Ethnobotanical Study of Medicinal Plants in Selected Horro Gudurru Woredas, Western Ethiopia

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Abstract

Background: Plant remedies are still the most important therapeutics to treat diseases in Ethiopia although large knowledge of ethno medicinal plants is declining to deterioration due to the oral passage of herbal heritage verbally. The objective of the study was to identify and document ethno-veterinary medicinal plants. Methods: The study was carried out from January to August 2014. The study sites were selected purposefully based on the recommendations of elders and local authorities. Ethno-botanical data were collected using semi-structured interviews, field observations and group discussion. About 56 study participants were involved in this study during the study period. Results: A total of 81 major considerable medicinal plant species belonging to 43 families were documented with details on their local name, family, habit and their traditional preparation, mode of application. Asteraceae family was constituted the highest proportion (11.6%) followed by Solanaceae (9.60%). The informants were reported as rabies and wound are the most commonly treated diseases by traditional healers. Herbs (46.4%) followed by shrubs (28.6%) and tree (25%). Oral route of administration (57.1%) was the most commonly used followed by topical (33.9%). About 75.8% of the plant taxa were available every time. Agricultural expansion (20.0%) has been found to be the first main threat followed by deforestation (4.20%). Agricultural expansion was the most common medicinal plants threats (47.7%) followed by deforestation (32.7 %). Conclusion: The study revealed that the traditional health practitioners were with a good of knowledge of medicinal plants used to treat different diseases. Hence, further research should be conducted to evaluate the efficacy and possible toxicity of the plants in the study area.

Keywords: Disease, Horro Guduru Wollega, Human, Medicinal plants

Background

In Ethiopia, plant remedies are still the most important and sometimes the only sources of therapeutics for nearly 80% of human and more than 90% in livestock population. Estimated floras of 6500 to 7000 species of higher plants are of medically important and out of these medicinal plants 12% are endemic to Ethiopia (Mengistu, 2004). The traditional knowledge in Ethiopia is passed verbally from generation to generation and valuable information can be lost whenever a traditional medical practitioner passes without conveying his traditional medicinal plants knowledge (Pankhurst *et al.*, 2001). In addition, the loss of valuable medicinal plants due to population pressure, agricultural expansion and deforestation is widely reported by different workers (Abebe, 2001; Berhan and Dessie, 2002). As a result, the need to perform ethnobotanical researches and to document the medicinal plants and the associated indigenous knowledge must be an urgent task (Pankhurst, 2001; Hamilton, 2003).

The majority of the population that lives in the rural and the poor people in urban areas rely mainly on traditional medicines to meet their primary health care needs. However, the traditional knowledge of medicinal plant in Ethiopia is not compiled (Giday *et al.*, 2003; Sori *et al.*, 2004). 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 healthcare and drug development in the present and future (Tamiru *et al.*, 2013). The studies conducted on the traditional medicinal plants in Ethiopia are very limited when compared with the multiethnic cultural diversity and the diverse flora of Ethiopia (Giday *et al.*, 2009). Even though traditional knowledge of medicinal plants is very crucial to treat different diseases, there is no study conducted in Horro Guduru Wollega Zone of western Ethiopia on this regard. Hence, the present study was designed to identify and document medicinal plant species and traditional medicinal knowledge of the traditional health practitioners in study area.

Materials and Methods

Study Area

The study was conducted from April to August 2014 at selected Horro Guduru Woredas (Jarte Jardega, Jimma Geneti, Horro woreda, Abay Chomen and Ababo Guduru) in Oromia regional state of Western Ethiopia. The study sites were selected based on the availability of practice of traditional medicine and on the

recommendations of knowledgeable elders and local authorities. Moreover; the agro-climatic zones was considered to select the study Woredas and kebeles purposely. The zone is found about 251 Km from West of Addis Ababa. The study area is located at an elevation of 2,088 m above sea level. The annual minimum and maximum temperature is 15-27°C and the annual average rainfall is 1800 mm (Horro Gudurru District., 2013). The rural and peri-urban areas of the zone are featured by mixed agricultural system where livestock play an important role. The vegetation of the area is dominated by xerophylic plants. There are no adequate veterinary services in case of drug availability, only some broad spectrum drugs were offered.

Study Population

The target populations were voluntary traditional health practitioners. The survey was conducted through questioner surveys designed for farmer particularly knowledgeable elders and traditional healers.

Data Collection

An ethno botanical survey was conducted to gather information on the traditional usage of plants in health care system using a semi-structured interview, observations and field guided walks (Martin, 1995) traditional healers who were willingness to share their indigenous knowledge. A total of 56 individuals were purposively selected and interviewed based on their knowledge on traditional medicine. Interviews and discussions were undertaken based on checklist of questions prepared in English and translated to 'Afan Oromo'. Information was carefully recorded during an interview with an informant as well the knowledge of vegetation categorization was asked and recorded. Field observations were performed with the help of local guides on the morphological features and habitats of each medicinal plant species in the field. Discussions were conducted on threats to medicinal plants, conservation of the medicinal plants and transferability of knowledge in the community. Before collecting the data, written permission was secured from the office of the District and permission was obtained from the administrator of each selected Kebele. Following this, the purpose of the study was explained to each informant and verbal prior consent was obtained. During the study period, each informant was visited two to three times in order to confirm the reliability of the ethnobotanical information. The responses that were not in harmony with each other were rejected.

Plant Specimen Collection and Identification

The reported medicinal plants were collected from natural vegetation and home gardens during the field walks and habits of the plants were listed. Preliminary identification was done at the site (field) and the collected voucher specimens were taken to the National Herbarium of Ethiopia (Addis Ababa University). Specimen identification and confirmation was undertaken by using taxonomic keys and various volumes of the Flora of Ethiopia and Eritrea (Edwards *et al., 2000*; Hedberg *et al., 2006*). Finally, the identified specimens were reconfirmed by a taxonomic expert and the specimens with their label stored at the National Herbarium.

Data Analysis

The collected ethnobotanical data were entered into Excel spreadsheet 2007 and summarized using descriptive statistical methods such as frequency and percentages.

Results

General Characteristic of the Informants

In this study, a total of 81 major considerable medicinal plant species and 43 plant families were identified and documented during the period in the study areas. Many knowledgeable local farmers 86 (71.7%) and traditional healers 34 (28.3%) and were participated during the study period. Almost all of the respondents were elder age groups (92.0%) and younger age groups (8%) respectively (Table1).

Sources and Habit of Medicinal Plants

The medicinal plant data collected from the study site revealed that most of the medicinal plants were collected from the wild (65.8%) followed by from home gardens (27.5%) and both (6.70%) respectively (Table 1). In addition, the most indicated habit of the medicinal plants was herbs (46.4%) followed by shrubs (28.6%) and tree (25%) (Table 4).

Medicinal plant parts used for the preparation of the remedies

The study showed that the widely used plant part for the preparation of the remedies in the study area was leaves (51.8%) and followed by seed and fruits (21.4%) and roots (19.6%) (Table 3).

Mode of preparation and Route

The study revealed that the highest mode of preparation was in the form of grinding (73.7%); followed by

crushing (17%) and others like chopping, decoction, roasting, consumption of whole plant part, streaking (9.30%). The majority of the plant remedies were prepared from fresh material of the plants which accounted for (87%) followed by fresh/dry (13%) (Table 2). The most widely used route of administration was oral which accounted (57.1%) followed by topical (33.9%) and inhalation (8.93%) (Table 4).

Availability and Medicinal plant families frequently used

The survey was indicated medicinal plants were affected by season; many of the plants were available every time (75.8%), some are found seasonally (20.0%), and the rest, difficult to get it (4.20%) as described in the study area (Table 5). *Asteraceae* family was constituted the highest proportion (11.6%) followed by *Solanaceae* (9.60%) (Table 3).

