

## CLINICAL FIELD STUDY

# Clinical Efficacy of a Polyherbal Aerosol Preparation in Wounds Management in Animals

**Dr. Dilip Sarma**

*B.V.Sc. & A.H.*

*Veterinary Clinician, 9<sup>th</sup> Mile, Guwahati, Assam*

### Introduction

In India evidence of using herbal preparation in treating various ailments both in human and animals were found in many ancient writings and books of ayurveda. A lot of herbal preparations are still used by many communities in India as local application in cuts, wounds and other skin ailments. Among a variety of plants / plant extracts used in wound healing and skin ailment, the clinical efficacy of *Ocimum sanctum*, *Eucalyptus globulus*, *Cedrus deodara*, *Cinnamomum tamala*, *Azadirachta indica*, *Pongamia pinnata*, *Cymbopogon citratus* and *Curcuma longa* were already been experimentally validated.

Wound healing is a dynamic interactive process that involves a sequence of molecular and cellular events. Recent advances in cellular and molecular biology have greatly expanded our understanding of the biological process involved in wound repair and tissue regeneration. From plasma extravasation, with coagulation and platelet aggregation, to reepithelialization and remodeling of injured tissue, the organism acts by trying to restore functionality tissue <sup>(1)</sup>. The present study was intended to evaluate the clinical efficacy of a aerosol polyherbal formulation (Aurospray\*) in various skin ailments in animals.

### Description of Constituents:

*Ocimum sanctum*: Commonly known as Tulasi has been cultivated across India. Different parts of the plants has been mentioned for its medicinal use in Ayurveda. Exhaustive studies had been carried out by number of workers for wound healing activity of *Ocimum sanctum*. It increased the tensile strength of wound and promoted epithilization as well as collagen was formed in bundles between the cells. Application of *Ocimum sanctum* oil in jelly form accelerated wound healing and TNF production, later it was observed that flavonoids present in the oil scavenge the free radicles and help in wound healing.

### **AURINKO HEALTHCARE PVT LTD.**

Head Office: A-1563, Lower Ground Floor, Gate No. 5, Green Field Colony, Faridabad-121010, Haryana India  
.Tel: +91-129-3230213; Fax: +91-129-2510237

*Eucalyptus globulus*: Well known tree cultivated across waste lands in India, which yields essential oil. The main constituent of this oil is monoterpenes and this oil was subjected to evaluate against *Staphylococcus aureus*, *Escherichia coli* and *Candida albicans*. The oil was found to possess highest growth inhibition for all the microorganisms tested. Eucalyptus oil was effective against all the 22 bacterial strains. Eucalyptus oil was also found effective against eleven fungi.

*Cedrus deodara*: In Ayurveda referred as devadaru, has been recommended to use in deep seated wounds and chronic wounds. Cedar wood oil had been studied for antifungal activity, it showed activity against *Candida albicans* and *Aspergillus fumigatus*. Oil had been reported to possess anti-inflammatory and anti-microbial activities. The plant had also shown wound healing properties and is particularly useful in infective wounds.

*Cinnamomum tamala*: Cinnamon tamal oil had shown very strong anti microbial activity against *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus vulgaris*, *Pseudomonas spp.* *Staphylococcus aureus* and *Streptococcus pneumoniae* isolated from clinical specimens. *Azadirachta indica*: It has been recommended in Ayurveda to use this in skin disorders which includes all types of wounds. Wound healing activity of Neem oil was tested against framycetin sulfate cream, in the incision wound model and there was a significant increase in tensile strength of the 10 d old wound due to treatment with test formulation.

*Pongamia pinnata*: It has been recommended in Ayurveda to use this in skin disorders as it helps to heal wounds and also reduces skin irritation. *Pongamia* oil was found to have a potent activity against *Aspergillus niger*, *A. fumigatus*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*

*Cymbopogon citratus*: The essential oil of Lemon grass is used as carminative, depressant, analgesic, antipyretic, antibacterial, and antifungal agent. Laboratory studies have shown cytoprotective, antioxidant, and anti-inflammatory properties *in vitro*, as well as antifungal properties. Lemon grass contains 65-85% citral and active ingredients such as myrcene, an antibacterial and pain reliever; citronella; citronellol; and geraniol. Lemon grass oil has been tested for its repellency against stable flies, which bite domestic animals.

