**Ethnobotanical Study of Traditional Medicinal Plants Used for Treatment of Human and Livestock Ailments by Traditional Healers in Goba Woreda, Bale Zone, Oromia, South East Ethiopia**

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**Abstract**

The study of traditional medicinal plants was conducted in Goba woreda from August to October 2018 in three kebeles Kedu, Elasa and Aloše Tilo. In this woreda, diverse medicinal plants were used to treat human and livestock disease. Among this various medicinal plant only 35 species were collected and identified by using the Flora book of Ethiopia and Eritrea (volume 3, 1989). The data was collected from 21 informants of traditional healer and from these 7 informants healer taken from each kebele and 16 were males and 5 females. The healers were used for treat dermatological, respiratory, urogenital, gastro-intestinal, febrile and livestock disease in the study area by using plant part of leaf (58%), root (25%) and other part (17%) to serviceable orally, nasally or dermally. However; these plant species were threatened by the activities of the community like expansion of agriculture, overgrazing, and deforestation of plant was the risk of extinction. To conserve the area and preserve the medicinal plants it was recommended to make aware of the society and to develop in –situ and ex-situ conservation plants.

**Keywords:** Human diseases, Livestock ailments, Traditional healer, Traditional medicinal plants

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1. **INTRODUCTION**

Million years back, plants have been used in the health care systems of mankind (Khandel et al., 2012). Even today, about (80%) of people in developing countries are used plants for treat the health problems. Despite the notable progress in the synthetic of organic chemistry, more than 25% of agreed the medicine of developed countries is also directly or indirectly derived from plants (Hostettmann and Marston, 2002). Furthermore, many of the major modern drugs such as quinine, salicylic acid, Artemisia have been discovered from traditional knowledge of communities (Yadav, 2013). Besides their use in preventing and curing various ailments, some medicinal plants are serving as export commodities and source of considerable income for farmers (Assefa and Abebe, 2014).

Ethiopia is located in the horn of Africa that believed about 6,500 species of higher plants presents. Among these 12% are endemic (UNEP, 1995). Since in Ethiopia it consist several languages, cultures, religious and several traditional knowledge (Gidey, 2001), and it used the medicinal plant highly expected (Getaneh and Girma, 2014). Also around 60% of world population depends on traditional medicine (Khandel et al., 2012). In developed countries such as United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as China and India, the contribution is 80% (Joy et al., 1998). The reason for highly reliance on traditional medicine in developing countries particularly in Ethiopia is cultural acceptability, effectiveness against certain type of ailments, accessibility and affordability as compared to modern medicine (Awas and Demissew, 2009; Yirga, 2010; Megersa et al., 2013). Regardless of its contribution to the society, traditional medicine has been given a little attention in modern research and less effort has been made to promote the practice in Ethiopia (Gidey, 2001). Due to natural and anthropogenic factors, the biodiversity as well as medicinal plants are being depleted in an alarming rate (Meggasa et al., 2013).

The current loss of medicinal plants in the country links with the missing of valuable indigenous knowledge associated with the plants (Zenebe et al., 2012). Among natives of various countries, knowledge of medicine has been passed orally from one generation to the next by priests and medicine men (Getahun, 1976). But, due to the fact that cultural systems are highly fragile the skills are likely to be lost in the transfer process (Getaneh and Girma, 2014). Furthermore, the local communities encounter cultural changes due to development activities in areas where these communities be inherent in both the medicinal plants and the associated indigenous knowledge could vanish forever (Belayneh et al., 2012). This also holds true in Ethiopia where written records in this field area almost absent even though the country has a written language for over thousand years (Agisho et al., 2014). In Ethiopia medicinal plants and knowledge of their use provided a vital contribution to human and livestock healthcare needs throughout the country. Because, medicinal plants are demanded in Ethiopia (Kibebe, 2001). Ethiopia geographical diversity with different habitats and vegetation type’s favors medicinal plant growth and utilization (Gebeyehu et al., 2013). Multiple geographical diversity of the country coupled with multiethnic group
make it home for wide traditional medicine.