Knowledge Transfer of Medicinal plants

According to the survey, knowledge transfer of medicinal plants follows vertical transfer to the most selected family member orally with great secrecy. The highest number of transfer of knowledge about the plant is to trusted eldest son that accounted for (60.1%) followed by trusted sons (20.4%), and others are all members of the family (8.5%), relatives (7%) and friends (4%). The findings of the study showed that as people become older and older their knowledge of traditional medicine becomes better and better. Most of the informants were elders that indicated the trend of transferring knowledge is usually at old age. The study also indicated that there is no widely observed trade of medicinal plants in the study area though some practitioners and women sell some medicinal plants in the market and in their homes. Some of the plant medicines that grow in home gardens and sold were *Olea europaea*, *Nicotiana tabacum*, *Capsicum annum*, *Coffea arabica*, *Justicia- schimperiana* and *Ricinus- communis*.

Conservation and Threats of Medicinal Plants

The study indicated that many of the informants who have knowledge on traditional medicine usage give priority to the immediate use of the medicinal plants than to its sustainable future uses, as a result their harvesting style is destructive. However, some plants has protected for their spiritual and cultural purposes. Thus, these places are good sites for the protection of the medicinal plants since cutting and harvesting are not allowed in such particular areas. This was indicated that a good practice for the conservation of medicinal plants through cultivation. The study revealed that there were a number of threats that affect the medicinal plants in the study area. The threats include agricultural expansion (47.7%) followed by deforestation (32.7%) and overgrazing (12.1%) (Table 6).

Preference Paired Comparison

A paired comparison was made for four medicinal plants which were used to treat rabies in the study area. For this, 25 key informants were requested to give rank to plant taxa according to their effectiveness. Accordingly, *Ricinus communis* stood first and followed by *Clucia lanceolata* (Table 7).

Discussion

In this study, a total of 81 major considerable medicinal plant species belonging to 43 families were identified and documented in the study area during the study period. The study was indicated that the majority of the traditional healers were elder age groups (92%). In comparison of educational status, non-educated informants handled much knowledge of traditional medicine whereas educated informants had low knowledge of traditional medicine, which is an indicative of impact of modern education. This was in line with report of Yirga *et al.* (2012a, b; Yigezu *et al.*, 2014) from Jimma. The findings was also agrees with reports of Tamiru *et al.* (2013) from Dabo Hana District, West Ethiopia and Gebrezgabiher *et al.*(2013) from Tigray region. Less medicinal knowledge in relation to young age might be attributed to the fact that traditional knowledge is built with years of experience (Awas, 2007). This might be also due to the transfer knowledge of medicinal plants follows vertical transfers to the most selected family member orally with great secrete from generation to generation. Moreover, transferring the knowledge of medicinal plants is usually at old age.

In the present study, Asteraceae family was constituted the highest proportion (11.6%) followed by *Solanaceae* (9.60%). The finding was in line with other findings that were conducted in different parts of Ethiopia (Gebre, 2005; Tolesa, 2007; Teklehaymanot *et al.*, 2009; Gebrezgabiher *et al.*, 2013; Lulekal *et al.*, 2014). The medicinal plant species recorded in the zone are also used as remedies in other parts of Ethiopia and Africa (Mesfin *et al.*, 2009; Raj Luitel *et al.*, 2014).

The finding was revealed that the majority of the traditional healers in the study area relies on traditional knowledge, practices and locally available materials (Giday and Ameni, 2003) primarily medicinal plants to cure and prevent different diseases such as wound, rabies, abdominal pain, bleeding, , leech infestation, skin diseases, lice infestation, ring worm and gastro intestinal parasites. This indicated that herbaceous medicinal

plants were the widely used for the treatment of various diseases. The finding agrees with studies in other parts of Ethiopia (Tessema *et al.*, 2001; Giday and Ameni, 2003; Sori *et al.*, 2004; Teklehymanot and Giday, 2007).

In this study, most of the medicinal plants were collected from the wild (65.8%) and others were from home gardens (27.5%) and both (6.70%). This was in line with studies in other parts of Ethiopia (Giday *et al.*, 2009), Pakistan (Farooq *et al.*, 2008) and Brazil (Barboza *et al.*, 2007; Monteiro *et al.*, 2011). This indicated that the practice of cultivation of medicine plants for their medicinal purpose in home gardens of most of the country is low although many plants are cultivated for other purposes, mainly for food. In a similar way people in the study area have less effort to cultivate medicinal plants in their home gardens rather go to the nearby or far places and harvest the plants. In addition, the habit of the medicinal plants indicated that most of them were herbs (46.4%) followed by shrubs (28.6%) and tree (25%). The knowledge about the type, part used, dosage, administration of the medicinal plants is circulating only among traditional practitioners of traditional medicine based on the severity of diseases (Tadesse, 1986; Hailemariam *et al.*, 2009; Yigezu *et al.*, 2014).

In the current, different forms of preparations are investigated; some of them are homogenizing in water, butter and local alcohol. Grinding crushing, pounding, decoction and concoction but homogenizing in water takes the lead (Balemie *et al.*, 2004). A similar study showed that different preparations and application methods of medicinal plants were mentioned for internal and external use (Scherrer *et al.*, 2005) in which water is mostly used to dilute plant preparations while some remedies are prepared from dry and fresh plant parts (Giday *et al.*, 2003).

In the present study, all plant growth forms were not equally used as remedies, because of the difference in distribution among the growth forms. This leads to the wide use of herbs and shrub for their medicine. The part of the medicinal plant which is highly used for the preparation of the remedies were leaves (51.8%) followed by seed and fruit (21.4%). This agrees with the reports of Giday *et al.* (2003) and Mesfin (2007). Based on the information gathered from the key informants especially from those who are highly accepted by the society for their ability in healing different health problems, the condition of preparation of remedies was not the same. The highest condition of preparation was fresh (87%) followed by fresh/dry (13%). In contrast to this, some professional traditional healers sell their plant medicines in dried form in the market and also store the dried plant medicines in different containers in their homes. This agrees with another findings conducted at Tigray region (Gebrezgabiher *et al.*, 2013).

The study also showed that the information gathered from the key informants especially from those who are highly accepted by the society, most of the plant remedies were administered orally (57.1%) followed by topical (33.9%) and inhalation (8.93%). The result agrees with similar studies elsewhere in Ethiopia (Abebe and Ayehu, 1993; Teklehaymanot and Giday, 2007). But, the dosage determination was the big problem in the study area because there is no standardized known unit of measurements of the plant remedies. However, the dose was determined by using homemade remedies using cup, glass, plant parts like number of bulbs and number of seeds and their own hand as handful were the identified means to treat animals in the study area. The dosage regime is generally dependent on the age, sex, weight and degree of the diseases. This agrees with report of ethno-medicinal plant knowledge and practice by Yineger *et al.* (2008) from Jimma; Abera (2014) from Gimbi district, Southwestern Ethiopia and Hailemariam *et al.* (2009) from lowlands of Konta Special Woreda, SNNP regional state, Ethiopia.

In this study, the information gathered from the key informants was indicated that the treats of medicinal plants increase from time to time in study area. The agricultural expansion was the major medicinal plant treats (47.7%) followed by deforestation (32.7%). The finding was in line with other findings (Giday *et al.*, 2001; Mesfin *et al.*, 2009). This might be due to continuous agricultural expansions, deforestation and draught in addition to lack attention towards the medicinal plants. The plants are disappeared because of rapid socioeconomic, environmental and technological changes and as a result of the loss of cultural heritage under the guise of civilization (Lulekal *et al.*, 2008; Khan *et al.*, 2012).

