

Full Length Research Paper

Medicinal plants in folk medicine system of Ethiopia

R. Hiranmai Yadav

School of Natural Resource Management and Environmental Sciences, College of Agriculture and Environmental Sciences, P.O. Box #337, Haramaya University, Dire Dawa, Ethiopia. E-mail: mayahiranbt@gmail.com.
Tel: +251919231748.

Accepted 18 February, 2013

Folk medicine encompasses the knowledge acquired by generations through indigenous methods of treatment. It comes from the herbal resources, animal and mineral parts which contribute to the treatment system with beliefs. It comprises the knowledge of endemic herbs transferred from one generation to the other as guarded secrets. There are magical and astrological influences invoked in this system that forms an integral part of the treatment. The magicoreligious beliefs and empirical knowledge from the natural environment and its effectiveness makes it friendlier giving a widespread use. Approximately 80% of Ethiopia's population relies on traditional medicine to cure ailments. The system is said to be an outcome of African, Greek, Arabic and Hebrew traditions that makes the system unique. Besides being environment friendly and sustainable it upholds the socio cultural development of the society. The long isolated history of Ethiopia also adds to the development of its unique indigenous pharmacopoeia.

Key words: folk medicine, herbals, medicinal plants, socio economic aspect.

INTRODUCTION

Ethiopia located in the Horn of Africa between 3 to 15°N and 33 to 48°E longitude is a country with varied climatic conditions. The temperature varies from 10°C to 45°C (Tamire, 1997). The country has diverse flora and fauna that are unique of which 12% are endemic. Even though the forest is declining in size and quantity, the contributions to the national and local economy from forest resources are of immense value (WBISP, 2004). Development of medicinal and aromatic plants and economically important products that can improve the socio economic status of people should be encouraged. Most of the traditional medicine used by different ethnic groups throughout the world is collected from the forest.

FOLK MEDICINE

The folk knowledge and traditions of Ethiopia utilize the herbal resources available in nature. The knowledge is transferred from generation to generation orally. It is more diverse based on the ecosystem and the household level health practices. The health practices that start from home remedies for primary health care to specialized healing traditions like bone setting, poison healers, delivery, and veterinary healers are found among various

communities. The herbal resources available in the nature are used by various healers. The treatment system involves plants, animal derivatives and mineral resources that are available in the nature. The countries with similar ecosystem nurture similar health practices. These practices indicate strong linkage between environment and health. The system is also known as indigenous medicine or ethno medicine. WHO global atlas of traditional, complementary and alternative medicine compiles comprehensive information on traditional medicine globally in terms of policy, regulation, financing, education, research, practice and use (Bodeker et al., 2005). These initiatives have been supported by WHO and African summit of heads of state, especially for research and integration in the management of HIV/AIDS, tuberculosis, malaria and other infectious diseases. Self regulatory bodies such as healers associations have been established in many countries (Kasilo et al., 2005).

FOLK HEALERS

Traditional medical knowledge around the world is integrated with the public for many health needs. Among

Table 1. Suri plant use: The same plant often has medicinal, ritual and utilitarian purposes.

S No	Plant name	Uses
1.	<i>Olea europaea</i> L. (subsp. cuspidata (Wal. ex DC) Ciffens)	Used against stomach problems, dysentery and in the beginning stages of malaria, but is also a ritual plant, e.g. used in the ceremony to initiate a new age-grade.
2.	<i>Ximenia americana</i> L.	Oil from the fruit kernel is applied to flesh wounds to prevent infections, also used by girls who have their ears or lips pierced (for later inserting the decorative ear and lip discs, a specific Suri custom).
3.	<i>Musa sapientum</i> L.	Orally taken as an abortion medicine
4.	<i>Tamarindus indica</i> L.	To treat stomach aches
5.	<i>Rhus natalensis</i> Beruh, ex Krauss	Used as a skin wound medicine
6.	<i>Evolvulus alsinoides</i> (L.)	Treating burn wounds of the skin
7.	<i>Carissa edulis</i> (Forsk.)	The plant is used by women to shorten their labour period just before delivery
8.	<i>Thunbergia ruspolii</i> Lindau	For poisonous snakebite
9.	<i>Ruellia palula</i> Jaeq	Snake medicine
10.	<i>Harrisonia abyssinica</i>	To gain physical strength
11.	<i>Croton Zambesicus</i>	Mental disturbance

