



# Studies on plants used in traditional medicine by Dhangar tribe of Northern Maharashtra Khandesh Region, India

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## ABSTRACT

Since ancient times, plants are being used as medicines, foods, agrochemicals and pharmaceuticals by large number of tribal, rural and urban people. India has more than 300 tribal communities. In Maharashtra, there are 20 major tribes. Though, there has been good research work on tribals of India including Maharashtra, some of the tribes, and tribal region of Maharashtra have not received proper attention of researchers. Dhangar is a herding caste of people found in the Indian states of Maharashtra, Karnataka, Goa, Madhya Pradesh and Uttar Pradesh. They are referred as Gavli in southern Maharashtra, Goa and northern Karnataka, and Ahir in northern Maharashtra (Khandesh region) The Dhangars are currently on Maharashtra's list of Vimukta Jati and Nomadic Tribes (VJNT). The survey of ethnomedicinal plants used by Dhangar tribe was undertaken in some of the regions of Northern Maharashtra Khandesh region. Analysis of data revealed that a total number of 127 plants species belonging to 116 genera and 59 families of flowering plants, and ferns are being used by Dhangar tribe for medicinal purposes. Out of 127 species used by them, 27 species are new reports of less known uses of medicinal plants from this region.

**Keyword:** Dhangar tribe, Traditional medicine, Ethnomedicine, Maharashtra, Ayurveda, Khandesh

## INTRODUCTION

Since the existence of human civilization, plants and their by products are being used by large number of population living in urban as well as rural, and remote areas for various purposes such as medicine, healthcare, food, clothing, shelter, agriculture, agrochemicals, pharmaceuticals, narcotics, etc. In the beginning, the sources of medicine were exclusively from plants. More than 7,000 plants are used in Indian Systems of Medicine such as Ayurveda, Homoeopathy, Unani, Siddha, etc. In India, there are over 300 major tribal communities. Tribal population in Maharashtra is about 9 million which is 9% general population.



**Fig.1** Map of Maharashtra showing the core areas of the distribution of individual Dhanger castes.

## MATERIAL AND METHODS

For the collection of information on plants used as traditional medicine by the Dhanger tribe a questionnaire was prepared and before interviewing them Prior Informed Consent was taken from knowledge providers. For survey and collection of information and voucher plant specimens, field visits to settlements of Dhanger were undertaken. During the field visits, data on the medicinal uses of plants was collected from elderly persons, tribal heads, local

medicine men called vaidu and mukhia of the tribal settlement.

## RESULT AND DISCUSSION

During the survey, plant and plant parts used as medicine by the Dhanger tribe in Maharashtra for the treatment of various ailments have been explored. Analysis of the data revealed that a total number of 127 species belonging to 116 genera and 59 families of flowering plants and ferns are used as medicine in the healthcare treatment (Table 1).

**Table 1 : Plants used in traditional medicine by Dhanger tribe of Maharashtra**

Plant name (Family)/Local name	Uses
Plants used for cough, cold and fever	
Achyranthes aspera L. (Amaranthaceae) Aghada	Whole plant is crushed, smashed in water and half cup of it is taken.
Anisochilus carnosus (L.) Wall. (Lamiaceae) Jirnya	Root piece is chewed and eaten.
Balanites aegyptiaca (L.) Del. (Balanitaceae) Hingnabet	Fruit powder is taken twice a day.
Cymbopogon citratus (DC.) Stapf. (Poaceae) Guvati chaha	Decoction of leaves is taken twice a day.
Dendrocalamus strictus (Roxb.) Nees. (Poaceae) Kalak, Velu	Leaf infusion of with small amount of turmeric powder is given once a day.
Diplocyclos palmatus (L.) Jeffr. (Cucurbitaceae) Kavdoli	Powered seeds are put in water and half cupful water is taken; seed powder mixed in half cup milk is taken by mensuring woman.
Eclipta prostrata L. (Asteraceae) Thiki fuli	Leaf paste is applied on wound and cuts; leaves are chewed and swallowed twice a day.
Tectaria macrodonta C. Chr. (Tectariaceae) Fern	Plant powder is taken once a day.

