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Ethnomedicinal uses of some wound healing plants of Bargarh district in Western Odisha, India

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Abstract

Since time immemorial plants have been used for medicinal purposes long before prehistoric period. Plants provide basically food, shelter, and medicine. The present paper highlights on the outcome of ethnomedicinal survey conducted during 2017-19 in different forest localities of Bargarh district. During the survey the local forest people and traditional healers were contacted to know about the medicinal uses of the collected plant species. Although several plants were collected during the survey some of them are found be used especially in wound healing. The present paper reveals 45 plant species belonging to 42 genera and 32 families. Out of 45 plant species 23 are trees, 12 herbs, 6 climbers and 4 shrubs.

Keywords: Ethnomedicine, wound healing, Bargarh district, western Odisha

Introduction

Since ancient time ethnobotanical use of plants has been known to the human race. The use of medicine and medicinal plants as therapeutic agents for the maintenance of good health has been widely observed and accepted in most of the developing countries. India is gifted with rich and diverse heritage of cultural traditions and these traditions are associated with the use of wild plants as medicinal herbs. India is well known as an emporium of medicinal plants and is one of the richest floristic regions of the world. Among the entire flora, 35,000-70,000 species are used for medicinal purposes. In recent times, traditional knowledge system of medicine has become a topic of global concern. Human race has been using plant and plant products in different ways according to their requirements, particularly as food, fuel and medicine ^[1].

Most of the drugs are derived from the plant origin. Several drug plants, minerals and animals origin are described in the Ayurveda for their wound healing properties. Wound is defined as an injury to living tissue caused by a cut, blow, or other impact, typically one in which the skin is cut or broken. Various wound healing stages are haemostasis, inflammation, proliferation and maturation. Wound healing process may be natural or unnatural way by the application of some drugs. Natural process of wound healing takes a longer period to get healed and hence the wound gets exposed to bacterial microorganisms. To avoid infection it is necessary to provide such an environment that will accelerate the wound healing process. Nature has provided /endowed a number of plants and nutrient with properties that help in wound healing ^[2].

The presents study was conducted in different forest localites of Bargarh district. Among which some of them have been reported in curing injuries, cut wound, burm wound, old wound, bruises and leprotic wound by the local people of the district. The local traditional healers, *Vaidyas*, *Kabirajs* and herbal medicine practitioners are the important persons playing vital role in prescribing medicinal plant drugs for curing human as well as animal diseases and ailments. In true sense medicinal plants play an important role in healing due to presence of phyto-chemicals constituents and also treatment by medicinal plants is considered very safe as there is no or minimal side effects.

Use of medicinal plants to treat various diseases has been part of human culture since ancient times. Botanically derived plants play a major role in human society. Traditional medicine forms valuable resource for the development of new pharmaceuticals. This acquired knowledge about the plant is very essential to be used in the near future. In India and particularly in Odisha people living in remote and rural localities are still dependent on traditional medicines for treatment of various ailments.

Materials and Methods

The data discussed in this paper were collected by intensive survey during 2015-17 in different

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villages inhabited by the tribes. The local name of the plants and ethnomedicinal data were collected from local practitioners of herbal medicines, other traditional healers such as *Kabirajs* and *Vaidyas*, *Guniyans*, and tribal priests such as *Desaris*, *Deheris* and *Jhankars*. The ethnomedicinal information was cross-checked with different persons from different localities. The information gathered was also crossed-matched with some relevant scientific documents [3-16]. The plants were also identified with standard regional

flora [17-18]. The voucher specimens have been deposited in the herbarium of Departments of Botany of Panchayat College, Bargarh, Odisha, India.

Ethnomedicinal observations

The ethnomedicinal plants collected during the survey are arranged with their botanical name followed by family in parenthesis, locality and collection number, local name(s) and mode of administration as shown in the table 1.

