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Ethnomedicinal Plants Used by the Dura Tribe in Lamjung District, Nepal

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Abstract

An ethnobotanical survey was conducted to document medicinal plants used by the Dura tribe for the treatment of various ailments in Neta, Madhyanepal municipality, Lamjung District, Nepal. Field visits were carried out from October 2022 to April 2023 to collect ethnobotanical data. Data were gathered from 56 key informants using semi-structured interviews, un-structural interviews, group discussions, and questionnaires. The study area is rich in ethnic diversity, encompassing a range of ethnic groups such as Gurung, Dura, Brahmin, Chhetri, Magar, Damai, Kami, Sarki, etc. A total of 73 plant species belonging to 45 families, used to treat 64 different ailments, were recorded. The factor of informant consensus (FIC) for muscular/skeletal disease category had the highest value. The results showed that four plant species namely: *Calotropis gigantea, Drynaria quercifolia, Hoya lanceolata* and *Periploca graeca* were culturally important to the Duras for the treatment of muscular sprain and bone fracture. Herbs were the most commonly used plant for medicine followed by tree and shrub. Leaves were the most frequently used plant parts, and the majority of plants were used in the form of juice. Wild plant species accounted for 63% of the medicinal plants used. Although the Duras are a marginalized tribe, they possess huge indigenous knowledge about medicinal plants. Moreover, phytochemical analysis of culturally valued plants within the Dura community should be conducted to validate this knowledge scientifically.

Keywords: Duradanda**,** Indigenous knowledge, Madhyanepal municipality, Muscular sprain, *Periploca graeca*

Introduction

Nepal is a multiethnic country with 142 caste/ethnicity (National Population & Housing Census [NPHC], 2021). These ethnic groups possess indigenous knowledge of medicinal plants, and numbers of plants are used as medicine exclusively by certain ethnic groups. Ethnomedicine is a valuable source of information regarding useful medicinal plants of indigenous people. It benefits humanity in terms of traditional pharmacopoeias.

The Dura are one of the ethnic groups originally reside in Duradanda, Lamjung. Dura's have their own language, religion, and their own type of health care practices. Ethnic communities develop their indigenous knowledge on the use and management of plants including medicinal plants through long years of interaction with their surrounding (Gebeyehu et al., 2024). Ethnobotany serves as a tool to find out such knowledge of indigenous people.

The study of ethnobotany in Nepal began with the publication of Medicinal and Food Plants of East Nepal by Banerji (1955), and was continued by many other researchers. Besides ethno-medicinal study conducted on different geographical areas of the country, extensive research has also focused on specific ethnic groups such as Sherpas (Bhattarai, 1989; Sacherer, 1979), Gurungs (Coburn, 1984), Tharus (Dangol & Gurung, 1991; Ghimire & Bastakoti, 2009; Manandhar, 1985), Tamang (Luitel et al., 2014; Manandhar, 1991), Rautes (Manandhar, 1998), Chepangs (Rijal, 2011; Tamang et at., 2017), Limbus (Limbu & Rai, 2013), Magars (Acharya, 2012; Nemkul et al, 2018; Poudel & Gautam, 2008; Singh et al., 2018; Thapa, 2012) and others. Till the date, no ethnobotanical study has been conducted on the Dura tribe.

