Journal of Medicinal Plants Studies
www.PlantsJournal.com

ISSN (E): 2320-3862
ISSN (P): 2394-0530
NAAS Rating 2017: 3.53
JMPS 2017; 5(5): 282-288

Received: 12-07-2017
Accepted: 13-08-2017

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Ethnoknowledge of plants used in veterinary practices in Midakegn district, west showa of Oromia region, Ethiopia

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Abstract
Ethiopia, is a country characterized by a wide range of climate and ecological conditions, possesses enormous diversity of fauna and flora. The study of indigenous knowledge on utilization of native plants as source of medicine is important to treat livestock and animals ailments. This research was conducted on ethnoveterinary medicine by use Semi-structured interviewees, observation and guided field walks with informants in selected kebeles of Mida Kegn district, western Ethiopia. This study documents indigenous medicinal plant utilization and factors contributing to the declining of native plants and indigenous knowledge. Traditional healers were selected purposively and interviewed. Accordingly ethnomedicinal use of 60 plant species and 41 families were documented. From the total medicinal plant 18(30.0%) were herbs, followed by 17(28.33%) shrubs, 16(26.67%) trees, 7(11.67%) climbers, 1(1.66%) liana and 1(1.66%) epiphytes species. The most frequently used plant parts were leaves 47(37.3%) followed by roots 27(21.43%). The most widely used method of preparation was Pounding 59(40.97%) of the different plant parts followed by powdering and chewed 28(19.44%) 20(13.89%) respectively. The common route of administration recorded was oral 68(53.97%) followed by dermal 33(26.19%) and nasal 11(8.78%). Fabaceae families constituted the highest proportion followed by Solanaceae. Some traditional healers transfer their indigenous knowledge while others kept the knowledge with them for the sake of secrecy. Most of the traditional healers were found to have poor knowledge on the dosage and antidote while prescribing remedies to their patients. More than one medicinal plant species were used more frequently than the use of a single species for remedy preparations. Mida Kegn district is rich in its medicinal plant composition and the associated indigenous knowledge. Further documentation traditional plants, Evaluation of their efficacy and possible toxicity would be very important.

Keywords: Ethnoveterinary, Indigenous knowledge, Livestock, Midakegn, Traditional Medicine.

1. Introduction
In all countries of the world, there exists traditional knowledge related to the health of humans and animals. In Africa, traditional healers and remedies made from plants play an important role in the health of millions of people (Rukangira, 2001) [22] and animals, which is studied by ethno veterinary medicine. Ethnoveterinary medicine studies traditional knowledge, folk beliefs, skills, methods and practices used for the treatment of livestock ailments (Tabuti *et al*., 2003) [25]. It offers medicines which are cheap and locally available than pharmacotherapy. Farmers can prepare and use homemade remedies without any expenditure (Yirga *et al*., 2012a) [31].

Millions of people around the world have an intimate relationship with their livestock. Ethiopia is the home of many nationalities and remarkably diverse flora, including numerous endemic species that are utilized in different traditional medical practices. In Ethiopia, people have been using both plant and animal species for medication of different animal and human diseases over centuries when there was no modern health service delivery (Ngeh *et al*., 2007) [19]. The knowledge is transferred from generation to generation through the word of mouth (oral tales) with great secrecy (Yirga *et al*., 2012a) [31] than in written form (Mesfin *et al*., 2009) [15]. However, it can be transferred to generation vertically through family members, horizontally by exchange through peers, or diagonally through traditional healers to student learners (Philander *et al*., 2008) [21].

However, the local indigenous knowledge on medicinal plants has been lost at a faster rate with the increase of modern education, which has made the younger generation to underestimate its traditional values. In addition the increase in population growth rate would

result in the intensification of agriculture in marginal areas which would lead to deforestation with decrease in number or loss of medicinal plants in the wild (Sori *et al*., 2004) [24].