## **AURINKO HEALTHCARE PVT LTD.**

Head Office: A-1563, Lower Ground Floor, Gate No. 5, Green Field Colony, Faridabad-121010, Haryana India  
.Tel: +91-129-3230213; Fax: +91-129-2510237

*Curcuma longa*: Curcumin has been demonstrated to be safe in six human trials and has demonstrated anti-inflammatory activity. Anti-inflammatory activity may be because of inhibition of a number of different molecules that play a role in inflammation. *Curcuma longa* has been attributed a number of medicinal properties in the traditional system of medicine and its internal as well local use has been advocated. The major claims were for use as antiseptic, cure for poisoning, eliminating body waste products, for dyspepsia, respiratory disorders and cure for a number of skin diseases including promotion of wound healing. Recent studies have confirmed some of the older claims and brought out several new useful properties. Curcumin, curcuminoids and essential oils are the major active constituents. The main activities have been found to be anti-inflammatory, hepatoprotective, antimicrobial, wound healing, anticancer, antitumor and antiviral. Discovery of antiviral properties in curcumin, particularly against HIV, is interesting and needs proper evaluation. The review highlights some of the newer researches which may explain the multifaceted activity of this natural product. Different extracts of turmeric and also curcumin have been tried clinically in several diseased conditions with gratifying results. *Curcuma longa* being responsible for its biological actions mainly anti protozoal, nematocidal activity, anti bacterial activity against *Staphylococcus albus*, *S. aureus* and *Bacillus typhosus* inhibiting the growth of *S. albus* and *S. aureus* in concentrations up to 1 to 500.

### **Material and Method:**

The present investigation was carried out on clinical cases attended in 9<sup>th</sup> mile and in and around Khanapara (Assam). The aerosol polyherbal formulation was trialed different types of wounds like skin lacerations, abscesses, foot rot condition, gangrenous and maggot infested wound in cattle and canines. The aerosol polyherbal formulation (Aerospray) contains extracts of *Ocimum sanctum*, *Eucalyptus globulus*, *Cedrus deodara*, *Cinnamomum tamala*, *Azadirachta indica*, *Pongamia pinnata*, *Cymbopogon citratus* and *Curcuma longa*. The aerosol polyherbal formulation was sprayed twice daily, *ad libitum* on the wound till the wound was completely healed.

### **AURINKO HEALTHCARE PVT LTD.**

Head Office: A-1563, Lower Ground Floor, Gate No. 5, Green Field Colony, Faridabad-121010, Haryana India  
.Tel: +91-129-3230213; Fax: +91-129-2510237

## Result and Discussion

The duration of application and clinical observation of the healing process of wounds were summarized in Table no. 1 with representative photos given in Fig. 1 and 2 .

**Table 1**

Species	Wound Type	Number of cases	Average Duration in wound healing	Remark
Cattle	Cuts /Laceration	7	4-5 days	Very quick healing
	Maggoted wound	6	6-7 days	Very good fly repellent property. Maggots used to come out of the wound after application.
	Septic wound	9	5-6 days	Application of the spray after regular dressing gives quick result.
	Foot rot	5	6-7 days	Found to be effective in managing foot rot condition.
Canine	Cuts/Laceration	5	4-5 days	Quick healing
	Maggoted wound	5	6-7 days	Very good fly repellent & maggotocidal property.
	Septic wound	7	5-6 days	Application after regular dressing gives faster healing.

## **AURINKO HEALTHCARE PVT LTD.**

Head Office: A-1563, Lower Ground Floor, Gate No. 5, Green Field Colony, Faridabad-121010, Haryana India  
.Tel: +91-129-3230213; Fax: +91-129-2510237



**Fig. 1. Maggotted wound in hoof of a cattle**    **Fig. 2. Wound is healing up after application of Aurospray**

### **Conclusion**

Based on the results obtained from this field study, it is evident that the aerosol polyherbal formulation (Aurospray) consisting *Ocimum sanctum*, *Eucalyptus globulus*, *Cedrus deodara*, *Cinnamomum tamala*, *Azadirachta indica*, *Pongamia pinnata*, *Cymbopogon citratus* and *Curcuma longa* has substantial fly repellent, maggoticidal, and wound healing property. It can be said that Aurospray is safe and highly effective on all kinds of skin wounds including lacerated wound, aseptic and septic wounds as well as maggot-infested wounds in animals.

### **Acknowledgement**

\*The free sample of the aerosol polyherbal formulation (**Aurospray**) supplied by **Aurinko Healthcare Pvt Ltd** for conducting this study is thankfully acknowledged.

### **AURINKO HEALTHCARE PVT LTD.**

Head Office: A-1563, Lower Ground Floor, Gate No. 5, Green Field Colony, Faridabad-121010, Haryana India  
.Tel: +91-129-3230213; Fax: +91-129-2510237