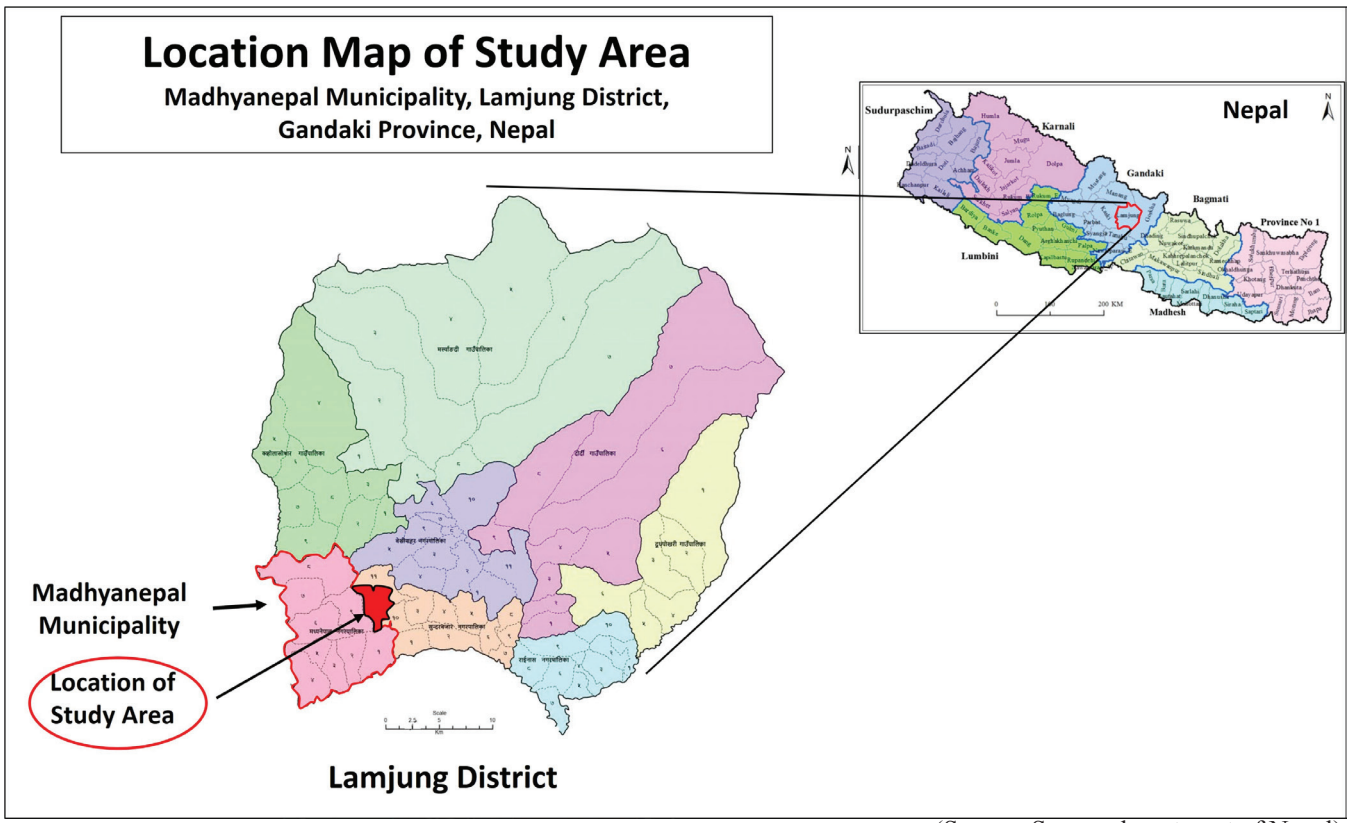
This current study is the first attempt to document the ethnomedicinal knowledge of the Dura tribe in Lamjung District. The total population of Duras in Nepal is 5581 (NPHC, 2021). It is very significant to study ethnomedicinal knowledge of the Duras before it is lost forever.

Materials and Methods

Study area

The study area lies in Lamjung District, Gandaki Province of Nepal (Figure 1). Lamjung District lies between 28º03'N to 28º30'N latitude and 84º11'E to 84º38'E longitude, and the Besisahar is it's headquarter. The elevation ranges from 385 m in the south to 8,162 m (Manaslu Himalaya) in the north above sea level (https://chinarinepal.com/ Lamjung). The temperature of the study area is hot in summer (June), with the average highest temperature around 35.7ºC, and cold and dry in winter (January), with the lowest average temperature around 14.5ºC and the least rainfall occurring in December. Madhyanepal municipality is one of the eight municipalities in Lamjung District. Various ethnic groups, including Gurung, Dura, Chhetri, Brahmin, Magar, Lama, Tamang, Kami, Damai, Sarki, reside in the study area.

The Dura tribe is an indigenous group from the Duradanda hill of Lamjung District. The population of Dura people throughout Nepal is 5,581 (NPHC, 2021), with2751 residing in Lamjung District. The Dura have their own language, known as the Dura language, and maintain their own religion and culture, though it is quite similar to that of the Gurung. There is history that at the end of fifteen century the Dura established a Shah ruler in Lamjung by removing the Ghale King (Adhikari, 1973-60). Local healers (Lamas) and elderly peoples hold the proper knowledge of medicinal plants used for healing practices. They have acquired wide range of traditional healing knowledge.