Medicinal plants are the base for the development of new drug and the survival of till human kind as well as other livestock. Even though the traditional medical practitioners are the best sources of information about the knowledge of the medicinal plants, it is found very difficult to obtain their traditional medicinal information as they considered their indigenous knowledge as a professional secret, only to be passed orally to their older son, at their oldest age (Jansen, 1981) [11].

Disease has been an integral part of man and the search for remedies to combat it is been ongoing. Medicines are extensively and safely used to alleviate various symptoms of diseases (Miller, 1998) [17]. In recent times focus on plant research has increased all over the world and there is widespread of belief that the green medicines are healthier and harmless than the synthetic ones (Murthy *et al*., 2005) [18]. Plants are good sources for new, safe, biodegradable and renewable drugs however the use of plants as therapeutic agents in addition to being used as food is age long Joy *et al*., 2012) [12]. The medicinal plants are recognized for their ability to produce a wealth of secondary metabolites and mankind has used many species for centuries to treat a variety of diseases (Kaur *et al*., 2013) [13]. Herbal medicines are prepared from a variety of plant materials-leaves, stems, roots, barks, fruits, seeds, flowers and so on. They usually contain most of the biologically active ingredients and are used primarily for treating mild to chronic ailments.

According to the World Health Organization, at least 80% of the people in developing countries depend largely on indigenous practices for the control and treatment of various diseases affecting both human beings and their animals (Ngeh *et al.*, 2007) [19]. In Ethiopia, people have been using both plant and animal species for medication of different animal and human diseases over centuries when there was no modern health service. The practice has been not stopped with introduction of the modern pharmacotherapy and plant remedies are still the most important and sometimes the only sources of therapeutics for nearly more than 90% livestock population (Tadeg *et al*., 2005; Giday *et al*., 2009) [26, 7].

In Ethiopia, medicinal plants have been used from time immemorial to treat different human and livestock ailments (Haile *et al.*, 2008b) [10]. So far in Ethiopia, plants of medicinal values are estimated to be over 700 species and most of them are confined to the South western region of the country. There is a high expectation of enormous traditional knowledge and use of medicinal plant species in Ethiopia due to the existence of diverse cultures, languages and beliefs among the people.

The wide spread use of traditional medicine could be attributed to cultural acceptability, economic affordability and efficacy against certain type of diseases as compared to modern medicines. Thus, different local communities in countries across the world have indigenous experience in various medicinal plants where they use their perceptions and experience to categorize plants and plant parts to be used when dealing with different ailments (Omoruyi *et al*., 2012) [20].

Even though ethnomedicinal plant studies and documentations of the indigenous knowledge have been done in certain localities in Ethiopia, there was no any ethnobotanical study conducted in Mida Kegn District of Oromia Region. Therefore this research focus on traditional knowledge of ethno veterinary practices used for maintaining the health and curing diseases of livestock in Mida Kegn district, West Shewa Zone.

3. Materials and methods

3.1. Description of the Study Area

The study was conducted between February 2016 to May, 2017 in Mida Kegn district, West Showa zone of Oromia Regional State, Ethiopia. Woreda is located at 218 Km away from Addis Ababa, capital city of Oromia Regional State and Ethiopia. Mida Kegn is located between 8°56'30"N and 8°59'30"N latitude and between 37°47'30"E and 37°55'15"E longitude respectively. The altitude of the study area ranges between 1900-2185masl (Mida Kegn District Agricultural Office, 2013). Middle altitude (1700-2490masl), covers about 72% of the area, has temperature of 18 ºC-26 ºC and an average rainfall of 1150mm per annum where as high altitude areas (2000-2347masl) covers about 28% of the area with temperature of 17 ºC-20 ºC and average rainfall of 1143mm per annum (CSA, 2008) [4]. The vegetation of the study area consists of various trees, shrubs and herbaceous species. An estimated population size of 75,240 of which 39,957 are males and 35,283 are females. According to Mida Kegn District Agricultural Office (2013), the District possesses 172,377 livestock population consisting of 78,527 cattle, 33,037 poultry, 28,086 sheep, 18,910 goats, 3,677 donkeys, 9,270 horses, and 870 mules.