The traditional medicinal use of some surveyed medicinal plants are recorded in other parts of the country Hussan *et al.* (2013) from Pakistan and Luitel *et al.* (2013) from the Makawanpur district of central Nepal. *Hagenia abyssinica* is used to treat Taneasis in human in Bale, Debark and Kofle rural communities of Ethiopia (Assefa *et al.*, 2010). Similarly, its use for treatment of livestock ailments have been also documented (Mesfin and Obsa, 1994; Abebe *et al.*, 2000; Wondimu *et al.*, 2007; Yineger *et al.*, 2007). The therapeutic value of *Achyranthes aspera* is known for skin diseases (Goyal *et al.*, 2007) and various gastrointestinal and respiratory problems (Bhandari, 1990). The medicinal use of *Azadirachta indica* to treat endoparasites and ectoparasites is also documented by Sori *et al.* (2004) in the Borena pastoralists, southern Ethiopia. Moreover, the efficacy of leaves of *Azadirachta indica* to reduce the parasitic load (Khan, 2009) and that of the Aloe species in treating *Trychostogylus* in sheep (Ibrahim, 1986) has also been confirmed. The study depicted that the traditional healers and local farmers have rich knowledge about medicinal plants to treat themselves through indigenous knowledge to prevent and control the health problems.

Conclusion

Generally, 81 major considerable species and 43 families of medicinal plants was identified and documented during the study period in the study area. There was large number of valuable resources, practices and knowledge of medicine which can solve problems of shortage of drugs at rural areas as well as drug resistance in different diseases. The plants were mainly collected from the wild by consultation of traditional healers. Agricultural expansion and deforestation were found to be the main threats for the medicinal plants. Thus, attention should be given towards the medicinal plants and research should be needed to determine safety, toxicity and dosage.

Competing Interests

All authors have declared that no competing interests exist

Authors' contributions

TB: Conception of the research idea, designing and data collection, data analysis and interpretation, and manuscript reviewing. DA: Data collection, interpretation of the results, and drafting the manuscript. (EE): Data collection, interpretation of the results and drafting the manuscript with TB. All authors read and approved the final manuscript.

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Table 1. List of medicinal plants used for treatment of human diseases: scientific name; family name; local name; habits; plant parts used; other uses, route of administration and indications

Scientific name	Family name	Local name	Habit	Part	Other uses	Routes	Indications
Achvranthes aspera	Amaranthaceae	Maxxannee	Herb	Root	Fence	Oral	Wound
Rumex nepalensis Spreng	Polvgonaceae	Timijiji	Herb	Root	-	Oral	Gastritis, Spider poison
Stereospermum	Bignoniaceae	Botoroo	tree	Leaf		Oral,	'Kaashmeer', Evil eye
kunthianum Cham	0					Inhalation	, <u>,</u>
Allium sativum	Alliaceae	Qullubbii adii	Herb	Bark	Food	Oral	Abdominal pain,
Brassica carinata	Brassicaceae	Gomenzeera	Herb	Seed	Food	Oral	Wound
Brucea-	Simaroubaceae	Qomonyoo	Herb	Fruit		Oral	Rabies, ring worms
anti dysentrica					_		
Calpurnia aurea	Fabaceae	Ceekkataa	Shrub	Leaf	Fence	Topical	Lice infestation, leech
Malva verticillata L.	Malvaceae	Karfichoo	Herb	Leat	Inhalation	Tenierl	Fibril illness ('Mich')
Kalanchoe laciniata L	Crassulaceae	Bosoqqee	Herb	Root	- Eaad	Oral	wound Costritio
Horaeum vulgare L. Linum usitatissimum I	Linaceae	Talbaa	Herb	Seed	Food	Topical Oral	Dandruff Gastritis
Guizotia abyssinica I	Asteraceae	Nungii	Herh	Seed	Food	Topical	Swelling Mada gatetti
Cucurbita pepo L	Cucurbitaceae	Buagee	Herb	Seed	Food	Oral	Tape worm
Verbascum sinaiticum	Scrophulariaceae	Gurra harree	Herb	Leaf	-	Topical	External parasites
Benth	Ser oprimier neede	Guild harree	11010	Loui		ropiour	Enternal parasites
Rhus ruspolii	Anacardaceae	Xaaxessaa	Tree	Leaf	-	Topical	Ectoparasites
Guizotia scabra	Asteraceae	Tuufoo	Herb	Leaf	-	Topical	Ectoparasites, insecticide
Colocasia esculenta	Araceae	Goodarree	Herb	Leaf	-	Oral	Delayed placenta
Acanthus polystachius	Achantaceae	Kosorruu	Shrub	Leaf	-	Topical	Wound
Delile Vimenia americana I	Olacacaaa	Hudbaa	Shrub	Leaf		Oral	Monstruction
Vigna varillata I A Pich	Eabaceae	Gurra hantuutaa	Horb	Leaf	-	Topical	Spider poison
Vigna Vexiliala L. A. Kich. Vernonia auriculifera	Asteraceae	Reeiii	Shruh	Leaf		Topical	Dermatitis
Hiern	nsier weene	Reejii	Silluo	Lear		ropical	Demantis
Stephania abyssinica	Mensipermaceae	Hidda kalaalaa	Herb	Whole		Oral	Common cold
Schinus molle L.	Anacardaceae	Qundoobarbaree	Tree	Seed	Food	Oral	Tonsilitis, Abdominal
Denne dennisione Incom	D. I	Dhamaaaaa	IIl.	Leef		Tenierl	pain Shin infortion
Rumex abyssinicus Jacq	Polygonaceae	Diangaggoo	Chruh	Deat	Easd	Oral	Skin infection
riectraninus eautis	solanaceae	oromoo	Shiub	ROOL	rood	Olai	Loss of appente
Lippia javanica	Verbenaceae	Kusaye	Shrub	Leaf	Fence	Inhalation	Insect repellent
Lenidium sativum I	Brassicaceae	Fexo	Herh	Seed	Food	Inhalation	'Mich'
Maesa lanceolata Forssk	Mvrsinaceae	Abavi	Tree	Fruit	1000	Smoking	Insecticide
Brassica nigra L. Koch	Brassicaceae	Sanafica	Herb	Seed	Food	Oral	Common Cold, colic
Maytenus senegalensis	Celastraceae	Kombolcha	Tree	Leaf	Fence	Topical	Eye infection
Ensete ventricossum	Musaceae	Baala warqee	Herb	Leaf	For bread baker	Oral	Abdominal pain
Cheesman Eahinana hianidua Europan	1	Vaharahaa	Hark	Doulr		Inholotion	Evil ava
Condia africana Lam	Asteraceae Poraginaceae	Waddaassa	Trac	Loof	- Eanaa	Innalation	Evil eye Spider poison
Corcinia abvssinica	Cucurhitaceae	Ancootee	Herh	Root	Food	Oral	Tuberculosis Fracture
Clausena anisata (Wild.)	Rutaceae	Ulmaavii	Tree	Leaf	Tooth cleaner	Topical	Snake bite. Ectoparasite
Benth		o					,p
Rhamnus prinoides L Herit.	Rhamnaceae	Geeshoo	Shrub	Leaf	Food	Oral	Tonsilitis
Girardinia bullosa (Steud) Wedd	Urticaceae	Gurgubbee	Shrub	Root	-	Oral	Blackleg
Capsicum annum	Solanaceceae	Mimmixa	Herb	Seed	Food	Oral	Abdominal pain leech,
Chusia lanssolata	Euchenhinsen	Illaa faanii	Chaul	Deet	Eanaa	Oral	Tapeworm
Coffea Arabica	Rubiaceae	Buna	Shrub	Seed	Food	Topical	Wound abdominal pain
Croton- macrostachyus	Funhorhiaceae	Bakkanniisa	Tree	Leaf	Shed fire wood	Oral/tonical	Ringworm wound
Grewia hicolar	Tliaceae	Harooressa	Tree	Bark	Fence	Oral	Retained fetal membrane
Justicia schimperiana	Acanthaceae	Dhummugaa	Shrub	Root/Leaf	Fence	Oral	Rabies, headache
Nicotiana tabacum	Solanaceae	Tamboo	Shrub	Leaf	stimulant	Oral	Leech, Tape worm,
Prunus africana	Rosaceae	Hoomii	Tree	Bark	Shed furniture	Topical	Wound
Phytolacea- dodecandra	Phytolacaceae	Handoodee	Herh	Leaf	Detergent	Topical	Wound
Ricinus- communis	Euphorbiaceae	Qobboo	Shrub	Leaf,	Shed, Food	Oral	Rabies, Liver disease
	-	-		Root			
Vernonia anygdalina	Asteraceae	Eebicha	Tree	Leaf	Fence, Fire wood	Oral	Increase milk Production, Retained placental
Zingiber officinale	Zingebiraceae	Jinjibila	Herb	Root	Food	Oral	Rabies, Abdominal pain,
Olea europaea	Oleaceae	Ejersa	Tree	Leaf	Fire wood,	Inhalation	Rabies, snake bite
Cucumis ficifolius	Cucurbitaceae	Hiddi hooloto	Shrub	Root	-	Oral	Rabies
Solanum gigantum Jaca.	Solanaceae	Hiddii saree	Herb	Root	-	Oral	Rabies
Dodonaea angustifolia	Sapindaceae	Itacha	Shrub	Leaf	Fence	Topical	Lice infestation
Citrus aurantifolia	Rutaceae	Lommi	Shrub	Fruit	Food	Topical	antiemetic, wound
Carica papaya L.	Caricaceae	Paappaayyaa	Tree	Fruit	Food	Oral	Anti malaria
Catha edulis	Celastraceae	Caatii	Shrub	Leaf	Stimulant	Oral	Cough Endoparasite