the traditional healers, apart from general healers there are specialized people for bone settings, delivery and poison treatments. Most systems are a combined form of treatment with spirituality. The healers are mostly confined to different regions and the knowledge is transferred orally from one generation to the other or within communities. About 80% of the community relies on the traditional system of medicine. For example, the Suri (more widely known by outsiders as "Surma") are people who live since about 300 years as a distinct cultural-linguistic group in a hot lowland area of the present-day "Southern Nations, Nationalities and Peoples Regional State" of Ethiopia, bordering Sudan. Over a long period they exchanged goods and "cultural knowledge" - including that of local medicinal plants, remedies and ritual - with the neighbors, mainly the Dizi, Me'en, Mursi and Nyangatom peoples and with the emerging Ethiopian state since about 1900 (Jon Abbink, 2002). Few examples of their plant use with medicinal, ritual and utilitarian purposes are given in Table 1.

Traditional healing system

In the recent past there has been a growing interest in Traditional medicine/Complementary and Alternative Medicine (TCAM) and their relevance to public health both in developed and developing countries. Diversity, flexibility, easy accessibility, broad continuing acceptance in developing countries and increasing popularity in developed countries, relative low cost, low levels of technological input, relative low side effects and growing economic importance are some of the positive features of traditional medicine. In this context, there is a critical need to mainstream traditional medicine into public health care to achieve the objective of improved access to healthcare facilities. However, evidence suggests a

disparity between personal choices the public make in terms of integration of different medical systems and the TCAM policy formulation and their implementation.

"Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being." Further the term 'complementary' and 'alternative' medicine (and sometimes also non-conventional or parallel) are used to refer to a broad set of healthcare practices that are not part of country's own tradition, or not integrated into the dominant healthcare system. A list of wild plants used in this treatment system is given in Table 2.

SOCIO ECONOMIC ASPECT

Many of the major modern drugs such as quinine, salicylic acid, artemisinin have been discovered from folk knowledge. According to NAPRALERT database of the University of Illinois, Chicago 11, 74% of the 119 pure compound based modern drugs derived from plants have been based on leads provided by traditional medical knowledge and the modern applications are similar to the traditional ones (Farnsworth, 1988: 95). As the economic importance of traditional knowledge and medicinal plants based products and services are growing they provide employment opportunities to various sections of people. At the same time it raises concerns about availability of medicinal plants, increasing costs of herbal products in domestic market especially for marginalized population and a dilution of classical practices.

Large scale community interventions like home herbal gardens in India have demonstrated that many simple primary health care problems like fever, upper respiratory tract infections, gastro-intestinal problems such as diarrhea,

Table 2. Wild plants used in folk medicine.