**Table 1 : Continued...**

<b>Plant name (Family)/Local name</b>	<b>Uses</b>
<b>Plants used for rheumatism/arthritis</b>	
Adiantum philipense L. (Adiantaceae) Dondhari	Oil prepared from roots and seasoned in mustard oil and kerosene with pepper and onion is used for massage.
Apium graveolens (Apiaceae) Owa, Ajwan	Powder of ajwain fruits and Sagargota seeds in equal proportion is taken twice a day after meals.
Caeslpinia bondus (L.) Roxb. (Caesalpiniaceae) Sagargota, Gaja	Powder of equal parts of ajwain fruits, sunth and sagargota seeds are taken after food.
Celastrus paniculatus Willd. (Celastraceae) Malkanguni	Seed oil is applied on the joints and gently massaged on painful joints.
Lygodium flexuosum (L.) Sweet (Lygodiaceae) Ishwarjeet	Bidi made of root is smoked. Fresh roots boiled with mustard oil are used for massage. Powder of whole plant is taken.
Remusatia vivipara (Roxb.) Schott. (Araceae) Piparkand	Paste of tuber is applied on joint once a day.
Withania somnifera (L.) Dunal (Solanaceae) Dolro, Ashwaganda	Plant powder in one cup of water is taken once a day.
Zingiber officinale Rose. (Zingiberaceae) Sunth, Aale	Powder of sunth, ajwain (Apium graveolens) fruits and seeds without seed coat of sagargota are taken in equal portion.
<b>Plants used for snake bite</b>	
Aegle marmelos (L.) Corr. (Rutaceae) Bel	Leaf juice is applied on bitten part and squeezed leaves are eaten to avoid nausea.
Cassitha filiformis L. (Lauraceae) Garwl	Infusion of aerial root and pendulous branches is given to reduce poisonous effect.
Commicarpus chinensis L. (Nyctaginaceae) Dogadfodi	Roots are pounded in water and one glass of it is given for drinking. Vomiting takes place which helps in reducing poisonous effect.
Cuscuta reflexa Roxb. (Cuscutaceae) Amarvel	To reduce the effect of poison one teaspoon of infusion of whole plant is given.
Cyphostemma auriculatum (Roxb.) Singh & Shetty (Vitaceae) Tendop, Tedip	Bark is taken in one cupful of water once a day.
Radermachara xylocarpa (Roxb.) K. Schum. (Bignoniaceae) Kharsing	Teaspoonful infusion of inner bark is given once a day to expel snake poison from the body.
Tinospora cordifolia (Wild.) Miers ex Hook.f.&Thom. (Menispermaceae) Gulvel	Dried stem powder with lukewarm water is given.
<b>Plants used for scorpion bite</b>	
Bauhinia racemosa Lamk. (Caesalpiniaceae) Shida	Fruit paste and leaf juice is applied on stung part.
Brassica juncea (L) Czern. & Coss. (Brassicaceae) Rai, Mohari	Juice of leaf, stem and branches is applied on stung part.
Carrisa congesta Wight (Apocynaceae) Karwand	Root piece of karvand is kept on molar tooth, chewed and its remnant is applied on stung part.

Table 1 : Continued...