(Source: Survey department of Nepal)

Figure 1: Location map of the study area

Data collection

The study area was visited on October, 2022, January, 2023 and April, 2023. During the first visit in October 2022, researcher stayed for three days. This visit involved meeting with local people and community leaders to introduce the purpose of the research. It helped to recognize local traditional healers and people having knowledge on herbal formulations, for selection of key informants. The selection of informants must be purposive rather than random for the study of ethnobotany.

The next visit of study site was on January and April 2023, with one week stay in each visit. Necessary materials such as polythene bags, number tags, old news papers, plant press, hard boards, strings, plant cutter, digging tools, a camera, field notebook, markers, pencils were taken along during the field visits.

Ethnomedicinal information was collected through questionnaires, structured and un-structured interviews among healers and knowledgeable people (56 Key informants). Voucher Herbarium Specimens were prepared, identified, and confirmed by comparing them with authenticated specimens at National Herbarium and Plant Laboratories, Godawari (KATH). The prepared herbaria were deposited at Botany Department, Tri-Chandra Multiple Campus, Ghantaghar.

Factor for informant consensus (FIC)

The FIC was calculated as the number of use citations in each category (Nur) minus the number of species used (Nt), divided by the number of use citations in each category minus one (Heinrich et al., 1998):

$$\text{FIC} = \frac{\text{Nur} - \text{Nt}}{\text{Nur} - 1}$$

In order to use this tool, the illnesses were classified into broad disease categories (several diseases based on the organ systems in one category) such as: (1) gastrointestinal, (2) dermatological, (3) respiratory, (4) muscular/skeletal, (5) pain, (6) urinary tract infection (UTI), (7) blood related problems, (8) eye problems, (9) jaundice, (10) kidney stones, and (11) other.

Results and Discussion

Ethnomedicinal knowledge among the people in the study area

The present study recorded 73 plant species belonging to 47 families, which were used for the treatment of various ailments by the Dura tribe in the study area, with plants names provided in the Dura language (Appendix 1). Ethnomedicinal data were collected by interviewing 56 informants. Asteraceae was the most prominent family, with six species, followed by Lamiaceae (five species), Moraceae (four species), Apocynaceae, Fabaceae, Menispermaceae, and Rutaceae (each with three species), six families with two species and remaining 34 families with one species. Of the 73 plant species recorded, 37% (27 plant species) were cultivated and 63% (46 plant species) were wild.

Similarly, Manandhar (1987) reported Asteraceae as the most commonly used family for treatment of ailments among tribes of Lamjung District.

Leaves were the most commonly used plant part for medication. Leaf of 38 plant species of medicinal plants was used, followed by the root of 24 species, fruit of 21 species, bark of 17 species, stem of nine species, flower of eight species, whole plant of eight species, rhizome of five species, sap of four species, seed of four species, frond of one species and the latex of one species.. Various ailments were treated using different components of same plant, and multiple parts of the same plant were recorded to be used for treating various ailments.

The most commonly used form of preparation was juice (26%), followed by decoction (25%), paste (19%), powder (12%), chewing (10%), infusion (2%) and others.

In the Dura language *Bombax ceiba* L., *Psidium guajava* L., *Nephrolepis cordifolia* (L.) C. Presl *Phyllanthus emblica* L., and *Urtica dioica* L. are called as Eku, Basa, Naisu, Kon and Koke (Appendix 1) respectively. In contrast, in the Gurung language

they are called as Chongonchhi, Belauti, Kyudabi, Titi and Pulu (Manandhar, 2002) respectively.

Juice mode of drugs were used for immediate effects and sometimes used as antiseptic (e.g.,eye drops), likely due to easy availability of fresh plants materials (Nemkul, 2022). In most cases, juice was the most preferred form of medication. Similar findings have been reported previously (Bastakoti, 2019; Bhandari et al., 2023; Bhattarai, 2017; Manandhar, 1987; Singh et al., 2012).

The use of latex of *Calotropis gigantea* (L.) Dryand to treat sprains, fractures and muscular pain is supported by previous study in Lamjung District (Manandhar, 1987). Tamang et al.(2017) reported similar medicinal activity practiced used by Chepang community.

The Duras of the study site used *Zanthoxylum armatum* DC. to treat toothache, dysentery and common cold, similar to previous reports (Acharya, 2012; Manandhar, 1987).

