

Ethnopharmacological communication

An ethnobotanical study of medicinal plants used by the Nandi people in Kenya

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Received 27 May 2007; received in revised form 24 November 2007; accepted 24 November 2007

Available online 5 December 2007

Abstract

Ethnopharmacological relevance: The study of local knowledge about natural resources is becoming increasingly important in defining strategies and actions for conservation or recuperation of residual forests.

Aims of the study: This study therefore sought to collect information from local populations concerning the use of Nandi Forest medicinal plants; verify the sources of medicinal plants used and determine the relative importance of the species surveyed.

Materials and methods: Data was obtained using semi-structured forms to record the interviewee's personal information and topics related to the medicinal use of specific plants. A total of 40 medicinal plants used locally for the treatment and/or control of human ailments were collected through interviews conducted with selected traditional doctors and professional healers.

Results: This study demonstrated that local people tend to agree with each other in terms of the plants use and that leaf material form the major component of plant parts exploited. The other harvested materials consist of stem bark, the roots and the whole plant, though at a lower intensity for making liquid concoctions from different plants. Majority of the remedies were prepared from a single species. In most cases, the mode of administration was oral. In the forest, some of the plants collected were scarce. This scarcity was attributed to indiscriminate logging, overexploitation, poor harvesting methods and current agricultural trends.

Conclusion: Conservation procedures and creation of awareness were identified as the main remedies to the current situation.

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Keywords: Ethnobotany; Kenya medicinal plants; Nandi people

1. Introduction

Kenya has about 42 different tribes, which have different cultures and beliefs. These differences have contributed to the high diversity of traditional knowledge and practices of the people, which among others; include the use of medicinal plants (Sidigia et al., 1990; Barrow, 1996). Plants have been used as a source of medicine to treat different ailments in East Africa and particularly Kenya (Kokwaro, 1993). Current estimates indicate that over 400 plant species are used for man-

agement of common diseases in East Africa (Kokwaro, 1993; Gachati, 1989). Rural communities are considered to be the most neglected area in terms of ethnobotanical studies (Prance, 1991). Despite the availability of modern medicines, most agro-cultural communities (either by choice or for lack of economic resources) still use and detain an extensive pharmacopoeia of native plants (Prance, 1991). Several ethno-botany studies have shown that up to 70% of the rural population still depends on traditional medicine as a primary healthcare source while only 30% rely on the conventional healthcare system (WHO, 2003). Majority of the traditional medicines are prepared from plants.

Despite its significant contribution to the society, especially in emergence of new diseases such as HIV/AIDS, and increased resistance to chemotherapeutical agents used in the treatment

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of condition such as malaria, leishmania and tuberculosis, traditional medicine has received very little attention in modern research and development. At the end of 19th Century, the colonial settlers in Kenya discredited and fought against the use of traditional medicine in schools and churches (Maki et al., 1999; Rekdal, 1999). Less effort has been put to upgrade the practice. It is only now that the Ministry of Health and Ministry of Culture in Kenya is showing some interest in promoting and developing it.

The Nandi community that inhabits the north, south and east sides of the South Nandi district is a majority tribe in Kenya. Most of the population in this region still relies on non-conventional, traditional agricultural and livestock production systems as a primary livelihood source, accounting for over 90% of the economic activities and district's gross income. These activities are favored by the suitability of land, and climatic conditions.

Major epidemiological problems confronting the Nandi population are malaria, schistosomiasis, diarrhea and respiratory diseases according to informants and personal observation (Trotter and Logan, 1986). However, most health centers hospitals are far displaced and communication system is poor. This has rendered modern health services inaccessible to the rural population. Majority of the population therefore resorts to traditional medicine as the primary healthcare source. Despite this long history of reliance on medicinal plants as a primary health care source, information is lacking on the utilization of medicinal plants by the Nandi people and their traditional medicinal practices remain unexplored. The current deforestation trends, which threaten the existence of these plants makes it inevitable that this information be made available.

The study of local knowledge about natural resources is becoming increasingly important in defining strategies and actions for conservation or recuperation of residual forests. This paper therefore reports on a section of our continuing study on the traditional knowledge of the Nandi people on medicinal plants and threats to traditional medicine practices in the area.