Plant name (Family)/Local name	Uses
<b>Plants used for burns/boils</b>	
Abelmoschus ficulneus (L.) Wt. & Arn. ex Wight (Malvaceae) Jangli bhendi	Root paste is applied on affected part.
Argyrea sericea Dalz. and Gibs. (Convolvulaceae) Gowel, Panvel	Root paste is applied on the boils and other burnt portion.
Cryptocoryne retrospiralis (Roxb.) Kunth (Araceae) Jalkand, Bebad kand	Fresh tuber paste is applied twice a day.
Cyphostemma auriculatum (Roxb.) Singh & Shetty (Vitaceae) Tendop, Tedip	Bark is taken in one cupful of water.
Drimia indica (Roxb.) Jescop (Liliaceae) Janglikand	Paste of bulb is applied on boils.
Eulophia ramentacea Lindl.ex Wight (Orchidaceae) Kukad kand	Lukewarm paste of tuber is applied on boils.
Lavandula bipinnata O.Ktze (Lamiaceae) Gayand	Root paste is applied daily.
Mirabilis jalapa L. (Nyctaginaceae) Gulbaksha	Root paste is applied on boils and leaf is tied on the boils.
Tacca leontopetaloides (L.) O. Ktze. (Taccaceae) Bamanzara	Paste of tuber is applied on the boils and hairs on near by portion.
<b>Plants used for leucorrhoea/menstrual complaint</b>	
Ailanthus excelsa Roxb. (Simaroubaceae) Maharukh, Mahiling	Bark decoction of Maharukh along with Madhuca longifolia and Moringa oleifera in equal proportion is given once a day.
Catharanthus roseus (L). G.Don. (Apocynaceae) Sadaphuli	Leaf infusion is given once a day.
Clitoria ternatea L. var. pilosa Wall. Ex. Baker (Fabaceae) Pandhara Gokarn	During leucorrhoea, roots are pounded in water and one glass of it is taken.
Clitoria ternatea L. var. ternatea (Fabaceae) Neela Gokarn	When there is red discharge, roots crushed/ pounded in water are given once a day.
Eriolaena candollei Wall. (Sterculiaceae) Bothi	One cup infusion of inner bark is given once a day in the morning.
Mimosa pudica L. (Mimosaceae) Lajalu	Roots are pounded in cold water and taken. Whole plant juice is put in nose once a day.
Ougeinia oojeinesis (Roxb.) Hoebr. (Fabaceae) Kala palas	Infusion of bark of kala palas and bibla (in equal proportion) is taken.
Semecarpus anacardium L.f. (Anacardiaceae) Biba	Bark infusion of tiwas, ain and biba (in equal proportion) is taken.
Terminalia elliptica Willd. (Combretaceae) Ain	Bark infusion of ain, biba and tiwas (in equal proportion) is taken.
Cryptocoryne retrospiralis (Roxb.) Kunth (Araceae) Jalkand, Bebad kand	Paste of fresh tuber is applied twice a day.

