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Original Research Article

Wound healing plants of renapur tehsil, dist. Latur, Maharashtra

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Abstract

Plant material is rich source and they used in different systems of medicines viz. Ayurveda, Unani, Siddha and Homeopathy. Charak-Samhita and Sushrut –Samhita includes more than 700 plants as drug. These are 1700 herbs that are mentioned in Materia Medica having the medicinal properties. A study of indigenous medicinal plants with special reference to wound healing properties has widw scope of research and searching various chemical ingredient of therapeutic interest wound healing property by a large number of plants have been reported hear having antimicrobial activity. A survey in Renapur tehsil of Latur district in the Marathwada region of Maharashtra on medicinal plants for their biological activities has been conducted and shown in the chemical ingradients. 18 plants has been reported as wound healer and their uses has been mentioned by traditional herbalist. Wound healing is an important process which is basis of various surgical manipulations. The active ingreadients having antiseptic,antibccterial, biostimulator and antinflammatory properties are included in the present paper.

Key Words: Wound healing plants, Renapur tehsil.

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INTRODUCTION

There are about 1700 herbs that are having medicinal properties mentioned in Meteria Medica. A study of indigenous medicinal plants with special reference to wound healing properties has been wide scope of research and searching various chemical ingredient of therapeutic interest wound healing property by a large no of plants have been reported hear having antimicrobial activity.Chopra (1982), Agarwal and Ghosh (1982), Desai (1975), Atal and Kapoor (1982), Ugemuge (1988), Devi (1990), Nadkarni (1990), Pathak (2003) and Bramhavarchas (2004). The present paper deals with 20 species used by rurals of Renapur tehsil as wound healing. Of which 02 species are experimentally verified. The plants have been arranged alphabetically under their botanical names, family, part used, active principal with vernacular names in table 1.µ

MATERIAL AND METHODS

Azariracta indica and *Annona squamosal* were collected from a village in Renapur tehsil of Latur district during the month of July- October 2015.The collected plant material washed, cleaned, and air dried and finely powdered.120 gms of each powdered was extracted in water, filtered and centrifugated at 3000rpm and sterilized at 121^0c for 20 minutes. The zone of inhibition resulted at full form in given concentration. The extract of each plant was recorded and compared with 10 µg/ml of standard antibiotic Gentamicin and Penicillin. Yhe test inocula was adjusted between $1x10^6$ cell/ml. The test organisms namely E.coli and Staphylococcus aureus were grown in nutrient broth. Then they were cultured on nutrient agar. The plates were inoculated with overnight culture. With the help of sterile cork borer, wells were cutout in petriplates. Test suspension and plant extract solution aseptically added into petriplate. To facilitate diffusion of test solution, the plates were kept in cold for an hour later, the plates were incubated at 32^oC in incubator. The inhibition was recorded by measuring the diameter of

inhibition zone after 24 hours. The gentamicin (10 µg) and pencillin (10 µg) were used as standards for comparision of antibacterial activities. The results of present investigation are given in table 1,2,3 and 4.

RESULTS

The selection of plant part is based on a preliminary examination of aqueous extract of each plant material against test organism.The extract prepared from *Azardiracta indica* exhibited highest antibacterial activity. Diffrential extracts will be prepared in various solvent with the help of soxhelt apparatus. This investigation will be extended with other test organisms isolatedfrom wound and burn cases. In order to find out chemical nature of active ingradients on particular chemical tests will be performed.

Table 1: A list of medicinal plants with botanical names, habit, family,common name, parts used and active principles

Sr .No.	Name of the Plant	Habit	Family	Common names	Parts used	Active principle
1	*Acasia nilotica*	T	Mimosae	Babul	S,L	Tannin
2	*Acalypha indica*	H	Euphorbiaceae	Khokali	L	Alkaioid
3	*Adathoda zeylanica*	H	Acanthaceae	Adulsa	L	Alk,Gd
4	*Annona squamosa*	T	Annonaceae	Sitaphal	Rt,L,Fr,S	Alk,E.oil
5	*Argemone maxicana*	H	Papavraceae	Katuparni	Rtandlatex	Alk,E.oil
6	*Azardiracta indica*	T	Meliaceae	Neem	L andOil	Nimbin,Nimbidin
7	*Bambusa arudinacae*	T	Poaceae	Vansha lochan	St,shoot	Gd
8	*Cannabis sativa*	H	Cannabinaceae	Bhang	L	Alk,Resin
9	*Centella asiatica*	H	Apiaceae	Mandukparni	WP,L,S	Alk,Gd,Resin
10	*Cynodon dactylon*	H	Poaceae	Durva	Wp,Rt	Gd,Alk
11	*Eclipta prostrata*	H	Asteraceae	Bhringaraj	Wp,L	Gd,Alk,Resin
12	*Euphorbia hirata*	H	Euphorbiaceae	Dudhi	Rt	Gd
13	*Jasminum grandiflorum*	S	Oleaceae	Chameli	WP,L,Fl	Alk,Eugenol
14	*Madhuka indica*	T	Sapotaceae	Moha	WP	Alk
15	*Sesasum indicum*	H	Pedaliaceae	Teel	L	Mucilage
16	*Sphaeranthus indicus*	H	Compositae	Gorakhmundi	L	Gd
17	*Tarminalia arjuna*	T	Combretaceae	Kahu	Bk	Alk
18	*Withania somonifera*	S	Solanaceae	Ashwagandha	Wp	Alk

(Abbreviations: T-tree, S-shrub, H-herb, L-leaves, S-seed, Bk-bark, Wp-whole plant, Fr-fruit)

Table 2: Chemical Constituents in Plants

Sr. No.	Name of Chemical constitutes in plants	Total plants (no)
1	Alkaloids	12
2	Glucosides	6
3	Tannins	1
4	Resins	3
5	Eugenol	1
6	Micilage	1
7	Essential oil	2

W**ound healing plants:** *Annona squamosa* Linn-Sitaphal: The leaves of the plants contains high amount of tannins and vitamin-c and possesses anti-inflammatory astringent and insecticidal properties. It enhances level of hydroxyproline, hexosamine, zinc, copper, collagen and elastin in wound which helps in wound healing. It is used as 5% (w/w) ointment of alcoholic extract of dried leaves in white jelly. The powder of seeds is used to treat maggoty wound.

***Azardiracta indica* A.Juss-Neem:** Neem is an important medicinal plant found in Indian subcontinent. Its leaves, bark and fruits are used for wound healing. It has antiseptic, astringent, larvicidal and a little anti-inflammatory properties. The seeds and leaves also have antimicrobial effect and contain nimbidine, nimbin and nimbinine. It can be used as ointment of leaves, oil of seeds or powder from its bark. Decoction of the leaves can be used for washing of wounds.

Table 3: Test organisms zone of inhibition

Extracts	Test Organisms Zone of inhibition in diameters (mm)		
	E.coli	*S.aureus*	*B.subtilis*
Control	0	0	0
Annona squamosa	6	13	9
Azardiracta indica	7	15	11
Penicillin	0	16	14
Gentamicin	18	20	22
Penicillin+ Annona squamosa	5	18	16
Penicillin+ Azardiracta indica	5	18	16
Gentamicin+ Annona squamosa	19	20	22
Gentamicin+ Azardiracta indica	19	21	23

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