Table 2. List of medicinal plants used for treatment of human diseases: scientific name, family name, local name, route of administration; methods of preparation and application, and solvent mixed with.

Scientific name Family name Local name Routes Preparation and Indication

oral Commercipue podemcisus, mixed with water (Furnely of wound, durine). Ramea: repolensis Polygonaccee Timijii Oral For root cheved and resultowed (Gastrio, Fach lawes crushed and mode of horizon the polymonia control of horizon the polymonia controot the polymonia controot the polymonia control of	.Achvranthes	aspera	Amaranthaceae	Maxxannee	Topical and	The fresh root is chopped and bounded together with a leaf of
JamesPolygonocooTimujiOralFee root cheed and scaling-ed (Gastra). Fresh laves cambed and mind with Laves of Acardise polytochine by missing with butter careend on alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter careend with alfeed pair (Spinchine by missing with butter (Spinchine by missing with butter (Spinchine by missing with butter					oral	<i>Commicarpus podunculosus</i> , mixed with water. The leaves are also crushed and mixed with water (for remedy of wound, diarrhea)
Price Price <th< td=""><td>Rumex Spreng</td><td>nepalensis</td><td>Polygonaceae</td><td>Timijjii</td><td>Oral</td><td>Few root chewed and swallowed (Gastric), Fresh leaves crushed and mixed with Leaves of <i>Acanthus</i> polystachius by mixing with butter creamed on affected part (Spider</td></th<>	Rumex Spreng	nepalensis	Polygonaceae	Timijjii	Oral	Few root chewed and swallowed (Gastric), Fresh leaves crushed and mixed with Leaves of <i>Acanthus</i> polystachius by mixing with butter creamed on affected part (Spider
kankhamum Cham Inhikition Croiss macroscopys, Root of Cacuum's perioden softward path of Allian sativum Allian sativum Alliaccae Quilubbi adii Oral The hole specific path hole and back path on the path on the and back path path on the and back path path on the and back path path path path path path path path	Stereospermu	m	Bignoniaceae	Botoroo	Oral,	poison) Fresh/Dried bark of <i>Stereospermum kunthianum Cham.</i> , bark of
Alline suftrum Allaceae Quilubin adiu Oral The bulb bace with "injen" before earlied and mixed with water then druck (common (common construction) Bransic carringta Dressistenceae Gononycoo Oral Dreid seed Providered and mixed with water then druck (common construction) Bransic carringta Foreace Qononycoo Oral Creations Calpurnia carea Foreace Carkinoo Laves coded and the sense inhaled to get relief from "Mich (Fibri illness) Kalanchoe laciniata L Crassulaceae Bosoogee Topical Frain and intoxi of Kalanchoe laciniata, seed of Carkinoo providered topical (Skin Daceae) Hordeum vulgare L Poaceae Garbua Oral Scad of Hordeum vulgare powdered with seed of Immunok (Beck pain) Linum usintristimm L Linaceae Tabaa Topical The hair washed by yseeds of Linum usintristimum and used as seep topical (Fish corested provider and mixed with water given only) (Cwound) Carcurbingtaper L Cocarbingcoae Carcurbingcoae Carcurbingcoae Carcurbingcoae Rus rupolit Anceracee Topical The hair subace of Linum using siminum and used as seep topical (Fish laces) cortexed and mixed with water given only (Cwound) Carusotha spokytacha	kunthianum C	Tham	-		Inhalation	Croton macrostachyus, Root of Cucumis ficifolius, bulb of Allium sativum L. and seed of Capsicum frutescens powdered together and half of a bottle given for three days. Dried bark put on fire and the smoke inhaled (Evil eve)
Brassica carinata Brassicari carinata Brassicari carinata	Allium sativur	m	Alliaceae	Qullubbii adii	Oral	The bulb taken with 'injera' before eating breakfast (Abdominal pain, Anti-malaria).
Bracen- anti dynatrica Sumarohaceae Qenomyon Oral Fresh leaves cansbed and mixed with hording and given for Acarias Calgarnia aurea Fabaceae Ceekkata Topical'ness Fresh leaves soaked in water applied bynally Leaves cooked and the smoke inhaled to get relief from 'Mich (Fibril aurea) Mahav vritilithat L. Mahavese Karfichoo Topical Kalanchoe lacinithat L. Crassultaceae Bosoqpe Topical Topical Inordium vulgare L. Poaceae Garbua Oral Seed Of Indue unitation inted with water given topical (Skin Diseases). Linum usitatissimum L. Linuceae Tabba Topical Topical The water dynatic down to the seases of Linum usitatissimum and uncel as sop Diseases Caurabia abystica L. Asteraceae Nungi Topical The sin water dynatic do in thater and eartin (Page worn) Caurabia apps. Anacardaceae Nungi Topical Fresh leaves or Caurabia and the dynatic dia buter and eartin (Page worn) Caurabia apps. Asteraceae Topical Fresh leaves crashed and mixed with water and the dynatic dia with water and the dynatic dia water applie dynatic dia water applie dynatic dia water dynater and water applie dynatic dia water dynate dynatic dia water dynate dynat dynater an	Brassica carin	nata	Brassicaceae	Gomenzeera	Oral	Dried seed Powdered and mixed with water then drunk (Common Cold)
Calpurnia aurea Fabaccae Ceckkata Topical ross Fresh leaves soaked in water application space in water application space in water application space in water application space in the service inhaled to get relief from 'Mich (Fibri Jinness). Kalanchoe lacinitat L Mahaccae Karfichoo Leaves cocked and the smoke inhaled to get relief from 'Mich (Fibri Jinness). Kalanchoe lacinitat L Crassulaceae Bosospee Topical Fresh or find root of Kalanchoe lacinitata, seed of Capaciem powdered vise provident with water given topical (Skin Dacesci). Hordeum vulgare L Poaceae Garbuu Oral Bessistic artimati and drum (Hisker and et of or the speech or trans, words of Linum usitatistimum and used as soap (Danharfi, Gastritis). Guizota abyssinica L Asteraceae Naugii Topical The dried seed roastel powdered and mixed in water application and the speech or trans. (Nound) Guizota abyssinica L Asteraceae Tuufoo Topical The dried seed roastel powdered and mixed in water application and the see lacing and the see of Capacitam and the see of capacitam and used as soap (Capacitam speech and mixed with water and cube of affect application and the see and the see of capacitam and used as soap (Capacitam speech and mixed with water and cube of affect application and and the see and the see of Capacitam and the see and the see of capacitam and the see and the see of	Brucea- anti dysentrio	ca	Simaroubaceae	Qomonyoo	Oral	Fresh leaves crushed and mixed with Leaves of <i>Bersema abyssinica</i> <i>Fresh</i> and cooked With porridge and given for Ascaris
Maha verticilitata L. Mahaceae Karfichoo Leaves cocked and the smake inhaled to get relief from 'Mich (Fibril illness). Kalinchoe lacinitata L. Crassulaceae Bosoqee Topical Fresh or fried root of Kalinchoe lacinitata, seed of Capticam Diversity powdered together and mixed with water given topical (Skin Diversity). Hordeun vulgare I. Paaceae Garbuu Oral Seed of Hordeum vulgare powdered with seed of Brassica carnita and druk (Back pain) Linum usitatissimum I. Linucceae Talban Topical, The har washed by seeds of Linum usitatissimum and used as soap Oral (Dadutff, Gastrins). Guizolia abyssinica I. Asteraceae Buage Topical, The har washed by seeds of Linum usitatissimum and used as soap Oral. Guizolia abyssinica I. Asteraceae Buage Topical, The field seed crossital and the daten (Lipe worn) Ruis ruspolii Anacardaceae Tauloo Topical, The har washed by seeds of Linum usitatissimum and used as soap Oracea in a daten clipe worn only. Ruis ruspolii Anacardaceae Tauloo Topical, The har washed by and the daten (Lipe worn) Ruis ruspolii Anacardaceae Tauloo Topical, The har washed and nihed on affected part (Hyen bite). Colocaia scathra Asteraceae Goodarree Oral The trobe and mixed with water and rubbed on af	Calpurnia au	rea	Fabaceae	Ceekkataa	Topical/nose	Fresh leaves soaked in water applied topically (Lice infestation Leech)
Kalanchoe lacinitata L. Crassulaceae Besoppee Topical Fresh or dired root of Kalanchoe lacinitata, seed of Capsicom yowdered volted in sed or mana de laws of Croon macrostachyas powdered together and mixed with water given topical (Skin Diseases). Hordeum vulgare L. Poaceae Garbuu Oral Seed of Hordeum vulgare powdered with seed of Brassica criatata and druk (Back pain) Linum statutistimum L. Linaccae Talbaa Topical The hird washed by seeds of Linum usitatistimum and used as soap (Oral Carbicaeae Guizota abyssinca L. Asteraceae Nuugii Topical Fesh haves powdered and the decetton druk, (Wound) Currotin prop. Currotinizeae Guara harree Topical Fresh haves powdered and mixed in buter and exten (Tape worm) Verbascum sinalicum Schorineceae Taukoa Topical Fresh haves powdered and mixed in water the given orally. (Lice targe provide and mixed in water the given orally. Guizotia scabra Anacardaceae Topical Fresh haves of Guizotia scabra and with water given orally. Guizotia scabra Anacardaceae Kosorruu Topical Fresh haves of Guizotia scabra and with water given orally. Guizotia scabra Oral Topical Fresh haves of Guizotia scabra and beves of Cucina scabra and tabes of Cucina scabra and mixed with water given orally.	Malva verticil	llata L.	Malvaceae	Karfichoo		Leaves cooked and the smoke inhaled to get relief from 'Mich (Fibril illness)