Table 1: List of plants used as ethnomedicine

Botanical name, Family name	Locality collection no.	Local name	Mode of applications
<i>Acacia nilotica</i> (L.) Delile (Fabaceae)	Ganjaguda-305	Bamur	Leaf powder crushed with coconut oil is applied externally to cure wound due to syphilis.
<i>Allium sativum</i> L. (Amaryllidaceae)	Udepali-529	Lesun	Fresh juice of bulb is applied to remove maggots from the wounds to facilitate fast healing.
<i>Aloe vera</i> (L.) Burm. f. (Asphodelaceae)	Lether-530	Ghee-kuanri	Leaf pulp is applied to cure wound and burn wound.
<i>Alstonia scholaris</i> (L.) R. Br. (Apocynaceae)	Nrusinghnath-353	Chhatiana	Bark extract is applied to cure old wound.
<i>Annona squamosa</i> L. (Annonaceae)	Ambabhona-78	Badhel	Leaf paste is applied on wounds of cattle to remove maggots from the wounds to facilitate fast healing.
<i>Argyrea nervosa</i> (Burm. f.) Bhoj. (Gharbel) (Convolvulaceae)	Nrusinghnath-421	Bruddhadarak	Leaf powder is applied to heal wounds due to boils.
<i>Barleria prionitis</i> L. (Acanthaceae)	Nrusinghnath-468	Kanta-malti	Leaf paste is applied on the part to cure bruises and wound.
<i>Barringtonia acutangula</i> (L.) Gaertn. (Lecythidaceae)	Khandijharan- 311	Hinjal	Bark powder is applied over the wound.
<i>Biophytum sensitivum</i> (L.) DC. (Oxalidaceae)	Kharmunda-169	San-lajkuri	Leaf paste is applied externally to cure wound.
<i>Blumea lacera</i> (Burm. f.) DC. (Compositae)	Nrusinghnath-175	Bad-Poksungha	Leaf paste is applied on the affected part to cure wound.
<i>Borassus flabellifer</i> L. (Arecaceae)	Ambabhona-283	Tal	Cotton fibre like substances found in folded tender leaves is applied on freshly cut wound to stop bleeding forthwith and the wound heals up quickly.
<i>Carica papaya</i> L. (Caricaceae)	Beherapali-229	Amrutbhanda	Latex is applied to cure wound due to scabies and itches.
<i>Celastrus paniculatus</i> Willd. (Celastraceae)	Ramkhol-384	Ping, Phutkel	Seed oil is applied to cure wound.
<i>Cissampelos pareira</i> L. (Menispermaceae)	Ramkhol-733	Akan-bindi	Leaf powder is applied to heal wounds due to boils.
<i>Colocasia esculenta</i> (L.) Schott. (Araceae)	Khandijharan-642	Saru	Tuberous root paste is applied to check bleeding forthwith and heal up wound quickly.
<i>Combretum roxburghii</i> Spreng. (Combretaceae)	Nrusinghnath-490	Leler	Leaf is paste is mixed with a little <i>Ricinus communis</i> seed oil and applied to cure wound. Leaf is crushed and cooked in <i>Arachis hypogea</i> seed oil. The paste is applied externally to cure wound.
<i>Cordia macleodii</i> (Griff.) Hook. f. Thoms. (Boraginaceae)	Nrusinghnath-409	Panki	Leaf paste or powder is applied on wound or freshly cut wound to stop bleeding forthwith and heal up wound quickly. Leaf paste is also applied on leprotic wound.
<i>Cynodon dactylon</i> L. (Poaceae)	Barhaguda-98	Dubla	Leaf extract is applied over cut wound to stop bleeding.
<i>Datura metel</i> L. (Solanaceae)	Ainlapali-117	Dudura	Leaf paste is applied over the cut wound.
<i>Dioscorea bulbifera</i> L. (Dioscoreaceae)	Nrusinghnath-337	Pitalu	Fruit powder is applied on wounds.
<i>Ficus benghalensis</i> L. (Moraceae)	Ramkhol-250	Bar	Bark paste is used in wound and bruises. Bark powder is used externally to cure burn wound.
<i>Ficus racemosa</i> L. (Moraceae)	Ramkhol-249	Dumer	Bark powder is applied to cure wound.
<i>Ficus religiosa</i> L. (Moraceae)	Khandijharan-319	Pipal	Bark paste is used in wound and bruises.
<i>Grewia hirsuta</i> Vahl. (Malvaceae)	Ramkhol-725	Sunaragda	Root and <i>Colocasia esculenta</i> root are crushed together and applied on bruises.
<i>Haldinia cordifolia</i> (Roxb.) Ridsdale (Rubiaceae)	Ramkhol-722	Haland	Bark paste is applied on the affected part to cure bruises.
<i>Helicteres isora</i> L. (Malvaceae)	Nrusinghnath-184	Murmuri	Leaf paste is applied to cure cut wound.
<i>Hollarhena pubescens</i>	Kamgaon- 247	Kure	Leaf paste is applied over the affected part to cure old wound.