S No	Plant name	Uses
1.	<i>Acacia nilotica</i> (L.) Delile	The fruits are given for diarrhea, hemorrhage, as sedative in labour, as a cure for sore gum and loose teeth and for diabetes by taking a teaspoonful before breakfast. The leaflets are chewed for nausea.
2.	<i>Achillea fragrantissima</i> (Forssk.) Sch. Bip	Infusion of the dry, or fresh, flowering herb is used by the Bedouin for the treatment of cough, aromatic bitter stomachic and anthelmintic
3.	<i>Adiantum capillus</i>	Diuretic, emollient, demulcent, expectorant, tonic, febrifuge; for treatment of obstructions of the liver and spleen. Concentrated decoction of the fronds is used as emmenagogue.
4.	<i>Adonis dentata</i> Del	Prevents heart failure, oedema and enlargement of the spleen. He used the drug as tincture, liquid extract or sweetened infusion, mixed with coriander or the drug may be chewed. It is also reported in cough mixtures and cardiotoxic preparations
5.	<i>Ambrosia maritima</i> L	Decoction of the plant is used for rheumatic pains, asthma, bilharziasis, diabetes and to expel renal stones. Flowering branches are used as stimulant, stomachic, slightly astringent, emollient, diuretic and for renal troubles.
6.	<i>Anastatica hierochuntica</i> L.;	Dried plant crushed with sugar and taken as energetic purge for cases of jaundice dried plant is soaked in water and the solution drunk by women at childbirth.
7.	<i>Anchusa hispida</i> Forssk	The plant can be used as a refreshing drink like tea. The decoction of the leaves is diuretic and is used in the treatment of rheumatism
8.	<i>Artemisia judaica</i> L.,	Infusion prepared from the flowering plant is used as stomachic, anthelmintic, expectorant, diaphoretic, analgesic, and antispasmodic in case of intestinal colic. Inhaled leaves relieve cold congestion, snakes are kept away by smoke of burnt branches.
9.	<i>Artemisia herba-alba</i>	Leaves and flowers febrifuge, calmativer for stomach, cough and cephalalgia; cures nervous troubles and calms the emotions; used for ophthalmic diseases; enters in mixtures for treating hemorrhagic wounds.
10.	<i>Balanites aegyptiaca</i> (L.) Del	Anthelmintic, purgative, vermifuge, emetic and in the treatment of boils, leucoderma, herpes, malaria, wounds, syphilis, cold and liver. The oil of fruit kernel is used for dressing wounds and in rheumatism
11.	<i>Bryonia cretica</i> L.	As a bitter tonic and to ameliorate the condition of diabetic persons. It is also used as a hydragogue cathartic and diuretic in pleurisy, dropsy, whooping cough, bronchitis and tonsillitis. Applied to the skin, it is irritant and may cause vesication.
12.	<i>Bryonia dioica</i> Jacq	Cathartic, diuretic, irritant to the skin. It is recommended for pleurisy, whooping cough and bronchitis and has been given in cases of dropsy. It is also used in rheumatism, depurative of blood, antitumor and for epileptic crises.
13.	<i>Calotropis procera</i> (Aiton) W.T. Ait.f.;	Used in veterinary medicine, antileprosy, Powdered dried leaves are vermifuge in small doses
14.	<i>Capparis spinosa</i> L.	Root bark, appetizer, purgative, anthelmintic, emmenagogue, analgesic and applied externally as cataplasm for spleen troubles. Bark is used for treatment of gout, rheumatism, laxative, expectorant and for chest diseases.
15.	<i>Centaureum pulchellum</i> (Swartz) Druce	A decoction is used for gastric and abdominal pain, hypertension, renal colic, rheumatic pains and for the elimination of stones from the kidney and urethra; healing agent for wounds in ointments for sciatica. An infusion of the herb is used for diabetes.
16.	<i>Cleome droserifolia</i> (Forssk.) Delile	Paste of powder used topically for treatment of wounds and for dermatitis. Powder (5 g.) taken before meal, for treatment of hyperglycemia (diabetes)
17.	<i>Colchicum ritchii</i> R. Br	Arthritis, rheumatism, gout, abdominal colics, emetic

Table 2 Contd.