3.2. Ethnobotanical Data Collection

A survey was conducted to gather information on ethnoknowledge of medicinal plants used in veterinary practices and to assess factors affecting its utilization. The information was obtained by face to face interview with traditional local healers using semi-structured questionnaire.

Prior to ethnobotanical data collection, three *Kebeles* viz. Goda Gelan, Dire Weni and Goda Arba were purposively selected from 23 kebeles. Moreover, access to modern medical facilities and availability of traditional medicine practitioners were considered as criteria to select these kebeles. Totally, 84 respondents (aged >22) of which 68 (54 men and 14 women) were ordinary residents and 16 as key informants (traditional healers) participated in this study. Key informants were selected based on the information gathered from the local people while other respondents were randomly selected. Data collection methods were semi-structured interviews focused, group discussions, and guided field walks with key informants. Key informants were first interviewed individually to mention about the local names of the plants they use to treat diseases, diseases treated, part (s) of plants used, methods of preparation, and route of application.

4. Results

4.1. General Characteristic of the informants and availability of medicinal plants

In the present study, traditional healers 26(30.95%) and livestock owners 58(69.05%) participated during the study period. Almost all of the respondents were elderly, age group: 73.81% and younger age group: 26.19% respectively. Availability of some ethnoveterinary medicinal plants were affected by season; many of the plants were available all the time (80%), some were available seasonally (16.67%) and the rest difficult to get (3.33%) as described in the study area. All the informants belonged to the Oromo ethnic group and their ages ranged from 22 to 80 years.

4.2. Medicinal plants of the study area

In this study, altogether 60 plant species distributed into 59

genera and 41 families were recorded to have medicinal values. Of these, about 54.76% and 42.06% were reported to treat only human and livestock ailments, respectively. The existence and utilization of such a large number of medicinal plants by local people of the study area proves the reliance of indigenous people on traditional medicine of plant origin. Traditional medicine is the primary health care system of resource poor communities (WHO, 2001) [28] and people, for economic reason, inaccessibility to modern medication and/or traditional beliefs prefer traditional medicine to modern medication (WHO, 2002) [29].

Family *Fabaceae* was represented by highest number of medicinal plants species (6 species) followed by *Solanaceae* (4 species); *Cucurbitaceae*, *Rutaceae*, *Asteraceae and Euphorbiaceae* (3 species each); *Rubiaceae* (3 species); *Phytolacaceae*, *Myrsinaceae*, and *Malvaceae* (2 species each); and the remaining families represented by one species each. The majority of medicinal plant species were obtained from wild vegetation 28(46.66%) followed by both wild and domestic vegetation 19(31.66%) and domestic vegetation 13(21.66 %.)

Table 1: Families, Species, Traditional uses and parts used of ethno-veterinary medicinal plants in the study area.