They also used *Justicia adhatoda* L. to treat tonsillitis, cough and asthma, aligning with findings from other studies (Bhandari et al., 2023; Tamang et al., 2017).

The Duras of the study site used *Woodfordia fruticosa* (L.) Kurz. for the treatment of dysentery and gastritis, similar to its previously reporting use in the Magar community (Nemkul et al., 2022)

Factor for informant consensus (FIC)

A total of 73 plant species were used for the treatment of 64 ailments, which were grouped into 11 different disease categories based on the human body parts affected by an illness, following Frei et al. (1998) with some modifications. The categories were: (1) gastrointestinal (diarrhea, helminthiasis, dysentery, gastritis, abdominal bloating, indigestion, intestinal ulcer, and dyspepsia), (2) respiratory (common cold, cough, tonsillitis, asthma, sinusitis, sore throat, and tuberculosis), (3) dermatological (burn, cuts, wounds, pimple, skin diseases, acne, scabies, furuncle, and vitiligo), (4) muscular/skeletal (sprain, and fracture, joint pain), (5) pain (body pain, headache, stomach pain, back pain, toothache, chest pain, rheumatoid arthritis, and gout.), (6) urinary tract infection (UTI) (urine infection, urine blockage) , (7) blood related problems (blood pressure problem, menstrual problem, Blood cancer and anemia), (8) eye problems (9) kidney stones (10) jaundice and (11) other (malaria, fever, nausea, paralysis, bee sting, snake bite, hair fall, posterior nose bleed, miscarriage/ problem in postpartum discharge, diabetes, epilepsy, piles, uric acid, mastitis, heart disease, liver disease, bone stuck in throat, and loss of appetite).

The number of taxa used for treatment of each disease category and the total number of use-reports were analyzed, and it was found that the factor for informant consensus (Fic) value (Table 1) ranged between 0.85 to 0.97. FIC for muscular/skeletal disease category had highest values (Fic 0.97), followed by dermatological troubles (Fic 0.96), gastrointestinal disorder and respiratory problems each (Fic 0.95), pain and other problems both (Fic 0.94), blood related problems (Fic 0.93), urinary tract infection (Fic 0.92), jaundice (Fic 0.92), kidney stone (Fic 0.87), and eye problems (Fic 0.85). The data showed high use reports of the medicinal plants by the Duras (Table 10).

Some other scientists (Mall et al., 2015; Ragupathy et al., 2008; Singh et al 2012; Uprety et al., 2010) also grouped all the ailments reported by ethnic groups in to different disease categories and calculated Fic values. Fic value indicates the agreement or disagreement in the use of taxa for treatments of the diseases among the tribal.

The highest Fic values for muscular/skeletal disease category in the present study indicates a remarkable agreement of the informants regarding the use of plants for treatment of muscular sprain and bone fracture in the study area. The Dura community valued four plant species -*Calotropis gigantea*, *Drynaria quercifolia* (L.) J. Sm., *Hoya lanceolata* Wall. ex D. Don, and *Periploca graeca* L. - for their cultural significance in treating muscle sprains and bone fractures. The factor of informant consensus provides a measure of reliability supporting the

claims regarding the use of plants for medicinal purposes in the ethnomedicinal studies (Malla et al., 2015). A higher level of consensus about the use of particular taxa for curing ailments indicates that the ethnomedicinal use of plants is in practice (Shrestha et al., 2014; Singh et al., 2012).

The Comparatively low consensus factor (Fic 0.85) for the eye problem category may indicate a lower prevalence of eye problem among the Duras. The data also showed that use report for eye and kidney problem were comparatively low. Fic values not only reflect agreement regarding the use of taxa for the treatment of disease, but also indicate the use reports of the taxa (Ragupathy et al., 2008).

Table 1: FIC value for different disease categories

S.N.	Disease category	Nt	Nur	Fic
1	Gastrointestinal	47	988	0.95
2	Respiratory	27	531	0.95
3	Dermatological	20	477	0.96
4	Muscular/ Skeletal	4	104	0.97
5	UTI	5	58	0.92
6	Pain	25	462	0.94
7	Kidney stone	3	16	0.87
8	Eye problems	4	21	0.85
9	Jaundice	7	77	0.92
10	Blood related problems	16	236	0.93
11	Other	41	673	0.94

Conclusion

A total of 73 medicinal plant species used by the Dura people to treat 64 different ailments, were recorded. The Duras have native names for these plant species, many of which differ significantly from those in the Gurung language. For some species, the Duras use Nepali names. Asteraceae was the most prominent family followed by Lamiaceae, Moraceae, Apocynaceae, and others. Herbs were the dominant form among the medicinal plants, and leaves were the most frequently used plant part. Much frequent used form of medicine was plant juice, likely due to the easily availability of these plants.