**Table 1 : Continued...**

<b>Plant name (Family)/Local name</b>	<b>Uses</b>
<b>Plants used for stomach disorder/stomachache</b>	
Aloe barbadensis Mill. (Liliaceae/ Aloeaceae) Detki, Kawar	Piece of leaf is warmed and tied on stomach once or twice a day.
Ceropegia hirsuta Wt. & Arn. (Asclepiadaceae) Khutti	Fresh root is eaten every day. Whole plant decoction is taken once or twice a day.
Cicer arietinum L. (Fabaceae) Chana/ Harbara	Young leaves are collected in the morning, squeezed to get sour juice (aamb) which is given orally once a day.
Cissampelos pareira L. var. hirsuta (Menispermaceae) Pahad mul, Pahdvel	Powdered root infusion is taken once a day.
Wrightia tinctoria R. Br. (Apocynaceae) Dahi Kudi kala- kuda	Bark infusion is given twice a day.
<b>Plants used for tonic/general weakness</b>	
Chlorophytum borivilianum Sant. & Fern. (Liliaceae) Safed musali	Fresh tuberous root or one teaspoonful of root powder is taken once a day.
Dioscorea alata L. (Dioscoreaceae) Abhonya kand	Tubers are eaten raw twice a day till weakness is reduced.
Firmiana colorata (Roxb.) R. Br. (Sterculiaceae) Khavsa	Laddus are prepared by mixing seed powder with wheat flour; one laddu every day is eaten for two weeks.
Hygraphila schulli (Buch-Ham.) Mrs. & S.M. Almeida (Acanthaceae) Talimkhana	Laddus are prepared by mixing seed powder with wheat flour; daily one laddu is eaten.
Panicum milliaceum Linn. (Poaceae) Barati or Bhadali	Grains are adaptogenic & never affected by pathogens or insects.
Sterulia urens Roxb. (Sterculiaceae) Kadhali	Gum is eaten as it can be mixed in water.
<b>Plants used for contraceptive/antifertility</b>	
Curcuma longa L. (Zingiberaceae) Haldi	Turmeric is taken with one glass of water twice a day.
Dioscorea bulbifera L. (Dioscoreaceae). Kadukand, Karanda	Peeled, dried and powdered tuber is given once a day after menses.
Ficus religiosa L. (Moraceae) Pimpal	Just before one week of menses, receptacles are taken along with local liquor.
Foeniculum vulgare Mill. (Apiaceae) Badishep	Fruit powder is taken in one glass of water once a day in the morning after menses.
Trichosanthes tricuspidata Lour. (Cucurbitaceae) Kaundal	Seed powder mixed with water is given once a day for consecutive five days after menses.
Vitex negundo L. (Verbenaceae) Nirgundi	To make man sterile, seed powder is given twice or thrice a day for about two weeks.
<b>Plants used for acidity/ulcer</b>	
Apium graveolens (Apiaceae) Owa, Ajwan	Powder of ajwan fruits and seeds of sagargota (in equal proportion) is taken twice a day, after meals.
Begonia crenata Dryand. (Begoniaceae) Khafadi	Juice of whole plant is given for 3-4 days.
Caeslpinia bondus (L.) Roxb. (Caesalpiniaceae) Sagargota, Gaja	Powder prepared of equal parts of ajwain fruit, sunth and sagargota seeds are taken twice a day after food.
Eranthemum roseum (Vahl) R.Br. (Acanthaceae) Thandikarav	Root infusion is taken twice a day.

Table 1 : Continued...

Plant name (Family)/Local name	Uses
Limonia acidissima L. (Feronia elephantum) (Rutaceae) Kavath	Leaf powder in one cup of water is taken once or twice a day.
Triumfetta malabarica Koen. ex. Rottb. (Tiliaceae) Pivala lepta, zila	Root infusion is given twice a day.
<b>Plants used for dysentery</b>	
Bombax ceiba Linn. (Bombacaceae) Katesavar	Infusion of savar bark and Kharbat (Grewia tileafolia) fruits is taken twice a day.
Citrus aurantifolia (Christ. and Panz.) Swingle (Rutaceae) Limbu	Leaves of tulsi and seeds of citrus are taken together and its juice is given twice a day.
Dendrophoe falcata (L.f.) Etting (Loranthaceae) Menda, Bandgul	Leaf paste put in water is filtered and water is collected. Equal amount of milk is added to it and one cup of it is taken.
Ocimum gratissimum L. (Lamiaceae) Ran Tulshi	Leaves of tulasi and limbu are taken together and its juice is given twice a day.
Ocimum tenuiflorum L. (Lamiaceae) Tulshi	Leaves of tulshi & seeds of citrus are taken together and its juice is given twice a day.
Rhynchosia rufescens (Wild.)DC. (Fabaceae) Walmoyada	Roots paste in water is filtered through cloth and one cup of the filtrate is given once a day.
<b>Plants used for abortion</b>	
Carica papaya L. (Caesalpiniaceae) Payaya,	Latex of young fruits is dried and given with half cup of cow milk twice a day.
Dolichondrone falcata (Wall. ex DC) Seem (Bignoniaceae) Medisinghi	Fruit juice is taken once or twice to expel foetus of less than four months.
Leea macrophylla Roxb. Ex Horn. (Vitaceae/Leeaceae)	Pieces of rhizome and tuberous roots are roasted and eaten to expel foetus.
Ruellia tuberosa L. (Acanthaceae) Konsuda	Root paste is inserted in vagina and kept for overnight; it causes bleeding & foetus is expelled out.
<b>Plants used for wounds</b>	
Cardiospermum helicacabum L. (Sapinadaceae) Kapalphodi, phatakdi	Leaf juice is put on the cut part for stopping bleeding.
Eclipta prostrata L. (Asteraceae) Thiki fuli	Leaf paste is applied on wound and cuts. Leaves are chewed and swallowed.
Discorea hispida Dennst. (Dioscoreaceae) Vajkand	Tubers are roasted, pounded and its paste is applied on wounds and injuries.
Erythrina variegata L. (Fabaceae) Pangara	Bark paste is applied on wound; within 2-3 days wound is healed.
Lygodium flexuosum (L.)Sweet (Lygodiaceae) (Fig.3) Ishwarjeet	Smoking bidi made of root. Fresh roots boiled with mustard oil are used for massage. Powder of whole plant is taken.
Mallotus philipensis(Lam.)Muell-Arg. (Euphorbiaceae) Shendri	Paste of bark is applied on wound. It stops blood and acts as antiseptic also.
Millettia extensa (Bth.) Baker (Fabaceae) Agrivel	Bark is pounded in water and juice is applied once a day for 4-5 days.
Tridax procumbens L. (Asteraceae) Kadvaya Khod	If skin is cut by any external means, leaf juice is applied on it. Blood clotting takes place and wound also heals early.

