

Ethnomedicinal Plants Used by the Tribal's in Cure of Wounds in Buldhana District (MS) INDIA

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Research Article

Abstract: Buldhana District of Maharashtra state (India) has a rich biodiversity of medicinal plant species. An ethnobotanical survey was carried out in Buldana district, Maharashtra during July, 2008 to March, 2010 for documentation of wound healing knowledge acquired by the tribal communities. The tribal communities possess rich knowledge about medicinal plants and its uses as they are far away from modern facilities. Therefore, we have done an exhaustive ethnobotanical survey in this area. A list of 72 wound healing plants species are recorded, which are in practice by traditional healers of tribal communities.

The traditional healers in this area use the wild as well as cultivated plants in the treatment of wounds. Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources and for the welfare of human being. The plants were identified with relevant information and are documented alphabetically with their botanical name, family, local name, parts used, mode of preparation and uses.

Keywords: Wound Healing, Traditional Medicinal Plants, Buldana District (M. S.)

Introduction:

India has a rich tradition of plant-based knowledge on healthcare. A large number of plants are equally used by tribals and folklore traditions in India for treatment of cuts, wounds, and burns. All traditional medicines have their roots in folk medicines and household remedies. WHO has estimated that 80% of the world's populations rely primarily on traditional medicine (WHO, 1978; Okerele, 1992).

There has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the world during the last few decades. Traditional medical knowledge of medicinal plants and their use by indigenous cultures are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. In India, it is reported that traditional healers use 2500 plant species and 100 species of plants serve as regular sources of medicine (Pei, 2001). Medicinal plants are the backbone of the traditional medicine; this means that, 3300 million people in the underdeveloped countries utilize medicinal plants on a regular basis (Dobriyal and Narayana, 1998).

In the developed countries 25 percent of the medical drugs are based on plants and their derivatives (Principe, 2005) and the use of medicinal plants is well known among the indigenous people in rural areas of many developing countries. Some of the therapeutic properties attributed to plants have proven to be erroneous, medicinal plant therapy is based on the empirical findings of hundreds and thousands of years (Gurib-Fakim, 2006).

Wound infection is one of the most common diseases in developing countries because of poor hygienic conditions (Senthil Kumar et al., 2006). Wounds are the physical injuries that result in an opening or breaking of the skin and appropriate method for healing of wounds is essential for the restoration of disrupted anatomical continuity and disturbed functional status of the skin (Meenakshi et al., 2006). In other words wound is a break in the epithelial integrity of the skin and may be accompanied by disruption of the structure and function of underlying normal tissue and may also result from a contusion, laceration or an abrasion (Enoch and John Leaper, 2005). Traditional forms of medicine practiced for centuries in Africa and Asia are being scientifically investigated for their potential in the treatment of wounds related disorders (Krishnan, 2006).

Preliminary survey demonstrated that wounds were one of the major problems among these tribals and they prepared herbal medicines with a number of plants to heal wounds. Although some ethnobotanical studies have been accomplished in Buldhana district among the tribal people by Korpenwar (2010); no systematic ethnotherapeutic studies have been undertaken to assess the traditional management of wounds. The present study was performed with the aim of producing an inventory of the plants used by traditional healers in Buldhana district to document the traditional therapies practiced for various wound and related injury conditions.

Materials and Methods:

Study Area: (Buldhana District)

Buldhana is the western most district of the Vidharbha, of the Maharashtra State. The name of town is derived from the corrupt form of Bhil-Thana i.e. the place of Bhils. The district is situated between 19°.51' and 21°.17' North latitudes and 75°.57' and 76°.49' East longitudes. It is bounded on the north by Nimar district of Madhya Pradesh, on east by the Akola and Amaravati districts, on the west by the Jalgaon and Aurangabad districts and on the south by the Jalna and Parbhani Districts.

Buldhana district has a variety of medicinal plants which are used by the tribals for their primary healthcare. In Buldhana district Bhil, Bhilala, Tadvi Bhil, Nihal, Andh, Pardhi and banjara tribals are natural retainers of traditional knowledge. Traditional knowledge is passed from generation to generation through oral folklore.

The field study was carried out from June 2008 to December 2010 and information on the use of medicinal plants was obtained through, field tours, interviews and informal conversations with traditional healers, knowledgeable persons or medicine men, Vaidoos, experienced and aged persons, local healers of the villages. They were consulted for recording local name; plant parts used, methods of drug preparation and recommended doses. Personal interviews and group discussions with local inhabitants revealed some very valuable and specific information about the plants.