Wallich ex G.Don, (Apocynaceae)			
<i>Jatropha curcas</i> L (Euphorbiaceae)	Samardharha-438	Ramjada	Leaf powder is mixed with camphor and coconut oil and applied on the affected part to cure burn wound.
<i>Justicia adhatoda</i> L. (Acnathaceae)	Ramkhol-717	Basang	Leaf powder is applied over the wound and a leaf with cow ghee is warmed and bandaged over it for a fast healing.
<i>Lawsonia inermis</i> L. (Lythraceae)	Nrusinghnath-143	Benjati	Fresh leaf and rhizome of <i>Zingiber officinale</i> are crushed together and the paste is applied over the cut wound.
<i>Limonia acidissima</i> L. (Rutaceae)	Ainlapali-106	Kainth	Bark paste is applied to cure old wound.
<i>Litsea glutinosa</i> (Lour.) C.B. Rob. (Lauraceae)	Ramkhol-723	Paldhua	Bark paste is applied to cure bleeding wound.
<i>Mimusops elengi</i> L. (Sapotaceae)	Khandijharan-598	Baul	Bark decoction is useful in fowl smelling wound.
<i>Ocimum basilicum</i> L. (Lamiaceae)	Nrusinghnath-142	Kaladahana	Leaf paste is applied on the affected part to cure bruises.
<i>Prosopis cineraria</i> (L.) Druce (Fabaceae)	Sargibahal-340	Shani	Leaf decoction is useful in cut wound.
<i>Ricinus communis</i> L. (Euphorbiaceae)	Beherpali-231	Gada	Seed oil and turmeric powder are mixed together and applied to cure cut wound.
<i>Sida acuta</i> Burm.f. (Malvaceae)	Banjipali-244	Bajar-muli	Fresh leaf is placed and bandaged to cure wound.
<i>Spondias pinnata</i> (L.f.) Kurz (Anacardiaceae)	Kharmunda-778	Abhira	Ripe fruit paste is fried with cow's ghee and applied to cure wound.
<i>Tagetes erecta</i> L. (Compositae)	Barhaguda-263	Ganja	Leaf extract is applied on the affected part to cure cut wound.
<i>Tephrosia purpurea</i> (L.) Pers. (Fabaceae)	Barhaguda-792	Jhar-kulthia	A mixture of root powder and honey is applied to cure wound/ old wound.
<i>Terminalia tomentosa</i> Wight & Arn. (Combretaceae)	Khandijharan-313	Sahaj	Leaf paste is applied to cure wound.
<i>Terminalia arjuna</i> (Roxb. ex DC) Wight & Arn. (Combretaceae)	Khandijharan- 316	Ka	Bark paste is applied to remove the maggots from the wounds to facilitate fast healing.
<i>Tridax procumbens</i> L. (Compositae)	Ruhunia- 90	Bishalyakarni	Leaf extract is applied to stop bleeding forthwith.
<i>Ventilago madraspatana</i> Gaertn. (Rhamnaceae)	Ramkhol-521	Kenti	Root paste is applied to cure wound. Bark paste is applied to cure wound.
<i>Zizyphus mauritiana</i> L. (Rhamnaceae)	Ainapali-111	Buro	Bark of the plant, bark of <i>Azadirachta indica</i> and <i>Pongamia pinnata</i> are crushed together and the extract is used to wash the cut wound and bruises for a fast healing.