Ethiopia is a country characterized by a wide range of climate and ecological condition, possesses enormous diversity of flora and fauna (Pankhurst, 2006). The country possesses a wide range potentially useful medicine plants, more extensive indeed than available in many other parts of the world (Yirga and Zeraburk. 2005). Popular knowledge of plant used by human is based on thousands of years of experience by trial and error people learn how to recognize and use plants, including those with a magic-religious function (Janzen 1981). Due to its long period of practice and existence, traditional medicine has become an integral part of the culture of Ethiopian people (Amenu. 2007). According to (Abebe, 2001), there is a large magnitude of use and interest in medicinal plant in Ethiopia due to acceptability and bio medicinal benefits. In Ethiopia the long history use of medicinal plants is reflected in various medico-religious manuscripts produced on parchments and believed to have originated several centuries ago (Kibebew, 2001). Medicinal text books written in Geez and Arabic in Ethiopia between the 17 & 18 centuries employs that plants have been used as a source of traditional medicine in Ethiopia health care system. In Ethiopia little emphasis has been given to traditional medicinal studies over the past decades (Hunde, et al., 2004). Therefore it can be said that ethinobotanical studies were merely at the start in Ethiopia there have been some attempts in investigating medicinal plants uses and there was as yet, no in depth study on the relation between medicinal plants and indigenous knowledge on sustainable management of such plant species.

2. Materials and Methods

2.1. Description of the study area

The study was conducted from August to October 2018 in Goba woreda, Bale zone, Oromia State, South Eastern Ethiopia. The Woreda was located in the eastern edge of Robe town, at about 446 kms South East of Addis Ababa. It was located between 39° 37’ 30” – 40° 12’ 00”E and 6° 38’ 0”’ – 7° 4’ 0”’ N was latitude. About 45% of the land scape in this Woreda was rugged or mountainous. Tullu Demtu Mountain was the highest point in this Woreda, Zone and Region. The Woreda were possesses Mica, Togona and Shaya rivers. A survey of the land in this Woreda shows that 13% was arable or cultivable, 27.6% pasture, 54.6% forest (or part of the Bale Mountains National Park), and the remaining 4.8% was considered degraded or otherwise unusable. As a part of Bale zone, Goba Woreda has two types of rainfall regime. The long rainy season extends from March to April with high rain fall during June, July and August. The second rainy season of rain fall regime was influenced by equatorial westerly and easterly winds with rainfall during spring and autumn. The altitude of the Woreda ranges from 1500-4377m a.s.l and the temperature varies from some times less than 0°C - 23°C. The common vegetation were Afro-alpine and sub Afro-alpine vegetation which were prevailing in limited areas above 3400m of massif and found in mountain tops of Sanete plateaus and surrounding prominent mountain peaks. Junipers procera forest associated with Hagenia abyssinica and Olea trees were found at altitudes ranging from 2300-3100mm. The forest areas were also well known for their flora and fauna diversities. The economic activities of the local people were primarily based upon mixed farming that involves pastoralism and cultivation of crops such as wheat and barley.

2.2. Methods of data collection

A primary survey of the study area was conducted in August to October 2018. During this survey, information about the physical features of the study area was collected. The study sites were selected purposively based on the availability of the practice on traditional medicine and availability of better vegetation cover following the recommendations of the local elders. Three kebeles (3 rural kebeles were selected in the study Woreda. The selected kebeles were, Kedu, Elasa and Aloeshe Tilo. The identification was assisted by the district and local authorities, elders and knowledgeable persons to gather diversified information on the ethnobotany of medicinal plants to treat different human disease. The data were collected using purposive sampling method (Bernard, 2002). This technique was preferred because the study focuses on specific issues that it was gathered from the most knowledgeable representatives of the society. Representative sample of the local people of different age and social groups were included. Accordingly, 21 informants were selected from the kebeles for this study. Out of the total informants, 16 were males and 5 were females. From each kebele, 7 informants were selected based on their willingness. The informants were aged between 20 and 75. These informants were selected for interview based on the assumption that they were members of the community most knowledgeable about traditionally used medicinal plants. Group as well as individual interview was conducted with them. The interview prepared in English was translated in to local language Afan Oromo. The methods employed in the data collection were group discussion, semi-structured interviews, open ended questions, field observation, market survey and preference ranking methods. All the relevant data including the vernacular name, plant habit, part of the plant used, medicinal values (uses) of the plant, preparation, were gathered during the interviews. Voucher specimens (Plants) were collected from each sample site, dried and brought to national herbarium found in Addis Ababa for identification. Then, identification was performed by experts in the herbarium using flora books of Ethiopia and Eritrea.
2.3. Data Analysis
In order to assess the distribution of the medicinal plants in the area, vegetation survey was carried out. It also provided one way of summarizing the knowledge of vegetation pattern. As the study encompasses large-scale area quadrant were used and a visual identification of the community type were established based on the dominance of some species. The community name was derived based on the tree or shrub with high synoptic value.