The plants were collected from remote places in vegetative and blooming conditions, simultaneously, noting the vernacular names and all the relevant information disclosed by the local practitioners. The plants were brought to the laboratory and processed for herbarium specimen. Plants were identified using relevant scientific literature (Hooker 1872 – 1877; Cooke 1967 (Rpr.); Sharma *et al.* 1996; Naik 1998; Singh and Karthikeyan, 2000; Singh *et al.* 2001).

Subsequent visits were planned to photograph the plants in proper blooming period. Identified specimens were deposited in the herbarium of the Botany Department, Shri Shivaji Science and Arts College, Chikhli, Dist. Buldhana (M.S.).

Results:

The present study identified that traditional healers used 72 species of ethnomedicinal plants distributed in 66 genera belonging to 42 families to treat wounds and related injuries. The dicotyledons are represented by 67 species of 40 genera and 38 families while monocotyledons by 4 species of 4 genera and 3 families and Pteridophytes by single family with 1 species (Table-1.). Of which, *Acalypha indica*,

Anacardium occidentale, *Areca catechu*, *Calotropis gigantea*, *Cissampelos pareira*, *Costus speciosus*, *Euphorbia hirta*, *Ficus bengalensis*, *Madhuca longifolia*, *Morinda citrifolia*, *Pongamia pinnata*, and *Vitex negundo* are commonly used by the studied tribal people in the healing of wounds and medicinal properties of these plants have also been provided (Table-1).

Leaves were found to be the most frequently used plant parts accounting for 32 preparations followed by root (23), stem (14), whole plant parts (11), fruit (7), Oil and latex (3), and others such as flower and rhizome. Most of the ethnobotanical studies confirmed that leaves are the major portion of the plant used for the treatment of diseases. The reason why leaves are used mostly is that they are easily accessible and are active in photosynthesis and production of metabolites (Ghorbani, 2005). With regard to the families with wound healing plants, Fabaceae represented by highest number of species (7) followed by Asteraceae and Euphorbiaceae (6), Mimosaceae (5) and Apocynaceae and Verbenaceae (3) and others represent less than 3.

Discussion:

The study of herbal medicines as therapeutic agents of a paramount importance in addressing health problems of traditional communities and third world countries as well as industrialized societies (Cano and Volpato, 2004). Previous reports on the ethnobotany of are an evidence for the presence of numerous ethnomedicinal plants used by the tribals (Naik 1998; Singh *et al.* 2001; Srinivasan *et al.*, 2001; Reddy *et al.*, 2002; Olajide *et al.*, 2004; Mathivanan *et al.*, 2006; and Manjunatha *et al.*, 2007). Kumar *et al.*, (2007) and Biswas and Mukherjee (2003) reported that about 163 species of plants were used as wound healing plants in Indian systems of medicine such as Ayurveda, Siddha, Unani and folk medicine.

According to various traditional medicinal practices throughout the world, wounds have been treated mostly topically with different medicinal herbs or with their extracts solely or in combination with some other plant parts. Tribals also prepare medicines in a combination of several plant parts and they believe that combination of different plant parts cures diseases rapidly. Faced with increasing burden on health care, wound healers are examining all possible resources for solutions.

In Thailand *Aloe vera* gel was included in the Thai Herbal Fundamental Public Health Drug List as burn and wound therapy and several studies suggested that *Aloe vera*, or one or more of its constituents promote wound healing in various animal models (Maenthaisong, 2007).

Conclusion:

The present study revealed that traditional medicines are still in common use by the tribal communities. Thus the study ascertains the value of a great number of plants used in tribal medicine especially in wound healing which could be of considerable interest in the development of new drugs. There is obviously much still unknown information about plants to treat various ailments including wounds. Traditional healers use these medicinal plants for the treatment of wounds in their remote areas where modern treatment facilities are unavailable. Documentation of such plants from the perspective of ethnobiological angle is important for the understanding of indigenous knowledge systems. These resources are genetically important for future research.

This study evidently point out that, instead of trying to identify the active components of herbs through massive collection of plants from natural sources, it is better to start investigating the efficacy of the natural product from the traditional use.