Family	Species	Traditional uses	Parts used
Alliaceae	*Allium sativum*	Malaria and stomach problem	L, B
Amaranthaceae	*Amaranthus caudatus*	Diarrhea	L
Melianthaceae	*Bersama abyssinica*	Parasitic skin	R
Fabaceae	*Calpurniaaurea*	Scabies	L
	Erythrina brucei	Swelling	B, R
	Acacia abyssinica	Goiter, stomach ache	L, B
	Albizia gummifera	Evil eye	R
	Indigofera hochsteteri	Tetanus	R
	Pterolobium stellatum	Evil eye	R
Rutaceae	*Citrus limon*	Head ache, stomach ache, nasal bleeding	F,R, B, L
	Clausena anisata	Skin rash	L
	Ruta chalepensis	Stomach ache	L
Poaceae	*Snowdenia polystachya*	Tenia pedis	Ag
Phytolacaceae	*Phytolaca dodecandra*	Liver disease	R
	Periploca linearifolia	Gonorrhea	Sap
Plantaginaceae	*Plantago lanceolata*	Skin cut	L
Malvaceae	*Sida temuicarpa*	Haemorhoid	L
	Pavonia urens	Diarrhea	R
Vitaceae	*Ampelocissus bombycina*	Anthrax	L
Urticaceae	*Urtica simensis*	Fever	L
Rhamnaceae	*Rhamnus prinoides*	Skin fungal infection, wound	L, S
Rubiaceae	*Coffea Arabica*	Diarrhea	S
Euphorbiaceae	*Ricinus communis*	Anthrax, sudden sickness, blotting, actinomycosis, ulceric lymphangitis, epizootic lymphangitis	F, R,
	Euphorbia lathryis	Breast ulcer, ascaries, warts	Stem, sap
	Croton macrostachyus	Ringworm, gonorrhea, scabies, evil eye, febril illness, head ache, wound, skin infection	R, L, F, B
Sapindaceae	*Dodonaea angustifolia*	Wound, tapeworm	L
Asteraceae	*Solanecio gigas*	External parasites	L
	Vernonia hymenolepis	Malaria, tooth infection, stomach ache, evil sprit	L
	Echinops amplexicaulis	Trypanosomiasis, liver disease, pasteurellosis	R
Myrsinaceae	*Embelia schimperi*	Tapeworm	S, L
	Maesa lanceolata	Eye disease, pasteurellosis	L, R
Myrtaceae	*Eucalyptus globulus*	Avian cholera, influenza, skin disease, cough	L
Lineaceae	*Linum usitatissium*	Retained placenta, dandruff	S
Verbenaceae	*Lippia adoensis*	Ringworm	L
Brassicaceae	*Lepidium sativum*	Cough,Blotting, malaria, diarrhea, tonsillitis, heart disease	S
Capparidaceae	*Capparis cartilaginea*	Back pain	S
Oleaceae	*Olea europeae*	Haemorrhoid	B
Lamiaceae	*Ocimum bacilicum*	Malaria, head ache	L
Boraginaceae	*Cordia Africana*	Wound	L
Meliaceae	*Ekebergia capensis*	Wound, hemorrhoid, cold	B, sap, L
Polygonaceae	*Rumex nepalensis*	Stomach ache, spider poisons, ameba,	R, L
Anacardiaceae	*Schinus molle*	Eye disease	L/F
Solanaceae	*Solanum dasyphyllum*	External parasites	F
	Nicotiana tabacum	Blotting, expel leeches, internal parasites, trypanosomiasis, eye infection, head ache	L, R
	Datura stramanium	Wound	L
	Capsicum annuum	Blotting, blackleg, colic	F
Cucurbitaceae	*Lageneria siceraria*	Tinea versicolor, malaria, scabies	F
	Cucumis fisifolius	Febril illness, ear pain, stomach ache, cattle infection, tetanus, sudden sickness, anti-inflammatory	R, Sap, L
	Zehneria scabra	Swelling, rabies	L, R
Apocynaceae	*Carrissa spinarum*	Evil eye, head ache, stomach ache, gonorrhea	R, L

Ranunculaceae	*Clematis simensis*	Tonsil disease, lymphatic swelling	L
Thymelaceae	*Gridia glauca*	Kidney disease	R
Acanthaceae	*Justica schimperiana*	Rabies, blackleg, gonorrhea, malaria	R, L
Solicaceae	*Salix mucronatha*	Joint dislocation	L
Loganiaceae	*Buddleja polystachya*	Eye disease	L
Crassilaceae	*Kalanchoe petitiana*	Nasal bleeding	R/L
Loranthaceae	*Englenina woodfordiodes*	Diarrhea	L
Simaroubaceae	*Brucea antidysentrica*	Malaria, rabies, tooth ache	S, R,B
Araliaceae	*Cussonia ostinii*	Cough, ulceric lymphangitis, liver disese	L,R,B
Moraceae	*Ficus sur*	Ringworm	Sap

4.3. Plant Habit, Part(s) Used and Administration Method

Analysis of growth forms of medicinal plants revealed that herbs constitute the largest category 18(30%) followed by shrubs 17(28.33%) and 16(26.67%) tree species. Climbers, epiphytes and liana species were 7(11.67%), 1 (1.67%) and 1(1.67%), respectively.