2. Materials and methods

2.1. Description of the study area

Ethnobotanical study was conducted in Aldai and Kaptumo divisions in Nandi district latitudes 0° and $0^{\circ}34''$ North and longitudes $34^{\circ}44''$ and $35^{\circ}25''$ East on the western part of Rift Valley province. The study area borders Kakamega district to the north-west, Uasin Gishu district to the north and East, Kericho district to the south-east, Kisumu to the south east and Vihiga district to the west (Anonymous, 1997–2002). With forest reserves occupying 54,487.4 ha.

The district has an area of 2873 km² with a forest cover of about 56,019 ha. South Nandi forest covers an area of 1800 ha with an altitude of 1700–2000 m (Kigomo, 1991). It has five administrative divisions. Aldai division occupies 567 km² and sub-divided into 12 locations and 38 sub-locations (Kigomo, 1991; see map (Fig. 1).

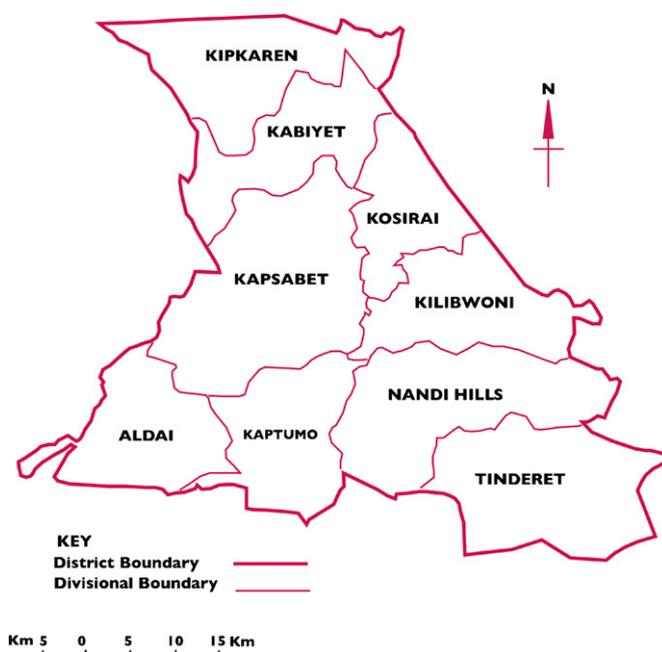


Fig. 1. Map of Nandi district showing Aldai division and Kaptumo division and the study areas.

Aldai division has the highest population density of 382 people in 567 km² according to population census conducted in 2001. The population growth rate stands at 2.9%. The high population density and growth rate can be attributed to suitable climate and weather conditions, which favor agricultural and related activities. High densities are also the result of influx of immigrants from the neighbouring densely populated Vihiga district, particularly in the areas of Kapkangani, Kobujoi and Serem to settle along the western border of the district, which falls within Aldai division. Others migrate to work in the tea estates (Anonymous, 1997–2002). Kaptumo division, one of the 38, has an area of 137.4 km², 4 locations and 14 sub-locations.

The area has a cool and moderately wet climate, receiving an average annual rainfall of about 1200–2000 mm. The long rains occur between March and June while the short rains occur between September and November. A dry spell is normal experienced between December and March but there is no single month in which the district records virtually no rainfall. On average, the lowest rainfall is received in the eastern and north-eastern part of the district while the highest is recorded in Kobujoi and Tindinyo areas to the south-west. The distribution of this rainfall is governed by the topography, altitude and the influence of the southwesterly winds from Lake Victoria (Anonymous, 1997–2002).

These people have mainly derived their livelihood from the forest since there is highly indiscriminate logging and cutting of trees and agricultural intensification as well as expansion. Other threats and importance of this forest include medium deforestation also logging (for commercial purposes and firewood (fuel) collection, forest grazing, crafts, medicine, rituals, shelter, cosmetics and food and honey gathering).