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Table 1: List of Wound healing ethnomedicinal plants used by the tribals in Buldhana district.

| Sr. No. | Botanical Name | Family | Habit | Common Name | Part used |
|---------|--|-----------------|-------|-------------|------------|
| 1 | <i>Abrus precatorius</i> L. | Fabaceae | C | Gunj | Sd, Rt |
| 2 | <i>Acacia arebica</i> L. | Mimosaceae | T | Babul | St, L, Ft |
| 3 | <i>Acacia catechu</i> Willd. | Mimosaceae | T | Khaira | St, L |
| 4 | <i>Acacia ferneiana</i> Willd. | Leguminosae | T | Babul | St, Rt |
| 5 | <i>Acaylpha indica</i> L. | Euphorbiaceae | H | Kuppi | L, W |
| 6 | <i>Achyranthus aspera</i> L. | Amaranthaceae | H | Aghada | W, L |
| 7 | <i>Acorus calamus</i> L. | Araceae | H | Wacha | Rh |
| 8 | <i>Adathoda vasica</i> Nees. | Acanthaceae | S | Adulsa | L |
| 9 | <i>Adiantum, lunulatum</i> Burm. | Polypodiaceae | H | Hansraj | L |
| 10 | <i>Aegle mermelos</i> Corr. | Rutaceae | T | Bel | L, St |
| 11 | <i>Albizzia lebbeck</i> Benth | Leguminosae | T | Shirish | St |
| 12 | <i>Alstonia scholaris</i> Roxb | Apocynaceae | T | Satapani | L, St |
| 13 | <i>Annona squamosa</i> L. | Annonaceae | T | Sitaphal | L, Ft, Sd |
| 14 | <i>Anogeisus latifolia</i> Wall | Comberetaceae | S | Dhavad | St |
| 15 | <i>Argemone maxicana</i> L. | Papaveraceae | H | Kateringni | Rt, Lx |
| 16 | <i>Azadirachta indica</i> A Juss | Meliaceae | T | Nimb | L, Ol |
| 17 | <i>Baliospermum monatanum</i> Muell Arg. | Euphorbiaceae | S | Danti | L |
| 18 | <i>Bauhinia purpurea</i> L. | Fabaceae | T | Aptya | Fl, Ft |
| 19 | <i>Biophytum sensitivum</i> L. | Gerandaceae | H | Lajalu | Sd, W |
| 20 | <i>Boerhaavia diffusa</i> L. | Nyctaginaceae | H | Punarnava | W |
| 21 | <i>Boswellia serrata</i> Roxb | Bursaraceae | T | Salai | L |
| 22 | <i>Caesalpinia bonducella</i> F. | Caesalpinaceae | T | Karanja | Sd |
| 23 | <i>Calotropis gigantea</i> L. | Asclepiadiaceae | S | Rui | Lx |
| 24 | <i>Calotropis procera</i> Ait. | Asclepiadiaceae | S | Akava | Rt, St |
| 25 | <i>Cardiospermum halicacabum</i> L. | Celastraceae | S | Kapalphodi | Sd |
| 26 | <i>Celastrus panniculatus</i> Willd. | Celastraceae | C | Malkangi | Sd |
| 27 | <i>Centilla asiatica</i> L. | Umbeliferaceae | H | Mandukparni | W, Sd |
| 28 | <i>Chenopodium album</i> L. | Chenopodiaceae | H | Panwadi | L |
| 29 | <i>Cisampleos pareira</i> L. | Menispermaceae | T | Pahadmul | Rt |
| 30 | <i>Citrullus colocynthis</i> schard | Cucurbitaceae | C | Indrayan | Rt, Ft |
| 31 | <i>Clerodendron serratum</i> Spreng | Verbenaceae | T | Bharangi | Rt, L |
| 32 | <i>Clitoria terentea</i> L. | Fabaceae | H | Gokarna | Rt, L |
| 33 | <i>Coccinia grandis</i> L. | Cucurbitaceae | C | Kundari | W |
| 34 | <i>Cynodon dactylon</i> L. | Graminae | H | Durva | W, Rt |
| 35 | <i>Cyprus rotundus</i> L. | Cyperaceae | H | Motha | Rt |
| 36 | <i>Echinopus echinatus</i> L. | Asteraceae | H | Utakatyar | Rt |
| 37 | <i>Eclipta alba</i> Hassk. | Asteraceae | H | Maka | W, L |
| 38 | <i>Elephantopus scaber</i> L. | Asteraceae | H | Punjaki | Rt |
| 39 | <i>Emlica officinalis</i> Geartn | Euphorbiaceae | T | Amla | Ft, L |
| 40 | <i>Euphorbia hirta</i> L. | Euphorbiaceae | H | Dhudhi | Rt |
| 41 | <i>Euphorbia nerifolia</i> L. | Euphorbiaceae | H | Sherrni | Lx |
| 42 | <i>Feronia elephantum</i> Correa. | Rutaceae | T | Kavath | L |
| 43 | <i>Ficus bengalensis</i> L. | Moraceae | T | Vad | St |
| 44 | <i>Ficus hispida</i> L. | Moraceae | T | Bhuiambar | St |
| 45 | <i>Gmellina arboria</i> Roxb. | Verbenaceae | T | Shivan | Rt, L |
| 46 | <i>Hollarrhena antidysenterica</i> Wall. | Apocynaceae | T | Kalakadu | Rt, St, Sd |
| 47 | <i>Jasminum sambac</i> Ait. | Oleaceae | C | Mogra | St, L |
| 48 | <i>Jatropha curcas</i> L. | Euphorbiaceae | S | Ran Erand | L |
| 49 | <i>Madhuca indica</i> J.F.Gmel. | Sapotaceae | T | Moha | W |
| 50 | <i>Melia azedarach</i> L. | Meliaceae | T | Bakanim | St, L |
| 51 | <i>Mimosa pudica</i> L. | Mimosaceae | R | Lajalu | W |
| 52 | <i>Morinda citrifolia</i> L. | Rubiaceae | T | Aal | L |
| 53 | <i>Moringa oleifera</i> Lamk | Moringaceae | T | Sheoga | Rt |
| 54 | <i>Mucuna pruriens</i> Bak. | Fabaceae | C | Khajkui | Rt |
| 55 | <i>Nerium indicum</i> Mill. | Apocynaceae | S | Kaner | Rt |
| 56 | <i>Oscimum sanctum</i> L. | Labiaceae | H | Tulsi | L |
| 57 | <i>Plumbago zeylanica</i> L. | Plumbaginaceae | C | Chitrak | Rt |
| 58 | <i>Pongamia glabra</i> Vent. | Fabaceae | T | Karanja | Sd, L, Ol |
| 59 | <i>Psidium guajava</i> L. | Myrtaceae | H | Amrud | L |
| 60 | <i>Psoralia corylifolia</i> L. | Fabaceae | C | Bawachi | Sd, Ol |