People of the study area were used different plant parts as a sole or in mixture for the preparation of traditional medicine. The most cited plant parts for medicine were leaves alone 47(37.30 %) followed by root alone 27(21.43%), seed alone 13(10.32%), fruit alone 10(7.94%), sap alone 7(5.56%), bark alone 3(2.38%), bulb alone 5(3.97%), stem alone 1(0.79%), above ground 1(0.79%), and root-leaves mixed 4(3.18%), bark-root 2(1.59%), root-seed mixed 2(1.59%), leaf-fruit mixed 1(0.79%) bark-leaf 2(1.59%) and seed-leaf 1(0.79%) respectively.

Table 3: Summary of ethno-veterinary medicinal plant habit, parts and routes of administration

Variable		Frequency	Percent
Habit	Herb	18	30%
	Shrub	17	28.33%
	Tree	16	26.67%
	Liana	1	1.67%
	Climber	7	11.67%
	Epiphyte	1	1.66%
Parts	Leaf	47	37.30%
	Root	27	21.43%
	Fruit	10	7.94%
	Seed	13	10.32%
	Sap	7	5.56%
	Bulb	5	3.97%
	Root & Leaf	4	3.18%
	Bark & Root	2	1.59%
	Bark	3	2.38%
	Stem	1	0.79%
	Above ground	1	0.74%
	Root & Seed	2	1.59%
	Bark & Leaf	2	1.59%
	Leaf & Fruit	1	0.74%
Routes	Oral	68	53.97%
	Topical	33	26.19%
	Anal	2	1.59%
	Optical	2	1.59%
	Nasal	11	8.73%
	Nasal/Oral	1	0.79%
	Ear canal	3	2.38%
	Through eye	2	1.59%
	Neck	2	1.59%
	Nasal/Ear canal	1	0.79%

Herbal preparation that involves roots, rhizomes, bulbs, barks, stems or whole parts have negative effects on the survival of the mother plants (Dawit & Ahadu, 1993) [5]. Though excessive harvest of leaves may damage plants, particularly the young plants bearing few leaves, the fear of destruction of medicinal plants due to the nature of plant parts collected for the purpose of medicine seems to be minimal in the area where this study was conducted.

The local people employed several methods of preparation of traditional medicines from plants such as pounding, powdering, rubbing, sequeezing and infusion. Pounding / powdering was the most frequently reported method of traditional medicine preparation in the study area. This may be due to the possibility of effective extraction of plant ingredients when crushed/powdered so that its curative potential would increase. The preparations were either used fresh or can be stored in different clean and dry containers (e.g., clothes, plastic bags or sealed bottles) for later use. It was also found that, these were effective for the complete extraction of the potential content of the plant and increase the curative power of the medicine or its efficacy, as both increases the healing power of the remedy through faster physiological reaction (Table 4). Preparations may involve using a single plant part or mixtures of different organs of the same plant or mixture of organs from different plants. For example, honey, sugar, teff flour, butter or milk, salt, wood ash, and some spicy plants such as garlic and *Ruta chalepensis* or ginger are some of the additives that the local people reported to use them as additives.

According to the informants, both pounding and powdering as a strategy permit to preserve the plant materials that are not available all seasons. Traditional practitioners often use any dry clean containers to preserve traditional medicines. Almost greater proportions of informants do not have the habit of keeping traditional medicines prepared for a long time.