Hordeum vulgare L. Poaceae Garbau Dessites). Linum usitatissimum L. Linaceae Taibaa Topical, Oral Topical, Seed of Hordeum vulgare powdered with seed of Brassica carinata and druk (Back pain) Guicria abyssinica L. Asternaceae Nuugii Topical, Oral Topical, Topical Guicria abyssinica L. Asternaceae Nuugii Topical, Oral Topical Guicria abyssinica L. Asternaceae Buqee Dopie Tresh leaves powdered and the decoction druk, (Wound) Colocatia seculation Serophuloritaceae Bace Dopie Tresh leaves providered and mixed in water them green orally. (Lice and flass infiscitap) Guizotia scabra Asteraceae Tuuloo Topical Fresh leaves of Guicatia scabra and leaves of Calpurnia aurea crushed an thebde (Insecticide). Guizotia scabra Astaraceae Goodarree Oral Tuber crushed and mixed with butter (Gastritis) Schott Acarthus polystachius Acharaceae Kosorruu Topical Fresh leaves crushed, mixed with water gree orally. Vigna vesillata L. J. Fabeceae Guira hartee Guico Crushing felolius in water and rubbed on affected part (Wound) Zipria vesillata L. J. Fabeceae Guira hartee Crushing felolius in water and rubbed on affected part (Wound) Zipria vesillata L. J. Fa	Kalanchoe lad	ciniata L	Crassulaceae	Bosoqqee	Topical	Fresh or dried root of <i>Kalanchoe laciniata</i> , seed of <i>Capsicum frutescens</i> , <i>Allium sativum</i> and leaves of <i>Croton macrostachyus</i> powdered together and mixed with water given topical (Skin
Linaccae Talbaa Topical, Oral Topical, Oral The har vascus of initia and (topic pairs). Guizotia abyssinica L Asteraceae Nugii Topical, Oral The har vascus of initia and (topic pairs). Guizotia abyssinica L Asteraceae Nugii Topical The har vascus of initiation (topic pairs). Guizotia abyssinica L Asteraceae Buqgee Oral The shar vascus of initiation (topic pairs). Guizotia scabra Anacardaceae Xaaxessaa Topical Presh leaves crushed and mixed with water given orally. Guizotia scabra Asteraceae Touloo Topical Presh leaves crushed, mixed with water given orally. Guizotia scabra Asteraceae Goodarree Oral Taber crushed and mixed with water given orally. Colocasia esculenta (L) Araceae Goodarree Oral Traber crushed, mixed with water and one cup of tea taken for 1-5 days unit the blood sing (Meestratic). Tigma verillata L A. Fabaceae Guira harae Topical Fresh leaves crushed and mixed with water and one cup of tea taken for 1-5 days unit the blood sing (Meestratic). Figen Asteraceae Regii Topical Topical Topical Fresh leaves crushed and mixed with water and	Hordeum vulg	gare L.	Poaceae	Garbuu	Oral	Diseases). Seed of Hordeum vulgare powdered with seed of
Guizotia absistiria L. Cucurbita pape L. Cucurbita pape L. Cucurbita pape L. ScraphulariaceaeNugii Topical BuqceSeed reasted poweler and the decection drumk (Wound) The drivid sed roasted mixed run anter then given orally (Lice and fleas infistation)Rhus ruspoliiAnacardaceaeXaaxessanTopicalFresh leaves poweler and mixed in water then given orally (Lice and fleas infistation)Guizotia scabraAsteraceaeTuufooTopicalFresh leaves curshed and mixed in water then given orally.Guizotia scabraAsteraceaeGoodarreeOralTuber crushed and mixed with water given orally.Colocasia esculenta (L.) Accantas polystachias AchantaceaeKosorruuTopicalFresh leaves of Matteria and rubbed on affected part (Wound)Winnia americana L.OlacaceaeHudhaaOralCrushed and mixed with water and rubbed on affected part (Byten hold).Yigna vexillata L. A. FabaceaeFabaceaeGuira hantutaaTopicalFresh leaves scrushed, mixed with water and rubbed on affected part (pider poison).Yigna vexillata L.AsteraceaeReejiiTopicalTopicalFresh leaves scrushed, mixed with water and rubbed on affected part (pider poison).Yigna vexillata L.AsteraceaeReejiiTopicalTopicalFresh leaves scrushed, mixed with water and rubbed on affected part (Spider Davis Scion).Yigna vexillata L.AsteraceaeReejiiTopicalTopicalTopicalYigna vexillata L.AsteraceaeReejiiTopicalTresh seed chewd and given sy water (Conson col).Yigna vexillata L	Linum usitatis	ssimum L.	Linaceae	Talbaa	Topical, Oral	The hair washed by seeds of Linum usitatissimum and used as soap (Dandruff Gastritis)
Cucurbitize gep L. Cucurbitizeenee Bugepe Oral The dried seed roasted mixed in butter and eaten (Tape worm) Verbascum sinitizum Scrophuluriacenee Gura harree Topical Fresh leaves powdered and mixed with water then given onally. (Lice and fleas infestation) Rhus ruspolit Anacardaceaee Xaaxessaa Topical Fresh leaves or Guizotta scabar and leaves of Calpurnia aurea crushed and rubbed on affected part (Hyenn bite), Root of Rhus ruspolit powdered and mixed with water given onally. Colocasia scalara Asteraceae Goodarree Oral Tuber crushed and mixed with water and nubbed on affected part (Wound) Colocasia sculenta L. Araceaae Goodarree Oral Teps leaves or Guizotta scalara and nubbed on affected part (Wound) Ximenia americana L. Olacaceae Hudhaa Oral Topical Fresh leaves or Guizotta scalara topica in the verse strashed and mixed with water and one cup of tea taken for 1-5 days mittil the blood stop (Menstruation) Yigna vecillata L. A. Fabaceae Reejii Topical Tresh ead d mixed in water then spieon and leaves with the vecing of Cacumis ficipilius in water and rubbed on affected part (Wound) Schuma abyssinica Asteraceae Reejii Topical Tresh ead d mixed with water and one cup of tea taken for 1-5 days mitit he blood stop (Menstruation)	Guizotia abys	sinica L.	Asteraceae	Nuugii	Topical	Seed roasted powdered and the decoction drunk, (Wound)
Perbascum Straphulariaceae Gura harree Topical Fresh leaves powdered and mixed in water then given onally (Lice and fleas infestation) Rhus ruspolit Anacardaceae Xaaxessaa Topical Fresh leaves powdered and mixed in water then given onally (Lice and fleas infestation) Guizotia scabra Asteraceae Tuufoo Topical Fresh leaves of Calpurnia aurea crushed and rubbed (Insecticide). Colocasia esculenta (L.) Araceae Goodarree Oral Tuber crushed, mixed with butter (Gastritis) Schott Acanthas polystachius Achantaceae Kosorruu Topical Fresh leaves crushed, mixed with water and rubbed on affected part (Wound) Viena vexillata L. A steraceae Gura hantuata Topical Leaves crushed and mixed with water and rubbed on affected part (Wound) Viena vexillata L. A steraceae Reejii Topical Leaves crushed and boid ot (Mastriatano) Vernonia auriculifera Asteraceae Reejii Topical Leaves smabled and the extracts forpped on the cut skin (Dermatitis). Brenha iad bissinica Anacardaceae Qundoobarbaree Oral Tresh leaves cheed with water and cubed on affected part (Spichik, Abdominal pain) <td< td=""><td>Cucurbita pep</td><td>00 L.</td><td>Cucurbitaceae</td><td>Buqqee</td><td>Oral</td><td>The dried seed roasted mixed in butter and eaten (Tape worm)</td></td<>	Cucurbita pep	00 L.	Cucurbitaceae	Buqqee	Oral	The dried seed roasted mixed in butter and eaten (Tape worm)
Rhus respolit Anacardaceae Xaxessaa Topical Fresh leaves crushed and rubbed on affected part (flyena bite). Root of Rins respolit powdered and mixed with water given only. Guizotia scabra Asteraceae Tuufoo Topical Fresh leaves of Cuizotia scabra and leaves of Calpurnia aurea crushed and rubbed (Insecticide). Colocasia esculenta (L.) Araceae Goodarree Oral Tuber crushed and mixed with water given only. Acanthus polystachus Achantaceae Kosorruu Topical Fresh leaves crushed, mixed with water and noe cup of tea taken for 1–5 days until the blood stop (Menstration) Yigna vexillata L. A. Fabaceae Gura hantuutaa Topical Fresh leaves crushed with water and noe cup of tea taken for 1–5 days until the blood stop (Menstration) Vernonia auriculifera Asteraceae Reejii Topical Fresh leaves smshed and the extracts dropped on the cut skin (Dermatitis). Schinus molle L. Anacardaceae Quidoobarbaree Oral The whole part is crushed and smsked in water then the smoke will be inhaled until the patient getting sweat (Common coid). Schinus molle L. Anacardaceae Dinnicha Oral Fresh leaves crushed and smsked in water then applied on affected part (Skin infection) Pletranthus edulis	Verbascum Benth	sinaiticum	Scrophulariaceae	Gurra harree	Topical	Fresh leaves powdered and mixed in water then given orally (Lice and fleas infestation)
Guizoia scabra Asteraceae Tuutoo Topical Fresh leaves of Guizoita scabra and leaves of Calpurnia aurea crushed and rubbed (inscrictide). Colocasia esculenta (L.) Araceae Goodarree Oral Tuber crushed and mixed with butter (Gastritis) Schott Acanthus polystachius Achantaceae Kosorruu Topical Fresh leaves crushed, mixed with water and rubbed on affected part (Wound) Ximenia americana L. Olacaceae Hudhaa Oral Crushed and mixed with water and one cup of tea taken for 1–5 days until the blood stop (Menstruation) Vigna vexillata L A. Fabaceae Guizoina and rubbed (nestruation) Leaves crushed and thized with water and rubbed on affected poison). Verenonia auriculifera Asteraceae Reejii Topical Fresh leaves smashed and the extracts dropped on the cut skin (Dermatitis). Stephonia dabyssinica Mensipermaceae Hidda kalaalaa Oral The vhole part is crushed and boiled in water then the smoke will be inhaled until the patient getting sweat (Common cold). Prestranthus edulis Solanaceae Dinnicha Oral Fresh leaves crushed and smashed in water then applied on affected part (Skin infection) Pletranthus edulis Solanaceae Dinnicha Oral Fresh leaves and and the extracts <	Rhus ruspolii		Anacardaceae	Xaaxessaa	Topical	Fresh leaves crushed and rubbed on affected part (Hyena bite), Root of <i>Rhus ruspolii</i> powdered and mixed with water given orally.