a.	<i>Commiphora opobalsamum</i> (L.) Engl	Antiseptic, expectorant, added to gargles and moth washes
18.	<i>Cymbopogon schoenanthus</i> (L.) Spreng	As diuretic, emenagogue, diaphoretic stomachic, carminative, tonic, antirheumatic, and as an antidiarrheal
19.	<i>Cyperus rotundus</i> L.	Tubers are aromatic, stomachic in nervous gastralgia, dyspepsia, diarrhoea, emmenagogue, sedative, analgesic, in dysmenorrhoea, amenorrhoea, chronic neuritis, and to increase body weight
20.	<i>Juniperus phoenicea</i> L.	Dry leaves are used to cure mild skin inflammations for babies; dilator for urinary tracts, laxative, intestinal disinfectant, emmenagogue, help childbirth by increasing the contraction of the uterus, diaphoretic, sedative and for diarrhoea
21.	<i>Moringa peregrina</i> (Forssk.) Fiori	To treat headache, fever, abdominal pain and constipation, burns, back and muscle pains and during labour in childbirth
22.	<i>Origanum syriacum</i> L.	Dry leaves are used as spice, condiment and to relieve pain. Fresh herb is used with sesame seed and olive oil with sugar to make a special dish
23.	<i>Peganum harmala</i> L.	Leaves and flowers are used for rheumatism and stomach problems. Seeds are used as an anthelmintic and as a narcotic.
24.	<i>Pluchea dioscorides</i> (L.) DC	In the treatment of epilepsy in children, in colic, as carminative and as remedy for cold
25.	<i>Posidonia oceanica</i> (L.) Del	Treatment of obesity.
26.	<i>Primula boveana</i> Duby	Flower :As a nervine for headache, neuralgia, shaking of the limbs, as a "heart tonic" in vertigo and cardiac weakness. B- Root : As secretomotor and secretolytic expectorant in bronchitis, catarrh of the respiratory tract, coughs, colds and phlegm in the broncho-pulmonary system
27.	<i>Rumex vesicarius</i> L.	Used for hepatic diseases, constipation, calculi and bad digestion. It is cooling, laxative, stomachic, tonic and analgesic
28.	<i>Salvadora persica</i> L.;	Used for gonorrhoea, spleen, boils, sores, gum disease and stomachache. It is used for bites of poisonous animals
29.	<i>Solanum nigrum</i> L.	Leaf, root and stalk used for cancerous sores, leucoderma and wounds. Stem: young shoots eaten as pot herb, considered tonic for virility in men and for dysmenorrhoea in females, for dysentery, sore throat.
30.	<i>Solenostemma argel</i> (Del.) Hayne	cough, infusion of leaves for gastro-intestinal cramps, stomachic, anticolic, for colds, urinary tract, antisyphilitic
31.	<i>Thymus bovei</i> Benth	spasmolytic action, it is an important stomachic and carminative. It is also used as a diuretic, urinary disinfectant and vermifuge
32.	<i>Thymus capitatus</i> (L.) Link	use it in stomach diseases and cough
33.	<i>Tribulus terrestris</i> L.	Stem : for scabious skin diseases and psoriasis. Fruit: for congestion, headache, hepatitis, impotence, liver, ophthalmia, stomatitis, vertigo, recommended for kidneys, liver and vision. Seed: as abortifacient, aphrodisiac, astringent, diuretic, tonic, for abscesses, anaemia, coughs, fluxes, haemorrhoids spermatorrhea and stomatitis. Plant is recommended as anticancer.
34.	<i>Urtica pilulifera</i> L.	For curing sore joints by mixing the plant juice with oil. The contents of the stinging hair provide a cure for rheumatism, hemorrhage.
35.	<i>Ziziphys spinachristi</i> (L.) Desf	Used as astringent anthelmintic, antidiarrhoric, demulcent, depurative, anodyne, pectoral, stomachic, tonic, for tooth aches, tumors

dysentery, worm infestations, hepatitis, anaemia, arthritic conditions, and certain gynecological conditions can be managed at household level through simple herbal home remedies and early identification and interventions. Reproductive health and nutrition forms two important aspects of household care. Considerable health cost saving has been found through this program apart from health and nutrition benefits (Hariramamurthi et al., 2007). These and several such models attest to the potential of community interventions through TCAM for simple ailments.