**Table 1 : Continued...**

<b>Plant name (Family)/Local name</b>	<b>Uses</b>
<b>Plants used for other diseases/ailments</b>	
Actiniopteris dichotoma (Sw.) Link. (Filicinae) Bhuitad, Hevicarav	For kidney trouble (oedema), whole plant extract is given once a day for 7-8 days.
Aerides maculosum Lindl. (Orchidaceae) Menda-Orchid	During tuberculosis, root infusion is given once a day for one to two months.
Amaranthus spinosus L. (Amaranthaceae) Kantabhaji, Katemaat	Root paste with coconut oil is applied during migraine.
Anogeissus latifolia (Roxb. ex. DC) Wall, ex. G. & Perr. (Combretaceae) Dhaoda, Dhamoda	Infusion of bark is given once or twice a day for easy delivery.
Arisaema tortuosum (Wall.) Schott and Endl. (Araceae) Chandya Kand	For hair follicle infection, tuber paste is applied twice a day till relief.
Aristolochia bracteata Lam. (Aristolochiaceae) Kidamar	For curing leprosy, leucoderma, cardiac debility, cholera and bowel complaints, root powder and root decoction is used. Leaf juice or decoction is also used.
Asparagus racemosus Willd. (Asparagaceae-Liliaceae) Shatavari	For increase lactation, a cupful juice of fresh tuberous roots with sugar is taken twice a day.
Bauhinia purpurea L. (Caesalpiniaceae) Apta, Kanchan	For the treatment of white spot on face, one cup infusion of small piece of root is given once a day for one week.
Biophytum sensitivum (L.)DC. (Oxalidaceae) Jangli lajalu	Leaves of lajalu and seeds of ground nut are crushed and eaten twice a day by the pregnant women as diuretic.
Begonia crenata Dryand. (Begoniaceae) Khafadi	One two teaspoonful juice of whole plant is given 2-3 times a day during acidity.
Borassus flabelifer L. (Araceae-Palmae) Shindoli, Tad, Tadi	For increase lactation, latex of payer and sabar mixed with roots of tadi crushed together is given for one week.
Cardiospermum helicacabum L. (Sapinadaceae) Kapalphodi, phatakdi	Leaf juice is put on the cut part of wounds for stopping bleeding.
Cassia fistula L. (Caesalpiniaceae) Bahava, Kerwalo	Fruit is soaked in water and pulp is taken out; drops of pulp extract are put in the ear once or twice a day during earache.
Cassia occidentalis L. (Caesalpiniaceae) Rantakla, Takla, Tarwad	Mixture of root and seed paste is applied on scalp sores of babies.
Celosia argentina L. (Amarantaceae) Kurdu, Dkhrudo	For treating semen in urine, root infusion is taken once a day in empty stomach.
Cheilanthes albomarginata Clarke (Cheilanthaceae) Morjiva	During chest pain, whole plant decoction is taken once or twice a day.
Cheilanthes farinosa (Forsk.) Kaulf (Cheilanthaceae) Morjiva	During chest pain, whole plant decoction is taken once or twice a day.
Cissus quadrangularis L. (Vitaceae) Hadsandhi	Stem paste is applied on fractured bone or swollen part for 4-5 days.
Citrullus colosynthies (L.) Shrad (Cucurbitaceae). Kadu indrayan	During malaria, fruit decoction is given twice a day.
Clematis gouriana Roxb. ex. DC. (Ranunculaceae) Morvel, Moryel (Fig.4)	Stem and leaf infusion is taken once a day for throat ache and voice problem.

