evaluated by digital planimetry. Statistical analysis was performed using Assistat-2012 program (Anova, T student test, Turkey).

Results and Discussion

The extract from aroeira leaves presented equivalent of 39.85mg of SAB (Soro albumin bovin) as proteins and, equivalent of 11.25mg of chlorogenic acid as phenols. In HPLC was determined presence of chlorogenic acid and quercetin. In animals, after 21 days in the group treated with gel+extract was observed the wound healed about 82.61% compared to control group, while with fibrinase corresponded to 59.57% compared to control group (Figure 1). Fibrinase is the positive control, that is, it has proven healing action, but when compared to gel + extract from aroeira leaves the healing was 23.04% more effective with the gel. The polyphenols can assist in the healing because they can form a thin layer and protect against external agents that may damage the tissue [2].

Figure 1: Graphic showing time of wound healing of rats treated with Aroeira leaves-gel, gel-ethanol and fibrinase. Percentage of healing wound included on same graphic.

Conclusion

It is possible to conclude that gel with Aroeira hydro-alcoholic extract is effective in rats skin healing.

Acknowledgement

Financially Supported by CNPq (Process number: 474681/2013)

References