Among the eleven disease categories, the muscular/ skeletal disease category had the highest factor for informant consensus (Fic) value. This highest Fic value indicates a remarkable homogeneity of knowledge of the informant regarding the use of plants for treating muscular sprain and bone fracture in the study area. The Dura tribe considered four plant species -*Calotropis gigantea*, *Drynaria quercifolia*, *Hoya lanceolata*, and *Periploca graeca* - culturally significant for treating these conditions. Phytochemical test of culturally valued plants among the Dura community must be done to validate the knowledge scientifically. Specifically, extraction and phytochemical analysis of these four plant species should be done to test for the presence of anti-inflammatory compounds, as anti-inflammation is key principle in the treatment of fractures.

From this study, it can be concluded that although the Dura are a marginalized tribe with small population, they have their own language, primary healthcare culture, and deep knowledge on medicinal plants and the ailments they commonly face. Their use of medicinal plants for primary health care remains high. The Dura tribe is one of the heritages of Nepal, so we should focus to preserve the various aspects of their traditional knowledge and practices.

Author Contributions

Both authors were involved in the research. A Ghimire visited the study site, collected ethno-medicinal data and plant specimens, and prepared the herberium and C M Nemkul reviewed the manuscript.

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Appendix 1: Ethnomedicinal data

Family	Botanicalname, Voucher no.	Name in DURA language	Local name	Habit	Type	Ailments	Parts used	Drug forms
Acanthaceae	*Justicia adhatoda* L. Ga27	Asuro	Asuro	Shrub	Wild	Tonsillitis, cough, asthma	Root, Flower, Young leaf	Powder, Decoction
Acoraceae	*Acorus calamus* L. Ga 28	Syade	Bojho	Herb	Cultivated	Sore throat, cough and cold, paralysis, epilepsy	Root, Rhizome	Chewing, Paste, infusion
						Anthelmintic in cattle		Juice
Asparagaceae	*Agave americana* L.	Ketuki	Ketuki	Shrub	Wild	Burn, cuts, cancer, indigestion	Leaf	Juice
Amaranthaceae	*Acyranthes bidentate* Blume	Chyuna	Datiwan	Herb	Wild	Toothache, skin diseases, gastritis, hair fall	Root	Juice
							Stem	Chewing
	Alternanthera sessilis (L.) R. Br. ex DC.	Bhringi raj	Bhringi jhar	Herb	Wild	Asthma, cut wounds, fever	Leaf	Juice and Paste
Anacardiaceae	*Magnifera indica* L.	Aanbo	Aap	Tree	Cultivated	diarrhea, menstrual problem, ulcer, asthma	Bark	Decoction
						Bee sting	Sap	Apply sap
	Rhus chinensis Mill. Ga 29	Bhakimlo	Bhakimlo	Shrub	Wild	Diarrhea, blood purification, stomach pain	Fruit, Leaf	Decoction
Apiaceae	*Centella asiatica* (L.) Urb. Ga40	Ghodtapre	Ghodtapre	Herb	Wild	Cut wounds, diarrhea, fever, sore throat, indigestion, ulcer, eye problems	Whole plant	Paste Juice
						Urine infection (blockage) in cattle		Juice
Apocynaceae	*Alstonia scholoris* (L.) R.Br. Ga30	Chhatiwan	Chhatiwan	Tree	Wild	Ulcer, dysentery, malaria, skin diseases in both cattle and human, lactation	Bark, Leaf	Powder, Decoction, Juice
	Calotropis gigantean (L.) Dryand	Aank	Aank	Shrub	Wild	Gastritis, paralysis, body pain, wounds, sprain, fracture	flower, sap, root, leaf	Paste, Decoction
	Hoya lanceolata Wall. ex D. Don Ga31	Thirjo	Thirjo	Shrub	Wild	Back pain, fracture, sprain	Whole plant	Decoction
	Periploca graeca. L. Ga 13	Shikhari lahara	Shikari lahara	Climber	Wild	Fracture, joints pain, diabetes, Gastritis, high blood pressure	Whole plant	Chewing, Paste
						Wounds in cattle due to tiger/ lion attack		Paste
Asperagaceae	*Asparagus racemosus* Willd. Ga39	Kurilo	Kurilo	Shrub	Cultivated	Dysentery, common cold, jaundice, menstrual problems, lactation in both human and cattle	Leaf, Root, rhizome	Decoction
Asphodelaceae	*Aloe vera* (L.) Burm.f.	Doma	Ghiukumari	Herb	Cultivated	Burn, high blood pressure, diabetes, acne, pimples, gastritis	Leaf	Apply gel, Consume Juice or gel
Asteraceae	*Acmella oleracea* R.K. Jansen	Phaka	Marati	Herb	Cultivated	Indigestion, anthelmintic	Fruit	Paste
	Ageratina adenophora (Spreng.)	Banmasa	Banmara	Shrub	Wild	Cuts and wounds, scabies, head	Leaf,	Juice, Paste,