Table 1 : Continued...

Plant name (Family)/Local name	Uses
Cocculus hisutus (L.) Theob. (Menispermaceae) Vasanvel, Karrom	For treating conjunctivitis, leaf paste is applied on eye lids like potis.
Curculigo orchioides Gaertn. (Hydroxylaceae) Kalimusali, Kanmodi	During leucorrhoea, root infusion is given twice a day.
Datura metel L. (Solanaceae) Kala dhotra	During swelling due to smash without external wound, leaf by applying little oil is warmed on fire and tied on swelling.
Euphorbia ligularia Roxb. (Euphorbiaceae) Saber	For increase lactation, latex of saber, payer and roots of tadi mixed and given once a day for about week. It increases lactation in women.
Emblica officinalis Gaertn (Euphorbiaceae) Amla	During diabetes, seed powder is taken once or twice day for a week.
Ficus amplissima J. E. Smith (Moraceae) Pimpri, Payar	For increase lactation, latex of payer and sabar mixed with roots of tadi crushed together is given for one week.
Ficus hispida L.f. (Moraceae) Kala UMBER	During migraine (religious), root piece is tied on the ear of the affected side of the head.
Flacourtia indica (Burm f.) Merr. (Flacourtiaceae) Parhenkal (Fig.2)	Epicarp of fruit is removed and crushed in warm water is applied on joints during arthritis.
Garuga pinnata Roxb. (Burseraceae) Kakad	During inflammation, bark paste is applied and fomented with warm water.
Grewia tillifolia Vahl (Tiliaceae) Kharmati	Root powder infusion is taken once a day as anti-abortionificient.
Gymnema sylvestre (Retz) R.Br. ex Schult. (Asclepiadaceae) Dashmuli, Bedkicha pala	During diabetes, fresh leaves are eaten.
Haldina cordifolia (Roxb.) Ridsd. (Rubiaceae) Haldu	Latex is applied on aching tooth / gums.
Helecteres isora L. (Sterculiaceae) Murudsheng Ati	For treating leucoderma (white spot on skin), root infusion is given once a day.
Jatropha curcas Linn. (Euphorbiaceae) Parsha Erand	During muscular pain, paste of bark powder applied on affected part and wrapped with cloth till one gets relief.
Lygodium flexuosum (L.) Sweet (Lygodiaceae) Ishwarjeet (Fig.3)	For bleeding gum, bad breath, sprains, scabies, rheumatism, antifertility agent, abortificient, jaundice, wound healing, bidi made of root is smoked. Fresh roots boiled with mustard oil are used for massage. Powder of whole plant is taken.
Modhuca longifolia (Koen.) Macbr.var.latifolia (Sapotaceae) Moha, mahua	Extract of dried flowers is applied on hairs to promote hair growth.
Mentha spicata L. (M. arvensis) (Lamiaceae) Pudina	During jaundice, fresh leaves are crushed and applied on eyes, surface of foot and all over body.
Nervilia aragoana Gaud (Orchidaceae) Arubat Kand	During headache, tuber paste is applied on forehead ones a day till relief.
Ocimum tenuiflorum L. (Lamiaceae) Tulshi	Leaves of tulshi & seeds of citrus are taken together and its juice is given during dysentery.
Plumbago zeylanica L. (Plumbaginaceae) Chitrak	Powder of chitrak seeds, Cyperus rotundrus rhizome and Psoralea sp seeds in equal proportion mixed in til oil is applied on affected part of leucoderma.