Colocasia esculenta (L.) Araccae Goodarree Oral Tuber crushed and mixed with butter (Gastrifis) Schott Acanthus polystachius Achantaceae Kosorruu Topical Fresh leaves crushed, mixed with water and rubbed on affected part (Wound) Ximenia americana L. Olacaceae Hudhaa Oral Crushed and mixed with water and one cup of tea taken for 1–5 days until the blood stop (Menstruation) Vigna vexillata L. A. Fabaceae Gura hantuutaa Topical Fresh leaves crushed with leaves of Cucumis ficifolius in water and rubbed on affected part (spider poison). Vernonia auriculifera Asteraceae Reejii Topical Tresh leaves smaled and the extracts dropped on the cut skin (Dermatitis). Stephania abyssinica Mensipermaceae Hidda kalaalaa Oral Topical Leaves crushed and smashed in water then the smoke will be inhaled until the patient getting sweat (Common cold). Peteranthus edulis Solanaceae Dinnicha Oral Root cocked with water and caten (Loss of appetite) Lepidi javanica Verbenaceae Kusaye Inhalation Fresh leaves crushed and smoked 'Mich' Maesa Jauceolata Myrsinaceae Abayi Topical Leaves crushed and inbude by mixing with water on the body (Ectoparasites).	Guizotia scab	ra	Asteraceae	Tuufoo	Topical	Fresh leaves of <i>Guizotia scabra</i> and leaves of <i>Calpurnia aurea</i> crushed and rubbed (Insecticide).
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Schinus molle L.AnacardaceaeQundoobarbareeOralFresh seed chewed and given by water (Tonsilitis, Abdominal pain) Leaves crushed and smashed in water then applied on affected part (Skin infection)Rumex abyssinicus JacqPolygonaceaeDinangagooTopicalLeaves crushed and smashed in water then applied on affected part (Skin infection)Plectranthus edulisSolanaceaeDinnicha 	Stephania aby	vssinica	Mensipermaceae	Hidda kalaalaa	Oral	The whole part is crushed and boiled in water then the smoke will be inhaled until the patient getting sweat (Common cold).
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Plectranthus edulis Solanaceae Dinnicha Oral Root cooked with water and eaten (Loss of appetite) Lippia javanica Verbenaceae Kusaye Inhalation Fresh leaves chewed with butter (Chest pain, Cough). Lepidium sativum L. Brassicaceae Fexo Inhalation Seed crushed and smoked 'Mich' Maesa lanceolata Myrsinaceae Abayi Topical Fresh leaves crushed and rubbed by mixing with water on the body (Ectoparasites). Brassica nigra L. Koch Brassicaceae Sanafica Topical Seed crushed and its juice applied topically (Wound) Ensete ventricossum Musaceae Baala warqee Oral The latex half cup of tea taken to get relief from stomach ache (Abdominal pain) Cordia africana Lam. Boraginaceae Waddeessa Tropical Leaves crushed together with feces of goat then put on fire the ash mixed with butter and creamed on affected part (Spider poison) Coccinia abyssinica Cucurbitaceae Ancootee Oral Fresh leaves chewed with water and applied togically Rhamnus prinoides Rhamaceae Geeshoo Oral Fresh leaves of Croot macrostachyus and eaten with 'injera' for four days (Fracture) Clausena anisata Rutaceae Ulmaayii Topical	Rumex abyssi	nicus Jacq	Polygonaceae	Dhangaggoo	Topical	Leaves crushed and smashed in water then applied on affected part (Skin infection)
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IntestIntes	Lepidium satr Maesa	vum L. Ianceolata	Brassicaceae	Fexo Abavi	Inhalation	Seed crushed and smoked 'Mich'
Brassica nigra L. Koch Maytenus senegalensisBrassicaceae CelastraceaeSanafica KombolchaTopical TopicalSeed crushed and its juice applied topically (Wound)Ensete VentricossumMusaceaeBaala warqeeOralThe latex half cup of tea taken to get relief from stomach ache (Abdominal pain)Echinops Fresen.hispidusAsteraceaeKeberchooInhalationDried bark put on fire and the smoke inhaled (Evil eye)Cordia africana Lam.BoraginaceaeWaddeessaTropicalLeaves crushed together with feces of goat then put on fire the ash mixed with butter and creamed on affected part (Spider poison)Coccinia abyssinicaCucurbitaceaeAncooteeOralRoot cooked with leaves of Croon macrostachyus and eaten with 'injera' for four days (Fracture)Clausena anisata 	Forssk	unceotutu	Myrsinaceae	Abdyl	Topical	(Ectoparasites).
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Ensete ventricossum Musaceae Baala warqee Oral The latex half cup of tea taken to get relief from stomach ache (Abdominal pain) Cheesman Asteraceae Keberchoo Inhalation Dried bark put on fire and the smoke inhaled (Evil eye) Fresen. Vaddeessa Tropical Leaves crushed together with feces of goat then put on fire the ash mixed with butter and creamed on affected part (Spider poison) Coccinia abyssinica Cucurbitaceae Ancootee Oral Root cooked with leaves of Croton macrostachyus and eaten with 'injera' for four days (Fracture) Clausena anisata Rutaceae Geeshoo Oral Fresh leaves chewed with water (Tonsilitis) Girardinia bullosa Urticaceae Guegubbee Oral Fresh leaves hold in teeth (Toothache, Rabies) Clucia lanceolata Euphorbiaceae Buna Topical Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical Fresh leaves chewed with butter (Ring worm. Wound)	Maytenus sen	egalensis	Celastraceae	Kombolcha	Topical	Leaf and bark juice applied topically (Wound)
Cheesman (Abdominal pain) Echinops hispidus Asteraceae Keberchoo Inhalation Dried bark put on fire and the smoke inhaled (Evil eye) Fresen. Cordia africana Lam. Boraginaceae Waddeessa Tropical Leaves crushed together with feces of goat then put on fire the ash mixed with butter and creamed on affected part (Spider poison) Coccinia abyssinica Cucurbitaceae Ancootee Oral Root cooked with leaves of Croton macrostachyus and eaten with 'injera' for four days (Fracture) Clausena anisata Rutaceae Ulmaayii Topical Snake bite, Ectoparasite Rhamnus prinoides Rhamnaceae Geeshoo Oral Fresh leaves chewed with water (Tonsilitis) Girardinia bullosa Urticaceae Gurgubbee Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound) <td>Ensete ve</td> <td>entricossum</td> <td>Musaceae</td> <td>Baala warqee</td> <td>Oral</td> <td>The latex half cup of tea taken to get relief from stomach ache</td>	Ensete ve	entricossum	Musaceae	Baala warqee	Oral	The latex half cup of tea taken to get relief from stomach ache
Present.Cordia africana Lam.BoraginaceaeWaddeessaTropicalLeaves crushed together with feces of goat then put on fire the ash mixed with butter and creamed on affected part (Spider poison)Coccinia abyssinicaCucurbitaceaeAncooteeOralRoot cooked with leaves of Croton macrostachyus and eaten with 'injera' for four days (Fracture)Clausena anisataRutaceaeUlmaayiiTopicalSnake bite, EctoparasiteRhamnus prinoidesRhamnaceaeGeeshooOralFresh leaves chewed with water (Tonsilitis)Girardinia bullosaUrticaceaeGurgubbeeOralRoot powdered and mixed in water and applied orallyClucia lanceolataEuphorbiaceaeUlee fooniiOralFresh leaves hold in teeth (Toothache, Rabies)Coffea ArabicaRubiaceaeBunaTopicalThe dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea).Croton- macrostachyusEuphorbiaceaeBakkanniisaOral/TopicalFresh leaves chewed with butter (Ring worm. Wound)	Echinops	hispidus	Asteraceae	Keberchoo	Inhalation	Dried bark put on fire and the smoke inhaled (Evil eye)
Coccinia abyssinica Cucurbitaceae Ancootee Oral Root cooked with leaves of Croton macrostachyus and eaten with 'injera' for four days (Fracture) Clausena anisata Rutaceae Ulmaayii Topical Snake bite, Ectoparasite Clausena anisata Rutaceae Geeshoo Oral Fresh leaves chewed with water (Tonsilitis) Girardinia bullosa Urticaceae Gurgubbee Oral Root powdered and mixed in water and applied orally Capsicum annum Solanaceceae Minmixa Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Fresen. Cordia africa	na Lam.	Boraginaceae	Waddeessa	Tropical	Leaves crushed together with feces of goat then put on fire the ash
Clausena anisata Rutaceae Ulmaayii Topical Snake bite, Ectoparasite Rhamnus prinoides Rhamnaceae Geeshoo Oral Fresh leaves chewed with water (Tonsilitis) Girardinia bullosa Urticaceae Gurgubbee Oral Root powdered and mixed in water and applied orally Capsicum annum Solanaceceae Mimmixa Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Coccinia abys	ssinica	Cucurbitaceae	Ancootee	Oral	Root cooked with leaves of <i>Croton macrostachyus</i> and eaten with 'injera' for four days (Fracture)
Rhamnus prinoides Rhamnaceae Geeshoo Oral Fresh leaves chewed with water (Tonsilitis) Girardinia bullosa Urticaceae Gurgubbee Oral Root powdered and mixed in water and applied orally Capsicum annum Solanaceceae Mimmixa Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Clausena anis	sata	Rutaceae	Ulmaayii	Topical	Snake bite, Ectoparasite
Girardinia bullosa Urticaceae Gurgubbee Oral Root powdered and mixed in water and applied orally Capsicum annum Solanaceceae Mimmixa Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Rhamnus prin	noides	Rhamnaceae	Geeshoo	Oral	Fresh leaves chewed with water (Tonsilitis)
Capsicum annum Solanaceceae Mimmixa Oral Fruits are crushed together with salt and eaten with 'injera' (Abdominal pain, Tapeworm) Clucia lanceolata Euphorbiaceae Ulee foonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Girardinia bu	llosa	Urticaceae	Gurgubbee	Oral	Root powdered and mixed in water and applied orally
Clucia lanceolata Euphorbiaceae Ulee fonii Oral Fresh leaves hold in teeth (Toothache, Rabies) Coffea Arabica Rubiaceae Buna Topical The dried coffee bean roasted and powdered with mixed with honey (Wound, abdominal pain, diarrhea). Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Capsicum ann	ıum	solanaceceae	Mimmixa	Orai	(Abdominal pain, Tapeworm)
Croton- macrostachyus Euphorbiaceae Bakkanniisa Oral/Topical Fresh leaves chewed with butter (Ring worm. Wound)	Clucia lanceo Coffea Arabic	olata ca	Euphorbiaceae Rubiaceae	Ulee foonii Buna	Oral Topical	Fresh leaves hold in teeth (Toothache, Rabies) The dried coffee bean roasted and powdered with mixed with honey (Wound abdominal nain diarthea)
	Croton- macr	ostachyus	Euphorbiaceae	Bakkanniisa	Oral/Topical	Fresh leaves chewed with butter (Ring worm, Wound).