2.3.1. Descriptive Statistics
A descriptive statistical method percentage was employed to analyze and summarize the data on medicinal plants and associated knowledge. The most useful information gathered on medicinal plants reported by local people was the medicinal value, application; method of preparation, route of application, disease treated, dosage, parts and habits used were analyzed through descriptive statistical analysis.

3. Results
For identification purpose the part of all plant sample of 35 medicinal plants were collected and among these 27 species were used for the treatment of human diseases while six species were used for livestock treatment. The rest two species were used to treat both human and livestock diseases. The traditional practitioners collected (41.6%) of the medicinal plants from home gardens and (58.4%) from the natural habitat. Among the medicinal plants 18 species were herbs followed by 13 species shrubs and other four species were trees.

Table 1: List of Traditional medicinal plant species used to treat human and livestock disease

| S.No | Botanical Name                  | Local Name   | Type       | Human/Livestock | Ailment treated         |
|------|--------------------------------|--------------|------------|-----------------|-------------------------|
| 1    | Cacumis fici folius             | Yemdir embayu| Herb       | Human           | Sudden stomach each     |
| 2    | Clerodendrum myricoides         | Misrich      | Shrub      | Human           | Allergic                |
| 3    | Acokanthera schimperi           | Merenz       | Tree       | Human           | Hepatitis               |
| 4    | Ajugainteg pifolia              | Aqourarach   | Herb       | Human           | Tonsillitis             |
| 5    | Aloe vera                       | Eret         | Herb       | Human           | Wound                   |
| 6    | Artemisia afra                  | Ariti        | Herb       | Human           | Abdominal problem       |
| 7    | Asparagus scaberulus            | Keskeso      | Herb       | Human           | Burring wound           |
| 8    | Asparaghus spp.                 | Serittee     | Shrub      | Human           | Allergic                |
| 9    | Achyranthe saspera              | Telenji      | Herb       | Livestock       | Abagorba                |
| 10   | Calpurnia aurea                 | Digma        | Shrub      | Livestock       | Cattle lice             |
| 11   | Clematis hirsute                | Azoareg      | Shrub      | Human           | Abdominal problem       |
| 12   | Acmellacau lirhiza              | Yemdirberbere| Herb       | Human           | Tonsillitis             |
| 13   | Croton macrostachyus            | Bisana       | Tree       | Human           | Wring worm              |
| 14   | Datura stramonium               | Astenagir    | Herb       | Human           | Dandruf                 |
| 15   | Echinoops kabaricho             | Kabaricho    | Shrub      | Both            | Febrile illness         |
| 16   | Ecualptus globules              | Neebehazaraf | Tree       | Livestock       | Abagorba                |
| 17   | Foeniculum vulgare              | Insilal      | Herb       | Both            | Urination problem       |
| 18   | Jasmmnum gussacberulus          | Tembelel     | Shrub      | Human           | Allergic                |
| 19   | Juniprus procera                | Yeabeshatid  | Tree       | Human           | Wound                   |
| 20   | Kasesanche maerantha            | Endwhula     | Herb       | Human           | Boil                    |
| 21   | Kasesanche maerantha            | Endwhula     | Herb       | Human           | Tonsillits              |
| 22   | Leggerato mentosa               | Chikugn      | Herb       | Human           | Common cold & Influenza |
| 23   | Lepleium sativum                | Feto         | Herb       | Human           | Abdominal problem       |
| 24   | Leucusma rtinicensis            | Raskemir     | Shrub      | Human           | Febrile illness(much)   |
| 25   | Nicotina tobacum                | Timbaho      | Herb       | Livestock       | Leech infection         |
| 26   | Ocumnum gratissimum             | Damakese     | Shrub      | Human           | Febrile illness         |
| 27   | Osyris quadripartita            | Keret        | Shrub      | Livestock       | Cattle skin lesion      |
| 28   | Phytoleca dodecandre            | Indod        | Shrub      | Human           | Gonorrhea               |
| 29   | Rhusre tinorrhoea               | Tilem        | Shrub      | Human           | Hepatitis               |
| 30   | Rumex abysyninica               | Mekimeko     | Herb       | Human           | Wring worm              |
| 31   | Rumex crispus                   | Tult         | Herb       | Human           | Stomach aech            |
| 32   | Strychno sinoncua               | Engochit     | Shrub      | Human           | Abdominal problem       |
| 33   | Rutacha chlepensis              | Tenadam      | Herb       | Human           | Abdominal problem       |
| 34   | Verbana of icinalis             | Ajo          | Herb       | Livestock       | Abagorba                |
| 35   | Withania sominera               | Gizawa       | Shrub      | Human           | Febrile illness         |
3.2. Medicinal plant parts used, method of preparation and route of application
Most remedies (58.3%) were prepared from leaves followed by root (25%). The majority (88.8%) of remedies were prepared from fresh plant parts (leaf or root) followed by dried plant parts of the leaf or root powder (11.2%) and most common of remedial preparation was squeezing of the fresh leaf or root (33%) followed by powdering (13%) most of these medicine prepared remedies were applied orally (38.8%) followed by dermal (33.3%) and nasal (11.1%).