2.2. Data collection

Information on the use of medicinal plants was collected between March 2004 and February 2006 through field surveys in different remote villages of the District of Nandi. Purposive questionnaires were devised to identify the indigenous knowledge of plant-based remedies from local people. Information was gathered through semi-structured interviews that were held with selected knowledgeable elders (key informants). Emphasis was on both men and women herbal doctors (Davis and Wagner, 2003). Field surveys were conducted according to the life form, flowering period and season of utilization of plant products by local people. At the end of each interview, the plant specimens were collected dried using specified herbarium procedures before they were identified and preserved. Voucher specimens for all the medicinal plants were deposited at the National Herbarium for future reference. The nomenclature of all plants follows: for herbs (Agnew and Agnew, 1994), for trees, shrubs and lianas (Beentje, 1994). Plant-based remedies were presented with common disease name followed by botanical name of species, local name, English name, part used, preparation and use. A total of 63 knowledgeable traditional medicine practitioners (23 men and 40 women) between the ages of (30 and 72), chosen with the assistance of local administrators and community leaders served as key informants. Interview responses were recorded in a notebook. Sometimes, a tape recorder was used. Some photos were also taken when considered necessary.

2.3. Data analysis

Both descriptive and inferential statistics by using general linear model was employed to determine the level of threat to medicinal plants, informant data and factor of informants' consensus (Fic) values obtained from the questionnaires were employed (Heinrich et al., 1998). ICF values will be low (near 0) if plants are chosen randomly, or if informants do not exchange information about their use. Values will be high (near 1) if there is a well-defined selection criterion in the community and/or if information is exchanged between informants.

3. Results

3.1. The plants and their medical application

The survey gathered information on 40 plant species reported by the informants for their medicinal use (see Table 1). The reported species were distributed among 17 botanical families. Acanthaceae (10 spp.) was best represented in terms of the number of species, followed by Asteraceae (6 spp.), Amaranthaceae (4 spp.), Apocynaceae (4 spp.). All the medicinal plants were reported in their local names since the local communities know of them only by their local names. Nine species are used as remedies against human gastrointestinal problems, several species against cold and coughs, five species against skin diseases, and one species against snakebites and obesity. Analysis of the data revealed that *Lepidagathis scariosa* Nees, *Acanthus pubescens* (Oliv.) Engl, *Rhus natalensis* Krauss, *Carissa edulis*

(Forsk.) Vahl, *Periploca linearifolia* Dill. & Rich, *Basella alba* L., *Ehretia cymosa* Thonn, *Cassia didymobotrya* Fres., *Plantago palmate* Hook.f., *Warburgia ugandensis* Sprague, *Solanecio mannii* (Hoof.f.) C. Jeffrey and *Berkheya spekeana* Oliv. are applied to a wide range of ailments. They are used against five or more different ailments. The rest of the medicinal plants have one to four uses.

The vegetation, which is relatively homogenous is characterised by predominance of many plant families. In this study a total of 40 species distributed in 17 families were identified to be medicinal in Aldai region based on the interview with local practitioners. The 40 species studied account for 26.32% of the all plant species. At the Nandi forest, the predominant families' flora is Acanthaceae and Asteraceae. Of the 17 families listed, Acanthaceae, with 10 species (25%), are the most common, secondly Asteraceae, with 6 species (15%) and lastly other families.

3.2. Plant parts used and mode of preparation

The practitioners used the flowers and the leaves. Sometimes, the whole part of the plant is used including the roots and the stem bark. Usually, the plants are used when fresh or dry, essentially in the form of a decoction, maceration as an infusion in water. Sometimes ash infusion is used. In all these preparations, there is a standardized decoction in water, prepared with a handful of plants. However, there was a lack of precision in the determination of doses to be taken and it was a real drawback in the use of traditional medicine in Nandi. The majority of the remedies are taken orally in agreement with an earlier study it was also observed that most of the reported preparations in the area are drawn from a single plant; mixtures are used rarely. When analyzing the number of citations for the plant parts used to prepare local remedies, a preference for the use of leaves becomes noticeable (Table 1).