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Grewia bicolar	Tliaceae	Harooressa	Oral	Bark of <i>Grewia bicolor</i> grinded and mixed in water and salt added finally given delayed placenta
Justicia schimperiana	Acanthaceae	Dhummugaa	Oral	Leaves put on fire with leaves of <i>Brucea antidysentrica</i> and rubbed on bite area (Rabies).
Nicotiana tabacum	Solanaceae	Tamboo	Oral	Leaves crushed and mixed with water and drunk (Snake bite), Leaves crushed and tied on affected part (Snake Poison).
Prunus africana	Rosaceae	Hoomii	Topical	Part of bark is powdered and tied for five days (Wound)
Phytolacea- dodecandra	Phytolacaceae	Handoodee	Topical	Leaf concoction is applied topically (Wound)
Ricinus- communis	Euphorbiaceae	Qobboo	Oral	Fresh leaves crushed and mixed with water and taken one cup of tea
				for 5 days (Liver Diseases, Rabies).
Vernonia anygdalina	Asteraceae	Eebicha	Oral	Leaves crushed and mixed with remnants of local beer ('Tella') and given orally for delayed placenta; Leaves crushed and soak in water and the exudates drenched.
Zingiber officinale	Zingebiraceae	Jinjibila	Oral	Chewed and swallowed (Cough, abdominal pain)
Olea europaea	Oleaceae	Ejersa	Inhalation	Fresh root chewed with water (Abdominal pain)
Cucumis ficifolius	Cucurbitaceae	Hiddi hooloto	Oral	Root concoction is drunk (Rabies)
Solanum gigantum	Solanaceae	Hiddii saree	Oral	Root crushed and taken with coffee (Rabies)
Dodonaea angustifolia	Sapindaceae	Itacha	Topical	leaves juice sprayed to the affected area
				(Lice infestation, Wound)
Citrus aurantifolia	Rutaceae	Lommi	Topical	Fruit paste is applied to the affected area (Antiemetic, Wound)
Carica papaya L.	Caricaceae	Paappaayyaa	Oral	Fresh leaf is crushed and given orally (Wound and Anti malaria).
Catha edulis	Celastraceae	Caatii	Oral	Fresh leaves chewed with water (Cough, Endoparasite)