Family	Botanicalname, Voucher no.	Name in DURA language	Local name	Habit	Type	Ailments	Parts used	Drug forms
	R. M. King & H. Rob.					ache, sinusitis	Young stem, Root	inhale vapor
	Artemisia vulgaris L.	Paati	Titepati	Herb	Wild	Anthelmintic, gout, skin diseases, scabies	Leaf	Paste, Juice
	Elephantopus scaber L.	Sahasra buti	Sahasra buti	Herb	Wild	Common cold, tuberculosis, high fever	Root	Decoction
						Abdominal bloating in cattle	Whole plant	Decoction, Juice
	Galinsoga parviflora Cav.	Gande	Gandhe	Herb	Wild	Cuts and wounds, diarrhea	Leaf	Juice, Paste
	Inula cappa (Buch.-Ham. ex D.Don) DC	Jyori	Gaitihare	Herb	Wild	Rheumatoid arthritis, body pain	Root, Leaf	Decoction
Berberidaceae	*Berberis asiatica*Roxb. Ex DC. Ga38	Chutro	Chutro	Shrub	Wild	Piles, ye problem, jaundice, fever	Root, stem, Bark, Fruit	Paste, Powder, Decoction, infusion
Cannabaceae	*Cannabis sativa* L. Ga37	Dhaso	Ganja	Herb	Cultivated	Common cold, dysentery, abdominal bloating in cattle	Leaf, Seed	Powder
Capparaceae	*Crataeva magna* (Lour.) DC.	Sipliyan	Sipligan	Tree	Cultivated	Kidney stone, fever, urine infection	Leaf, Stem	Decoction
Caryophyllaceae	*Drymaria cordata* (L.) Wild. Ex schult Ga36	Abijalo	Abhijalo	Herb	Wild	Common cold, gastritis, nausea	Whole plant	Paste and juice
Combretaceae	*Terminalia bellirica* (Gaertn.) Roxb. Ga 15	Thechu	Barro	Tree	Wild	Piles, gastritis, cough, common cold	Fruit	Powder, Decoction
	Terminalia chebula Retz. Ga 14	Harro	Harro	Tree	Wild	Gastritis, ulcer, menstrual problems	Fruit	Chewing, powder, Decoction
Costaceae	*Costus speciosus* (Koen ex. Retz.) Sm.	Betbara	Betlauri	Herb	Cultivated	Snake bite, stomach pain, gastritis	Root, rhizome	Paste, powder
Crassulaceae	*Kalanchoe pinnata* (Lam.) Pers.	Kle	Ajambari jhar	Herb	Wild	Jaundice, kidney stone, gastritis, dyspepsia	Leaf	Juice
Ericaceae	*Rhododendron arboreum* Sm.	Bha	Lali gurans	Tree	Wild	Diabetes, blood pressure, bone stuck in throat	Flower	Chewing and Juice
Euphorbiaceae	*Jatropha curcas* L.	Sajiwan	Sajiyon	Shrub	Wild	Toothache, tonsillitis, burn	Leaf, stem	Juice and Paste
Fabaceae	*Bauhinia variegate* (L.) Ga35	Koiralo	Koiralo	Tree	Cultivated	Blood cancer, liver diseases, diarrhea, piles, menstrual problem	Bark, Flower, Leaf	Juice and Decoction
	Caesalpinia decapetala (Roth) Alston	Areli	Areli	Shrub	Wild	Stomach pain, diarrhea	Root	Chewing
						Mastitis in cattle	Stem, leaf	Roasting
	Mimosa pudica L. Ga34	Buhari jhar	Lajjawati jhar	Herb	Wild	Piles, fever, kidney stone, urine infection, gastritis, lactation	Leaf, Root	Paste, hewing, Powder
Fagaceae	*Castanopsis indica* (Roxburgh ex Lindil.) A. DC.	Kadush	Katush	Tree	Wild	Indigestion, joints pain	Bark	Decoction
Lamiaceae	*Callicarpa macrophylaa* Vahl. Ga 26	Dahikamala	Dahikaamlo	Shrub	Wild	Sore throat, ulcer, skin diseases	Root, fruit	Powder