Table 2: Traditional medicinal plants parts used, method of preparation and route of application

| SN | Botanical Name | Parts used | Method of preparation | Route of application |
|----|----------------|------------|-----------------------|----------------------|
| 1  | Achyranthes aspera | Leaf | Fresh leaf crushed | Orally |
| 2  | Acmella oleracea | Flower | Chewing fresh flower | Orally |
| 3  | Acokanthera schimperi | Fresh leaf | Fresh leaf juice with honey | Orally |
| 4  | Ajuga reptans | Leaf | Fresh leaf | juice Nasally or orally |
| 5  | Aloe vera | Leaf | Covering with internal part | Topically |
| 6  | Artemisia afra | Shoot | Fresh shoot soaked in water | Orally |
| 7  | Asparagus scaberulus | Leaf | Polishing dry leaf powder | Topically |
| 8  | Asparagus spp. | Leaf | Fresh leaf juice | Topically |
| 9  | Caesalpinia pulcherrima | Root | Root powder with water / coffee | Orally |
| 10 | Calpurnia aurea | Leaf | Fresh leaf juice | Topically |
| 11 | Clematis hirsute | Root | Crushing fresh root & soaked in water | Orally |
| 12 | Clerodendrum inerme | Leaf | Fresh leaf juice | Topically |
| 13 | Croton macrostachyus | Young leaf | Fluid in young leaf | Topically |
| 14 | Datura stramonium | Leaf | Fresh leaf juice | Topically |
| 15 | Echinops kabaricho | Root | Root smoke | Nasally/orally |
| 16 | Eucalyptus globules | Leaf | Fresh leaf crushed | Orally |
| 17 | Foeniculum vulgare | Leaf | Fresh leaf juice | Orally |
| 18 | Jasminum sambac | Leaf | Fresh leaf juice | Topically |
| 19 | Juniperus procera | Dry leaf | Polishing dry leaf powder | Topically |
| 20 | Kaanchea macrantha | Leaf | Covering with hot fresh leaf | Topically |
| 21 | Kasanechea macrantha | Root | Fresh root crushed and soaked in water | Nasally |
| 22 | Leggerato mentosa | Leaf | Fresh leaf boiled with milk | Orally |
| 23 | Lepidium sativum | Seed | Seed powder with water | Orally |
| 24 | Leucosperma rhipidifolium | Leaf | Fresh leaf juice with water drop | Nasally |
| 25 | Nicotiana tabacum | Leaf | Fresh leaf juice | Orally or nasally |
| 26 | Ocimum gratissimum | Leaf | Fresh leaf juice with water drop | Nasally or orally |
| 27 | Oryzopsis dimorpha | Leaf | Fresh leaf juice | Topically |
| 28 | Rumex prinoides | Leaf | Chewing | Orally |
| 29 | Rhus reticulata | Leaf | Fresh leaf soaked in water | Orally |
| 30 | Rumex obtusifolius | Root | Root powder with butter | Topically |
| 31 | Rumex crispus | Root | Chewing fresh/dry root | Orally |
| 32 | Ruta chalepensis | Shoot & fruit | Fresh shoot soaked in water | Orally |
| 33 | Strychnos nuxvomica | Root | Fresh root crushed & soaked in water | Orally |
| 34 | Verbena officinalis | Leaf | Fresh leaf crushed & mixed with the above | Orally |
| 35 | Withania somnifera | Root | Dry root smoke | Orally & nasally |