Table 3. Summary of medicinal plants' frequencies in the study a

Family name	Rotanical Frequency	Percentage (%)
Amaranthaceae	1	2 33%
Acanthaceae	1	2.33%
Achantaceae	1	2.33%
Alliaceae	1	2.33%
Anacardacaaa	2	4 65%
Araceae	2	4.65%
Astaracaaa	5	11 6%
Rignoniaceae	1	2 33%
Boragingcaga	1	2.33%
Doruginaceae	2	6 0 8 9 /
Drussicaceae Carriegeoge	5	0.9870
Calastraasaa	1	2.55%
Crassulaceae	2	2 2 2 2 0 /
Crussulucede	1	2.5570
Zinzehingeege	1	2.3370
Diagona	1	2.33%
Cheuceae Sumin Anno 19	1	2.33%
Sapinaaceae	1	2.33%
Rutaceae	1	2.33%
	3	6.98%
Euphorbiaceae	3	6.98%
Fabaceae	2	4.65%
Linaceae	1	2.33%
Malvaceae		2.33%
Mensipermaceae	1	2.33%
Musaceae		2.33%
Myrsinaceae	1	2.33%
Olacaceae	2	4.65%
Phytolacaceae	1	2.33%
Poaceae	1	2.33%
Polygonaceae	2	4.65%
Rhamnaceae	1	2.33%
Rosaceae	1	2.33%
Rubiaceae	1	2.33%
Rutaceae	2	4.65%
Sapindaceae	1	2.33%
Scrophulariaceae	1	2.33%
Simaroubaceae	1	2.33%
Solanaceae	4	9.30%
Tliaceae	1	2.33%
Urticaceae	1	2.33%
Verbenaceae	1	2.33%
Zingebiraceae	1	2.33%
Scrophulariaceae	1	2.33%

Table 4. Summery medicinal plants p	rts, habit, Mode of administration	application with respective Woredas
(Total number of plants identified=56)		

Characteristics		Frequency	Percentage
Parts of Plants	Leaf	29	51.8%
	Seed and fruit	12	21.4%
	Whole	1	1.79%
	Bark	4	7.14%
	Root	11	19.6%
Habit	Herb	26	46.4%
	Shrub	16	28.6%
	Tree	14	25%
Medicinal plants with respective Woredas	Jarte Jardega	18	32.1%
	Jimma Geneti	11	19.6%
	Horro	8	14.3%
	Abay Chomen	9	16.1%
	Ababo Guduru	10	17.9%
Mode of administration	Orally	32	57.1%
	Topically	19	33.9%
	Inhalation	5	8.93%
Application	External	18	32.1%
	Internal	38	67.9%

 Table 5. The number of Medicinal plant remedies used to treat Human diseases in the study area

Variables		N <u>o</u> of respondents	N <u>o</u> of identified major risk factors (%)
Sources of Plants	Wild	79	65.8%
	Domestic	33	27.5%
	Both	8	6.70%
Total		120	100
Group of	Local farmers	86	71.7%
interviewed	Traditional healers	34	28.3%
Total		120	100
Availability of the	Every time	91	75.8%
medicinal plants	Seasonally	24	20.0%
	Difficult to get	5	4.20%
Total	_	120	100

Table 6. Priority ranking of factors perceived as threat to Medicinal plants on the level of destructive effects in Horro Guduru based on interviews.

Treats of Medicinal Plants	No of Respondents (n=120).	Percentage (%)	Rank
Agricultural expansion	83	47.7	1
Deforestation	57	32.7	2
Overgrazing	21	12.1	3
Drought	13	7.50	4

 Table 7. Paired comparison of medicinal plants for treating of Rabies in study area

Scientific name	Family name	Local name	N <u>o</u> of informants
Ricinus- communis	Euphorbiaceae	Qobboo	10
Clucia lanceolata	Euphorbiaceae	Ulee foonii	7
Cucumis ficifolius	Solanaceae	Hiddii saree	6
Solanum gigantum Jacq	Cucurbitaceae	Hiddi hoolota	2
Total			25

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