3.3. Route of administration and dosage

Thirty species of the total reported medicinal plants are taken orally, followed by five species which are external used (applied topically on skin) and five other species which are used both externally and internally application (Table 1). To improve the acceptability of certain remedies, which are bitter and are taken orally, some additives are frequently used. The juice prepared from the stems bark, leaves and roots, for instance, is usually taken with honey to reduce its bitterness. Most of the remedies were taken once or twice a day as a full dose. Although variants like age, physical and health conditions of the patient determined the dose given it was noted that there was still a lot of inconsistency among the informants on doses of certain remedies prescribed. There were no reports on side effects by the informants in all the medicinal plants studied.

4. Discussion and conclusions

The present research study have showed that traditional medicine is still playing a significant role in meeting the basic

Table 1
Medicinal plants used in Aldai division of Nandi south district

Local name (voucher number)	Specific name	Family	Habit	Parts used	Preparations	Ailments treated/uses
Chemurguiwet (PS 1/05)	<i>Asystasia schimperi</i> T.Anders	Acanthaceae	Herb	Leaves	Infusion (internal)	Cough, skin diseases
Chemurguiwetab suswek (PS 2/05)	<i>Dyschoriste radicans</i> Nees	Acanthaceae	Herb	Leaves	Infusion (internal & external)	Skin diseases, wounds, eye infections
Chemurguiwetab tegeltet (PS 3/05)	<i>Acanthus eminens</i> C.B.CL	Acanthaceae	Herb	Leaves	Infusion (internal & external)	Skin diseases, wounds, eye infections
Chemurguiwetab (PS 4/05)	<i>Dyschoriste thumbergii</i> (S. Moore) Lindau	Acanthaceae	Herb	Leaves	Infusion (internal & external)	Skin diseases, wounds, eye infections
Nyamdutiet (PS 5/05)	<i>Lepidagathis scariosa</i> Nees.	Acanthaceae	Herb	Leaves	Infusion (internal)	Antidiarrhoea, wounds, 'mireiwek', oedema, foot & mouth in livestock, pneumonia
Cheperenet (PS 6/05)	<i>Barleria grandicalyx</i> Lindau	Acanthaceae	Herb	Leaves	Paste (external)	Snake bites
Cheptereret (PS 7/05)	<i>Thunbergia alata</i> Sims	Acanthaceae	Herb	Leaves	Infusion (internal & external)	Cough, 'mireiwek', fopetus placement in the womb, backache
Kipkesio (PS 8/05)	<i>Justicia betonica</i> L.	Acanthaceae	Herb	Leaves, flowers	Ash (internal)	Cough, anti-diarrhoea, orchitis
Ndakariat (PS 9/05)	<i>Acanthus pubescens</i> (Oliv.) Engl.	Acanthaceae	Shrub	Leaves	Ash (internal)	Dry cough, pneumonia, chronic asthma, cancer, tonsils, flu, 'mireiwek'
Rokorabchepkimis/chepyochoit (PS 10/05)	<i>Justicia flava</i> Vahl	Acanthaceae	Herb	Leaves	Ash (infusion)	Sorcery, charms, ulcers, pneumonia
Tangaratwet (PS 11/05)	<i>Aloe kedongensis</i> Reynolds	Aloeaceae	Shrub	Leaves, roots	Infusion (internal & external)	Typhoid, skin diseases, malaria, colds, ear problems, wounds, coccidiosis
Chesirimiot/chesirimto (PS 12/05)	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Roots	Ash (internal)	Cough
Mbogat (PS 13/05)	<i>Amaranthus graecizans</i> L.	Amaranthaceae	Herb	Leaves	Paste (external)	Cancer, boils
Namgwet (PS 14/05)	<i>Cyathula schimperiana</i> non Moq	Amaranthaceae	Herb	Leaves, roots	Decoction (internal)	Malaria, antidiarrhoea, fungal infections
Ng'atumyat (PS 15/05)	<i>Cyathula cylindrica</i> Moq	Amaranthaceae	Herb	Roots	Decoction (internal)	Malaria, purgative, emetic
Kipng'etingwet (PS 16/05)	<i>Lannea schimperi</i> (A. Rich.) Engl.	Anacardiaceae	Tree	Bark	Decoction (internal)	Diarrhoea, pain stomach, chest problems
Siriati (PS 17/05)	<i>Rhus natalensis</i> Krauss	Anacardiaceae	Tree	Roots	Decoction (internal)	Venereal diseases, heartburn, abdominal pains, cold, cough, antidiarrhoea
Keliot (PS 18/05)	<i>Acokanthera schimperi</i> (A.DC.) Schweinf.	Apocynaceae	Shrub	Roots	Decoction (internal)	Venereal diseases (syphilis)
Legetetiot/tamuryekiat (PS 19/05)	<i>Carissa edulis</i> (Forsk.) Vahl.	Apocynaceae	Shrub	Roots	Decoction (internal)	Venereal diseases, epilepsy, malaria, heartburns, arthritis, sorcery, cancer
Mabondet (PS 20/05)	<i>Tabernaemontana stapfiana</i> Britten	Apocynaceae	Tree	Roots, bark	Decoction (internal)	Pneumonia, chest problems, aids in delivery
Nyakinchwet (PS 21/05)	<i>Landolphia buchananii</i>	Apocynaceae	Shrub	Leaves	Infusion (external)	Wounds, gonorrhoea, molluscides
Chepnambon/kipnamobon (PS 22/05)	<i>Culcasia falcifolia</i> Engl.	Araceae	Liana/climber	Leaves	Ash (internal)	Dry cough, ECF, oedema, epilepsy
Soiyet (PS 23/05)	<i>Polyscias fulva</i> (Hiern) Harms	Araliaceae	Tree	Bark	Decoction (internal)	Obesity
Simatwet (PS 24/05)	<i>Curroria volubilis</i> (Schltr.) Bullock	Asclepiadaceae	Liana/climber	Bark	Decoction (internal)	Aid in delivery, malaria