3.3. Traditional medicinal plants used to treat different disease categories
3.3.1. Dermatological diseases
The skin can be exposed to much pathogenic infection mainly to different fungal diseases such as ringworm, dandruff and skin allergic. The society in the study area used a number of medicinal plants to treat these and other dermatological ailments. About 10 (27%) traditional medicinal plant identified used to treat different dermatological diseases.
### Table 3: medicinal plants used to treat human dermatological diseases

| SN  | Botanical Name       | Local Name | Ailments treated | Parts used | Method of preparation                  | Route of application |
|-----|----------------------|------------|------------------|------------|----------------------------------------|----------------------|
| 1   | Aloe vera            | Eret       | Wound            | Leaf       | Covering with the internal part        | Topically            |
| 2   | Asparagus scaberulus | Keskeso    | Fire wound       | Leaf       | Polishing dry leaf powder              | Topically            |
| 3   | Asparagus spp.       | Tembelel   | Allergic          | Leaf       | Fresh leaf juice                       | Topically            |
| 4   | Clerodendrum myricoides | Misrich    | Allergic          | Leaf       | Fresh leaf juice                       | Topically            |
| 5   | Croton macrostachyus | Bisana     | Ring worm        | Leaf       | Fluid in young leaf                    | Topically            |
| 6   | Datura stramonium    | Astenagir  | Dandruf          | Leaf       | Fresh leaf juice                       | Topically            |
| 7   | Jasminum gussca qberulus | Tenbelel  | Allergic          | Leaf       | Fresh leaf juice                       | Topically            |
| 8   | Juniprus procera     | Yabeshatid | Wound            | Leaf       | Leaf powder                            | Topically            |
| 10  | Rumex absyssinicus   | Mekmeko    | Ring worm        | Root       | Root powder with butter                | Topically            |

#### 3.3.2. Respiratory diseases

Respiratory diseases were the common health problem to the intended area of the study. People around that area treat the using traditional medicinal plant species. Of the plants identified from the study area six (10%) were used to treat respiratory ailment like tonsillitis, common cold and influenza (Table 4).

### Table 4: Medicinal plants used to treat human respiratory disease

| SN  | Botanical Name       | Local Name | Ailments treated | Parts used | Method of preparation                  | Route of application |
|-----|----------------------|------------|------------------|------------|----------------------------------------|----------------------|
| 1   | Acmella caulirhiza   | Yemdirberbere | Tonsillitis | Flower/ root | Chewing fresh flower or root           | Orally               |
| 2   | Ajuga intert pifolia | Aqourarach | Tonsillitis      | Leaf       | Fresh leaf juice                       | Nasally              |
| 3   | Eucalptus globules   | Nechbeharza | Common cold      | Leaf       | Fresh leaf boiled                      | Nasally/orally       |
| 4   | Kaseanechea macrantha | Endwhula  | Tonsillitis      | Root       | Fresh root crushed and soaked in water | Nasally              |
| 5   | Leggerato mentosa    | Chkugn     | Common cold & Influenza | Leaf | Fresh leaf boiled with water | Orally               |
| 6   | Ruta chalepensis     | Tenadam    | Common cold      | Leaf       | Fresh leaf boiled with milk/tea        | Orally               |

#### 3.3.3. Ureno-genital and organ diseases

From the collected plant species four (11%) of them were applied to treat ureno- genital and organ diseases. Traditional healers used leaf and root for the treatment of ureno- genital and organ diseases. Crushing fresh leaf or root and preparing juice to be taken orally (Table 5).