Family	Botanicalname, Voucher no.	Name in DURA language	Local name	Habit	Type	Ailments	Parts used	Drug forms
	Leucosceptrum canum Sm.	Dhursul	Dhursyauli	Shrub	Wild	Headache, fever	Leaf, Root	Decoction
	Mentha spicata L. Ga25	Binidzu	Pudina	Herb	Cultivated	Nausea, gastritis, fever, diarrhea	Leaf	Paste and Decoction
	Ocimum basilicum L. Ga24	Babari	Babari	Shrub	Cultivated	Urine infection, headache, eye problem	Root, Leaf, flower, Bark	Powder, Decoction, Juice
	Ocimum tenuiflorum L. Ga 23	Tulasi	Tulasi	Shrub	Cultivated	Fever, cough and cold, diabetes, gastritis, heart disease, ulcer	Leaf, Root, Stem	Chewing, Decoction, Juice
Lythraceae	*Woodfordia fruticosa* (L.) Kurz. Ga33	Budho Dangero	Bot Dhaiyanro	Herb	Wild	Dysentery, gastritis	Leaf	Powder
Malvaceae	*Bombax ceiba* L.	Eku	Simal	Tree	Wild	Blood purification, stomach pain, wounds	Bark, Sap, Flower, leaf	Decoction
Melastomataceae	*Osbeckia stellata* Buchanan-Hamilton ex D. Don	Angeri	Sano Angeri	Shrub	Wild	Indigestion, toothache, diarrhea	Root, fruit, Leaf	Juice, Decoction
Meliaceae	*Azadirachta indica* A. Juss Ga32	Nim	Neem	Tree	Cultivated	Skin diseases, fever, diabetes, uric acid, high blood pressure	Leaf, Bark	Paste, Juice, powder
Menispermacae	*Cissampelos pareira* L.	Guargano	Gudargano	Climber	Wild	Cough, gastritis, indigestion, fever, diarrhea	Whole plant	Juice and paste
	Stephania japonica (Thunb.) Miers Ga22	Chillo Batulpate	Chillo Badallpate	Climber	Wild	Gastritis, headache	Stem, leaf	Juice
	Tinospora sinensis (Lour.) Merr. Ga31	Tigi	Gurjo	Climber	Wild	Chronic fever, diabetes, jaundice, urine infection, posterior nosebleed	Leaf and Stem	Decoction
Moraceae	*Ficus benghalensis* L.,	Bar	Bar	Tree	Wild	Diabetes, diarrhea, cough and cold, eye problems	Bark, Seed	Decoction, Juice, infusion
	Ficus benjamnia L.	Shami	Shami	Tree	Wild	Chest pain	Fruit	Powder
	Ficus semicordata Buch.-Ham. ex Sm.	Khadayo	Khanayo	Tree	Cultivated	Scabies	Latex	Apply latex
						Headache, indigestion	Fruit, Bark,	Juice
						Miscarriage/ Problem in postpartum discharge in cattle	Bark	Decoction
	Morus alba L.	Kimbu	Kiu kafal	Tree	Cultivated	Toothache, dysentery, diabetes, anthelmintic	Bark, Root, Fruit	Juice and Paste
Moringaceae	*Moringa Oleifera* Lam.	Shital chini	Sajiwan	Tree	Cultivated	High blood pressure, blood purification, liver diseases	Leaf, Fruit	Powder
Myricaceae	*Myrica esculenta* Buch.-Ham. ex D. Don	Kafal	Ban Kaphal	Tree	Wild	Asthma, gastritis, anthelmintic, aigh blood pressure	Fruit, chewable bark	Chewing
Myrtaceae	*Psidium guajava* L.	Basa	Belauti	Tree	Cultivated	Diarrhea, ulcer, gastritis, nausea, toothache	Bark, Fruit, Young leaf	Juice, Decoction
Nephrolepidaceae	*Nephrolepis cordifolia* (L.) C. Presl	Naisu	Pani amala	Fern	Wild	jaundice, blood pressure, indigestion	Fruit	Chewing
Oleaceae	*Nyctanthes arbor-tristis* L.	Shringar	Parijat	Tree	Cultivated	Cough, fever, asthma	Leaf, Bark,	Decoction