Results and Discussion

The present study noticed that 45 plant species belonging to 42 genera and 32 families are used to cure different type of wounds. It has been evaluated from the present study that maximum number tree species (23) followed by herbs (12 species), climbers (6 species) and shrubs (4 species) are observed during the study.

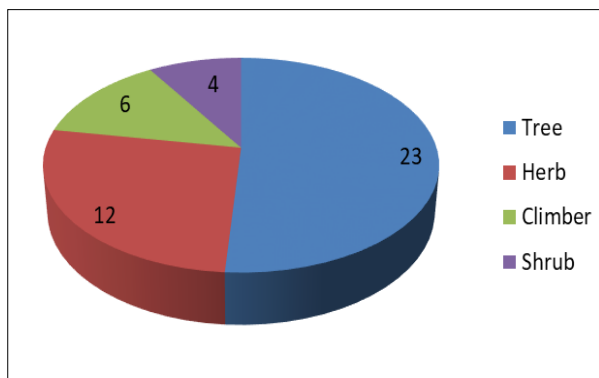


Fig 1: List different category of plants

The paper highlights 56 prescriptions out of 45 plant species and all the prescriptions are used externally. The plant parts used in maximum number are leaves (28) followed by bark (16), root (5), latex, fruit and seed (2 each) and bulb (1).

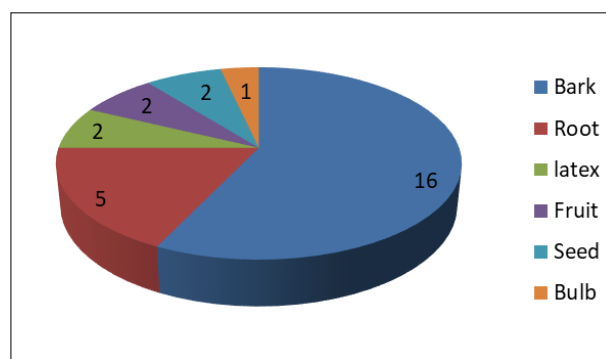


Fig 2: List of plant parts used in medicine

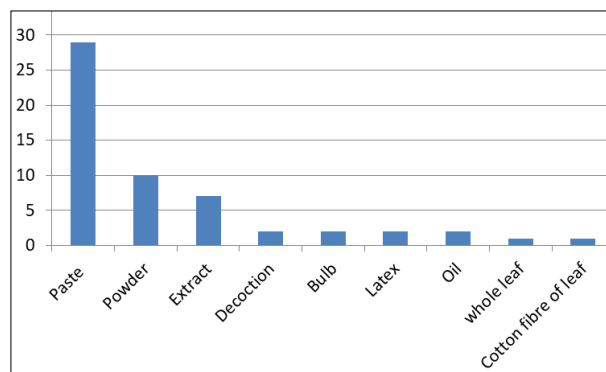


Fig 3: Mode of application of plant parts

Besides, the plant parts are used in the form of paste (29 times), followed by powder (10 times), extract (7 times), decoction, oil, latex and pulp (2 times each), whole leaf and cotton fibre of the leaf (1 time each). From the above study it has been observed that out of 56 prescriptions only in 49 cases the plant parts are used singly and 7 cases are used with other ingredients.

Conclusion

The use of medicinal plant species are gradually increasing by the rural habitants as well as urban people. The use of medicinal plants and knowledge accumulated by our forefathers are found to be become in danger due the habitat destruction and the main causes of habitat destruction is cleaning of habitat for agriculture, grazing of domestic animals, urbanization and industrialization. Presently there is an increase in the number of people suffering from various diseases and ailments and plant based medicines have been found to be useful in curing the diseases.

Uses of medicinal plants are time-tested and used by people worldwide without any side effects or little side effects and cost effective compare to other system of medicine. With the changing scenario, there is need to enhance and promote the conservation and cultivation of natural resources for medicinal plants.

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