Table 4: Methods of traditional medicinal plant preparation in the study area

Forms of preparation	Frequency of use	Percent
Pounding	59	40.97%
Powdering	28	19.44%
Crushed	11	7.64%
Chopping	3	2.08%
Smashed	6	4.17%
Creamed	4	2.78%
Rubbing	5	3.47%
Chewed	20	13.89%
Rinsed	2	1.39%
Cutting	3	2.08%
Burning	2	1.39%
Squeezing	1	0.69%

4.4. Major human and animal diseases and number of plant species used by indigenous people of study area

In the area a total of 79 diseases of humans and 56 diseases of livestock, recorded were treated with a total of 60 plant species, where one species can treat a single disease or a number of diseases. Similarly, one ailment can be treated with combination of plant species or single plant (Table 6). For example, parasite of skin was treated with 12 species of

plants, Stomach problem 7 species, Gonorrhea with 4 species, Wound with 6 species, Evil eye with 5 species, Malaria with 7 species, Head ache and Swelling with 5 species, Internal parasites and Eye disease with 5 species each. The fact that the above ranked diseases being treated by a number of species was coupled with the frequent occurrence of the diseases and ease of accessibility of plant species for treatment. In turn, these factors widen the popularity of these species among the informants and indigenous knowledge for treating these diseases**.**

Table 5: Major animal and human diseases and number of plant species used by indigenous people of study area

Disease	No. Species	Percentage (%)
Malaria	7	5.15
Stomach ache	7	5.15
Diarrhea	4	2.94
Parasitic skin	12	8.82
Ringworm	4	2.94
Gonorrhea	4	2.94
Evil eye	5	3.68
Head ache	5	3.68
Wound	6	4.41
Internal parasite	5	3.68
Swelling	5	3.68
Eye disease	5	3.68
Rabies	4	2.94
Blotting	4	2.94

4.5. Acquisition of the ethnoknowledge systems

Transfer of this ethnoknowledge of medicinal plants follows vertical transfer to the most selected family members orally with great secrecy. But few individuals can show and tell others outside their family members if they have close relationship. Forty (66.67%) of them were acquired the knowledge from older family members including father, mother, grandfather/ mother and while twelve (20%) had acquired it from other elders. Most of the informants were elders that indicated the trend of transferring (inheriting) the knowledge was usually at old age.

4.6. Factors affecting practice of ethnoveterinary medicines

The informants were also asked whether they want to transfer the knowledge and practice to others formally or informally. Of the total 84 informants, 72(85.71%) were willing to transfer the knowledge to everyone who wants to know it by putting emergence of sudden death before transferring the information to others as a reason. The rest 12 (14.29%) had no willing to transfer the knowledge outside their family members and want to keep it in secret till their death. Of the 84 informants, 70(83.33%) responded that utilization of traditional herbal drug has been declining from time to time due to several factors and the rest 14 (16.66%) informants believes that it was not reduced. The potential risk factors responsible for this were difficulty of preparation, seasonal unavailability of the plants, availability and coverage of modern drugs and education, side effects, lower effectiveness of homemade remedies, climatic change, deforestation and lack of willingness of traditional herbalists to transfer knowledge.

5. Discussions

Plants have played a central part in combating many ailments in human and livestock in many indigenous communities including Africa. Traditional healers, particularly medicinal plant herbalists have a detailed knowledge-base of traditional medicine in Africa. But, it is transferred orally from one generation to the next through professional healers, knowledgeable elders and/or ordinary people (Jansen, 1981) [11]. Despite the fact that ethnoveterinary medicine has been very crucial for the animal health care of most developing countries it has not yet been well documented and much effort is needed in research and integration activities in these countries.

In the present study, 60 plant species of medicinal importance were recorded and documented. The majority of the reported medicinal plant species were wild. These indicated that the local people harvest more medicinal plant species from the wild than from home gardens. Traditional healers involved in the current study belong to Oromo people and they were well known in treating many illnesses with homemade remedies from local medicinal plant species which agree with the finding of Yineger *et al.,* 2008 [30]. Majority of the respondents were older than 47 years indicating they have well traditional knowledge in treating livestock illnesses. Less medicinal knowledge in relation to young age might be attributed to the fact that traditional knowledge was built with years of experience. The present study revealed vertical transfer of ethnoveterinary knowledge to the most selected family member and few individuals outside the family members orally with great secrecy. Even though the informants involved in this study had acquired knowledge and practice with great secret, most of them have willingness to transfer the knowledge to others, which indicated the knowledge of traditional medicine as professional secret which also agree with the finding of Yirga *et al*., 2012a [31].