### Table 5: Medicinal plants used to treat Ureno genital

| SN  | Botanical Name       | Local Name | Ailments treated | Parts used | Method of preparation                  | Route of application |
|-----|----------------------|------------|------------------|------------|----------------------------------------|----------------------|
| 1   | Acokanthera schimperi | Merienz   | Hepatitis        | Leaf       | Fresh leaf                            | Orally               |
| 2   | Foeniculum volgare   | Insilal    | Urinary problem  | Leaf       | Fresh leaf juice                      | Orally               |
| 3   | Phyto lacca dodecandre | Indod    | Gonorrhea        | Root       | Crushing fresh root and soaked in water | Orally               |
| 4   | Rhusretino rhoea     | Tilem      | Hepatitis        | Leaf       | Fresh leaf soaked in water             | Orally               |

#### 3.3.4. Gastro intestinal disease

In the study area indigenous people use many traditional medicinal plants to treat gastro-intestinal ailments. Oral application is the most commonly rout of remedies in the study area. From identified medicinal plants seven (19.4%) are used to treat these diseases. The root is the common part of the plant to prepare the remedies (Table
Table 6: Medicinal plants used to treat Gastro-intestinal disease

| No. | Botanical Name | Local Name | Ailments treated | Parts used | Method of preparation | Rout of application |
|-----|----------------|------------|------------------|------------|-----------------------|---------------------|
| 1   | *Artemisia afra* | Ariti      | Stomachache      | Shoot      | Fresh shoot soaked in water | Orally             |
| 2   | *Cucumis ficifolius* | Ymidrimbauy | Typhoid          | Root       | Root powder with water / coffee | Orally             |
| 3   | *Lepldium sativum* | Feto       | Abdominal problem | Seed       | Seed powder with water | Orally             |
| 4   | *Rumex crispus* | Tult       | Sudden abdominal problem | Root       | Chewing fresh root | Orally             |
| 5   | *Rutacha lepensis* | Tenadam    | Stomach ache      | Shoot & fruit | Fresh shoot soaked in water | Orally             |
| 6   | *Clematis hirsute* | Azoareg   | Abdominal problem | Root       | Crushing fresh root & soaked in water | Orally             |
| 7   | *Strychno sinnocua* | Engochit   | Abdominal problem | Root       | Fresh root crushed & soaked in water | Orally             |

3.3.5. Febrile disease

Febrile diseases were common in the community they occur frequently, but treated with some medicinal plants. They were effective when applied together. The fresh leaves of these plants squeezed and with water / coffee (Table 7).

Table 7: Medicinal plant used to treat human febrile disease

| SN | Botanical Name                     | Local Name          | Ailments treated | Parts used | Method of preparation | Rout of application |
|----|-----------------------------------|---------------------|------------------|------------|-----------------------|---------------------|
| 1  | *Echinoops kabarichomesfin*       | Kebericho           | Febrile          | Root       | Dry root smoke        | Nasally/Orally      |
| 2  | *Leucusma rinicensis*             | Raskemir            | Febrile          | Leaf       | Fresh leaf juice with coffee/water | Orally/nasally      |
| 3  | *Ocimum gratissimum*              | Damakese            | Febrile illness(much) | Leaf       | Fresh leaf juice with water drop | Nasally or orally   |
| 4  | *Withania sominfera*              | Gizawa              | Febrile illness (much) | Root       | Dry root smoke        | Orally & nasally    |

3.3.6. Livestock disease

Breeding livestock is one source of economy besides cultivating crops to the society of the study area. They treat different livestock diseases with a number of traditional medicinal plant species. Traditional healer treat the disease of livestock using medicinal plants six (16.7%) of identified from the study area are used to treat different livestock ailment (Table 8).