Table 1 : Continued...

Plant name (Family)/Local name	Uses
Pogostemon benghalensis (Burn.f.) O.ktze. (Lamiaceae) Phangla	Putting leaf juice on dried gum of <i>Sturculia urens</i> , fried with til oil, becomes black is taken in empty stomach for treating piles.
Pterocarpus marsupium Roxb. (Fabaceae) Bilwas or Bija	Powder of small pieces of wood is kept in water in copper glass overnight; filtered water is taken once a day during diabetes.
Pterospermum diversifolium Bl. (Sterculiaceae) Padal	If cattle are not eating fodder due to stomach inflation, the leaves are crushed or cut into pieces and given as fodder.
Ricinus communis L. (Euphorbiaceae) Ondo, Erand	Paste of roots of erand and kumbhi ( <i>Careya arborea</i> ) in water juice is given once or twice for treating red urination.
Rivea hypocrateriformis (Desr.) Choisy (Convolvulaceae) Phangyel	During sexual weakness, whole plant powder is taken in one cup of milk once a day.
Solanum virginianum L. ( <i>S. xanthocarpum</i> ) (Solanaceae) Katerinagni	Fruits are dried, powdered and one teaspoonful of powder is given once a day for about a week in case of asthma.
<i>Sterculia villosa</i> Roxb. ex Dc. (Sterculiaceae) Sardol	Fresh roots are eaten twice a day to overcome weakness and male sterility.
<i>Swertia densiflora</i> (Griseb) Kashyap (Gensianaceae) Kaduphang	Roots are pounded in water & juice is taken once a day during leprosy.
<i>Terminalia chebula</i> Retz. (Combretaceae) Hirda	Decoction of fruits is taken once or twice a day for the treatment of excess heat in the body.
<i>Tylophora fasciculata</i> Buch.-Ham. (Asclepiadaceae) Wata chira	In case of woman infertility, root infusion is given.
<i>Verbascum chinense</i> (L.) Sant. (Scrophulariaceae) Kali-Kutaki	During piles, powder of leaves and seeds is given in cupful of water, twice a day till it is cured.

The number of plant species used by the tribe for curing some of the important and common diseases, shown in the parenthesis, are as follows-stomachache/abdomen pain (8) cough, cold, fever (8), rheumatism/arthritis (9), snake bite (7) scorpion bite (3) contraceptive (6) acidity/ulcer (6) menstrual complaints (9) dysentery (6) abortifacient (4), wounds (6), lactation in woman (4) piles (3) diabetes (3) burns (2) boils (6) bone fracture, etc. The tribal settlements are generally in remote areas of forest and there is prevalence of common diseases like stomach disorders, cough, cold, fever, dysentery, eye problems, wounds, boils, scorpion bite, snake bite, bone fracture, etc. The prevalence of diseases can be attributed to unhygienic conditions, poor quality of food, lack of clean drinking water and continuous exposure to the environment. In addition, tribals do not get in time and proper treatment even for common diseases. Therefore, for the treatment, they mostly rely on easily available traditional herbal medicines. It is also observed that the dose or administration of the drug, i.e. quantity of extract, decoction, infusion or powder to be taken is based only on approximation, and is not standardized. Therefore, to prove efficacy of any crude

drug, it is very essential to standardize the dosage or administration and also authenticate the sourcing plant species of the drug. There is also need for maintaining precise clinical records of the study of plant extract, adverse drug reaction if any, etc. which will help in drug standardization

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