| | | | | | |
|----|--|----------------------|---|-------------|--------|
| 61 | <i>Pterocarpus marsupium</i> Roxb. | <i>Fabaceae</i> | S | Bijasal | L |
| 62 | <i>Semecarpus anacardium</i> L. | <i>Anacardaceae</i> | T | Biba | Rt, Ft |
| 63 | <i>Tagetes erecta</i> L. | <i>Asteraceae</i> | H | Zendu | Fl, L |
| 64 | <i>Terminalia arjuna</i> Bedd | <i>Combretaceae</i> | T | Kahu | St |
| 65 | <i>Thespesia populnea</i> Soland ex correa | <i>Malvaceae</i> | T | Parashpipul | Ft, L |
| 66 | <i>Tridax Procumbens</i> L. | <i>Asteraceae</i> | H | Tantani | L |
| 67 | <i>Viscum album</i> L. | <i>Loranthaceae</i> | C | Banda | W |
| 68 | <i>Vitex negundo</i> L. | <i>Verbenaceae</i> | S | Nirguda | L |
| 69 | <i>Xanthium stumarium</i> L. | <i>Asteraceae</i> | S | Gokhru | Rt |
| 70 | <i>Zingiber officinale</i> Rosc. | <i>Zingiberaceae</i> | H | Adrak | Rh |
| 71 | <i>Ziziphus jujuba</i> L. | <i>Rhamnaceae</i> | T | Bor | Rt, L |
| 72 | <i>Ziziphus mauritiana</i> L. | <i>Rhamnaceae</i> | T | Bor | Rt |

(H = Herb, S = Shrub, T = Tree, C = Climber, R = Runner, L = Leaves, SD = Seed, St = Stem, Ft = Fruit, W = Whole plant, Rh = Rhizome, Rt = Root, Fl = Flower, Lx = Latex, Ol = Oil)



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