The economic importance of plant gums resins, oils and other extracts in the generation of income to the government as a source of valuable foreign currency has been extensively demonstrated in Ethiopia. Employment opportunities have been generated throughout the year by the *Boswellia* products sub- sector include tapping and collection, transportation, processing (cleaning, sorting and grading), marketing of frankincense and guarding of storage facilities (Wubalem et al., 2002). At household level, studies carried out in one region of Ethiopia have shown that the gum resins business provides income about 3 times greater than the contribution of crop farming (Kindeya, 2002). They can contribute to the economic development rurally and healthcare methods globally.

Conclusion

The use of medicinal plants for treatment for humans and animals are practiced from time immemorial. These plants are collected mainly from forest and pasture ranges. Herbal products are globally accepted and marketed at a high rate. Ethiopia has a large unexploited potential to develop the herbal treatment system to a large scale industry. The vegetative resources that are unique to the country are dwindling due to continuous exploitation and pressure on the limited resources. They should be multiplied through medicinal gardens, proper handling practices and scientific development. These immense sources with sustainable utilization will lead to the development of economy and treatment practices that are natural. The conservation practices also play an important role. Therefore, in place of current practices of unsustainable and unscientific collection and processing, it should be made more systematic. The collection and export of the materials will generate income to the local communities along with being in a natural way. Medicinal and aromatic plants cultivation should be enhanced among functional capability dwellers and agriculturists by training them in identification, collection and processing of medicinal plants. They are significant in terms of

contribution to health support systems, generation of local income, foreign exchange earnings and contribution to biodiversity.

REFERENCES

- Bodeker G, Kronenberg F, Burford G(2007). Policy and Public Health Perspectives on Complementary and Alternative Medicine: An Overview in G. Bodeker and G. Burford (eds.), *Traditional, Complementary and Alternative Medicine Policy and Public Health Perspectives*, Imperial College Press, 2007 (b): 9-38.
- Farnsworth N (1988). Screening Plants for New Medicines. In: Wilson. E. O. (ed.), *Biodiversity*. National Academy Press, Washington D. C. , pp. 83-97.
- Hariramamurthi, G, Venkatasubramaniam P, Unnikrishnan PM, Darshan Shankar (2007). "Home Herbal Gardens-A Novel Health Security Strategy Based on People's Knowledge and Resources" in Gerard Bodeker and Gemma Burford eds., *Traditional, Complementary and Alternative Medicine Policy and Public Health Perspectives*, Imperial College Press, pp. 167-184.
- Jon Abbink (2002). Plant use among the Suri people of southern Ethiopia: a System of knowledge in danger? *AAP*, 70: 199-206
- Kasilo OMJ, Alley ES, Wambebe C, Chatora R (2005). "Regional Overview: Africa Region," in G. Bodeker, C. K. Ong, C. Grundy, G. Burford and K. Shein eds. *WHO Global Atlas on Traditional, Complementary and Alternative Medicine*, WHO Centre for Health and Development, Kobe, pp. 3-12
- Kindeya G, Bart M, Mitku H, Mitloehner R(2002). *Boswellia papyrifera* (Del). Hochst: a tropical key species in northern Ethiopia. Conference on International Agricultural Research for Development. October 9-11,Deutscher tropentag. Germany.
- Tamire H (1997). Desertification in Ethiopian Highlands. RALA Report No. 200. Norwegian Church AID, Addis Ababa, Ethiopia. pp. 162
- WBISP (Woody Biomass Inventory and Strategic Plan project(2004). Forest Resources of Ethiopia, Addis Ababa
- Wubalem T, Demel T, Mulugeta L, Girmay F (2002). *Boswellia* country report for Ethiopia. In: ChikamaiB., ed. Review and synthesis on the state of knowledge of *Boswellia* species and commercialization of frankincense in the dry land of Eastern Africa. FAO/EU/FORNESSA Publication. pp. 11-33.