Khan *et al*., 2012 [14] reported that Traditional veterinary knowledge like all other traditional knowledge systems was handed down orally from generation to generation and it may disappear, because of rapid human population, environmental and technological changes which was also the case in Mida Kegn district. Similarly, difficulty of preparation, seasonal availability of medicinal plants, availability of modern drugs, climatic change and deforestation were potential factors contributed for declining utilization of homemade remedies in the study area. Additionally, environmental degradation, agricultural expansion, cultivation of marginal lands and urbanization were also reported from different areas as the factors causing significant danger for soon disappearance of the knowledge which agree with Gradé *et al*., 2009 [9] finding's.

Plants comprise the largest component of the diverse therapeutic elements of traditional livestock healthcare practices. They were also known to provide low cost animal health care alternatives for simple health issues in rural communities and were relatively simpler to prepare and administer (Etana, 2010) [6]. During this study medicinal plants classified into 41 families used to treat different human and animal diseases were identified. One or more of the plant species identified in this study were also reported from other parts of Ethiopia (Sori *et al*., 2004; Lulekal *et al*., 2008; Yirga *et al*., 2012a) [24, 31].

The medicinal plant preparations were applied through different routes of administration like oral, topical or dermal and nasal routes (Table 3). Oral application was the highest and most commonly used route of application followed by dermal which were also reported by Abebe and Ayehu, 1993 to indicate oral as the main route of application used in northern Ethiopia. This is probably due to oral routes permit rapid physiological reaction of the prepared medicines with

the pathogens and increases its curative power (Mesfin, 2007). Majority (94%) of these preparations are drawn from mixtures of different plant species with different additive substances like honey, butter, oil, milk, salt, bread. Similar result was reported (Gidey, 1999; Tamene, 2000; Mesfin, 2007) [8, 7]. Who identified the additive substances in herbal remedy preparations with their possible benefits.

A rich heritage of indigenous medicinal plants use and knowledge was also recognized. However, the knowledge and use of these plants were not documented; they are only transmitted from generation to generation verbally. According to Alcorn (1984), indigenous knowledge develops and changes with time and space. Traditional healers were found to play an important role in the primary health care system of the local people as they treat resource people who had little access and could not afford the cost of modern medication. About 65-85% of the populations in every country of the developing world rely on traditional medicine because of lack of certain infrastructures like hospitals and health centers (Sofowora, 1982) [23]. Since medicinal plants are the main, often only source of traditional medicine for the rural population and are of high demand in the health care systems of this population when compared to modern medicine, ethno-medicine activities need special consideration and back-up (Abbiw, 1996) [1]. This is partly because modern medicinal services are either unaffordable or unavailable to the vast majority of local people due to lack of transport to and from health care centers.

Traditional medicinal plants are harvested mostly from wild stands which are in line with studies of Giday *et al.*, 2009 [7]. This could be the way through which such people could exercise their knowledge boldly. Encouraging people to grow medicinal plants in the home gardens, mixing with crops in farmlands and live fences is paramount important.

6. Conclusion and recommendations

In conclusion Mida Kegn district harbors diverse plant species. In this preliminary study medicinal plant species were recorded. However, the plant and the knowledge is facing considerable biological extinction due to a number of natural and anthropogenic activities. The main factors that threaten indigenous knowledge were secrecy of information on medicinal plants, oral based knowledge transfer and modernization of young generation to abandon traditional medicine and turning to modern medication. So,

- Further biological studies should also be conducted on the reported medicinal plant species of the study area so as to utilize them in drug development.
- Planting of multipurpose and endangered plants is beneficial.
- Awareness rising should be made among the healers to ensure its sustainable use.

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