Family	Botanicalname, Voucher no.	Name in DURA language	Local name	Habit	Type	Ailments	Parts used	Drug forms
		phul					Flower	
Oxalidaceae	*Oxalis corniculata* L. Ga21	Amilo jhar	Chari amilo	Herb	Wild	Fever, common cold, gastritis, blood purification	Whole plant	Chewing, Juice
Phyllanthaceae	*Phyllanthus emblica* L.	Kon	Amala	Tree	Cultivated	Gastritis, diarrhea, common cold, hair fall, abdominal bloating	Root, Leaf, fruit, Bark	Chewing, juice, decoction
Piperaceae	*Piper longum* L.	Gumthi	Pipla	Climber	Wild	Gastritis, common cold, fever, diabetes	Fruit, Root	Powder
	Piper Nigrum L.	Marich	Gol marich	Climber	Cultivated	Asthma, headache, stomach pain	Seed	Decoction
Poaceae	*Cynodon dactylon* (L.) Pers. Ga 20	Dubo	Dubo	Herb	Wild	Burn, cuts, wounds, scabies, vitiligo	Whole plant	Paste, Juice
Polypodiaceae	*Drynaria quercifolia* (L.) J. Sm. Ga 19	Kamari	Kammari	Fern	Wild	Fracture, Joints pain, Sprain	rhizome, Sap	Apply paste
Rosaceae	*Rubus ellipticus* Sm.	Tanchi	Ainselu	Shrub	Wild	Anaemia, indigestion, low blood pressure, cough	Fruit, Root	Chewing
Rubiaceae	*Mussaenda macrophylla* Wall.	Dhobeni	Dhobeni	Shrub	Wild	Indigestion, gastritis	Root	Juice
Rutaceae	*Aegle marmelos* (L.) Correa. Ga 15	Bel	Bel	Tree	Wild	Diabetes, gastritis, loss of appetite	Leaf, Bark, Fruit	Decoction
	Citrus aurantiifolia (Christm.) Swingle	Gam	Kagati	Tree	Cultivated	Gastritis, jaundice, blood purification	Fruit	Juice
	Zanthoxylum armatum DC.	Promu	Timur	Shrub	Cultivated	Gastritis, fever, dysentery, toothache, common cold, sinusitis	Fruit	Juice, Decoction, Paste
Saxifragaceae	*Bergenia cilliata* (Haw.) Sternb.	Pakhanbed	Pakhanved	Herb	Cultivated	Cuts, wounds, fever, piles, heart diseases	Leaf, Flower, Root	Paste, Decoction
Sinopteridaceae	*Cheilanthes dalhousiae* Hook. Ga 18	Kali singa	Rani sinka	Herb	Wild	Ulcer, gastritis	Frond	Juice
Solanaceae	*Datura stramonium* L. Ga 16	Dhaturo	Dhaturo	Herb	Cultivated	Cough, gout, asthma, rheumatoid arthritis	Seed, Leaf	Powder
	Nicotiana tabacum L.	Surti	Kacho paat	Herb	Cultivated	Wounds	Leaf	Paste
						Anthelmintic in cattle		Juice
Urticaceae	*Urtica dioica* L. Ga 17	Koke	Sisno	Shrub	Wild	Jaundice, diabetes	Young leaf, Root	Juice, Paste, Decoction
Zingiberaceae	*Curcumal Longa* L.	Ghodzu	Haledo	Herb	Cultivated	Common cold, fever, furuncle	Rhizome	Decoction, paste
	Elettaria cardamomum (L.) Malton	Alaichi	Alaichi	Herb	Cultivated	Snake bite, cough and cold	Fruit	Apply paste, Chewing