Table 8: Medicinal plant used to treat Livestock disease

| SN | Botanical Name         | Local Name            | Ailments treated | Parts used | Method of preparation | Rout of application |
|----|------------------------|-----------------------|------------------|------------|-----------------------|---------------------|
| 1  | *Achyranthes aspera*   | Telenji               | Abagorba         | Leaf       | Fresh leaf crushed    | Orally              |
| 2  | *Calpurnia aurea*      | Digita                | Cattle lice      | Leaf       | Fresh leaf juice      | Topically           |
| 3  | *Eucalptus globules*   | Nech beharzaf         | Abagorba         | Leaf       | Fresh leaf juice      | Orally              |
| 4  | *Nicotina tobacum*     | Timbaho               | Leech infection  | Leaf       | Fresh leaf juice      | Orally or nasally   |
| 5  | *Ocyrisquadripartita*  | Keret                 | Cattle skin lesion | Leaf       | Fresh leaf juice      | Topically           |
| 6  | *Verbana officinalis*  | Atuch                 | Abagorba         | Leaf       | Fresh leaf crushed & mixed with the above two | Orally              |

4. Discussion

The people in the study area were used numerous medicinal plants to treat different human and livestock diseases by traditional healers. From the study site most medicinal plants (80%) were collected from farm land, grazing land, up land forest, compared to (20%) from home garden. The same result was also documented in Kilte Awlalo distric of Tigray region by Teklay et al. (2013). The community may not so interest to grow all the medicinal plants in the home garden and ex-situ. This may be due to most medicinal plant is available in the wild area so that
the traditional healers harvest them easily. Acmellaca lihizais is used to treat tonsillitis by chewing fresh flower or root (Martine, 1995, Khanal 2006 cited in Alemayehu, 2013). Leggerata mentosa is used to treat common cold and influenza by boiling with milk and taken orally mainly for infants. Traditional healers treat ureno-genital and organ ailment using different traditional medicinal plant species (Hunde et al., 2004).

Phytolacca dodecandre is used to treat one of the sexually transmitted diseases gonorrhoea. For the treatment of gonorrhoea fresh root of the plant crushed the squeeze taken orally. Crushing the fresh leaf of Rhusterti norrhoea and Ackantheras chimperi squeezed together mixed with honey and taken orally before breakfast to treat hepatitis. Some medicinal plants are familiar to the society in the study area to treat many gastrointestinal ailments (Martin, 1995). Chewing the fresh root of Rumex crispus used to treat sudden abdominal problem (dingetgna). The root powder of Cacumis ficifolius with water / coffee used to treat typhoid. Most these plants are found easily around home gardens. The traditional healers estimate the dosage by taking seven leaves from each plant and mix together and the squeeze given to the paint. Nicotina tobacum is used to treat leech infection. Fresh leaf juice taken orally/nasally to with drown the leech from the trachea as it close the trachea and cause cough to the cattle. Crushing Eucalptus globules, Achyranthe sapsera, and Verbana oficinalis together soaked in water and taken orally to treat Abagorba. The fresh leaf squeeze of Calpurnia aurea applied dremily to kill cattle lice (Balick and Cox, 1996).

Traditional healers prepare the traditional remedies using different traditional measurement to estimate the dosage of the remedies like counting the number of leaf or root, using containers for example to treat gonorrhoea with Phytolacca dodecandre juice they use a coffee cup up to the volume cover the thumb or nail of the healer. In this study area traditional healers used medicinal plants to treat a number of diseases using leaf which might not threatened the plant. Using root however, will lead to extinction. Indigenous people were highly dependent upon plants for multiple applications that threatened diversity of medicinal plants.

5. Conclusion
The study area Goba wereda has diverse medicinal plants that were used to treat various human and livestock diseases by the local communities. The wild plant habitats were the main sources of medicinal plants compared to home gardens. Currently medicinal plants availability was at risk due to different human activities such as agricultural expansion and cultivating eucalyptus tree for the source of income were the most visible threats in the study area. The indigenous knowledge of people has to be passed over to the next generation. To conserve the biodiversity of the area and preserve the medicinal plants there was a need to create awareness and develop in – situ and ex-situ conservation of medicinal plants.

Competing Interests
The authors declare that they have no competing interests.

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