Table 1 (Continued)

Local name (voucher number)	Specific name	Family	Habit	Parts used	Preparations	Ailments treated/uses
Sinendet (PS 25/05)	<i>Periploca linearifolia</i> Dill. & Rich	Asclepiadaceae	Liana/climber	Roots, milky latex	Decoction (internal) & exudates (external)	Venereal diseases, warts, rituals, pneumonia, cancer, antidiarrhoea, fertility
Tilalwet (PS 26/05)	<i>Pteridium aquilinum</i> (L.) Kuhn Bracken	Aspidiaceae	Shrub	Leaves shoots	Infusion (external)	Skin diseases
Nderemiat (PS 27/05)	<i>Basella alba</i> L.	Basellaceae	Liana/climber	Roots, leaves	Decoction (internal)	Removal of after birth, vegetable, stomach pains, increase milk production
Ratinuet (PS 28/05)	<i>Kigelia africana</i> (Lam.) Benth.	Bignoniaceae	Tree	Bark, seeds, roots	Decoction (internal)	Skin diseases, ulcers, diabetes, purgative, diarrhoea
Sebetaiyat (PS 29/05)	<i>Spathodea campanulata</i> P. Beauv	Bignoniaceae	Tree	Sap	Infusion (internal)	Colds in children
Mororwet (PS 30/05)	<i>Ehretia cymosa</i> Thonn	Boraginaceae	Shrub	Leaves, roots	Infusion (internal)	Venereal diseases, pneumonia, epilepsy, dry cough, malaria, ECF, tonsils, mental problems, witchcraft, asthma, typhoid, wounds, aphrodisiac
Senetwet (PS 31/05)	<i>Cassia didymobotrya</i> Fres.	Caesalpinioideae	Shrub	Leaves, roots	Infusion (internal)	Cancer purgative, skin diseases, malaria, gonorrhea, ring worms, emetic, excess bile
Masiririet (PS 32/05)	<i>Plantago palmate</i> Hoof.	Campanulaceae	Herb	Roots	Decoction (internal)	Tonsils, pneumonia, eye problems, venereal diseases, typhoid, antidiarrhoea
Soget (PS 33/05)	<i>Warburgia ugandensis</i> Sprague	Canellaceae	Tree	Bark	Decoction (internal)	Pneumonia, tonsils, uvala problems, stomachache, constipation, fever
Isakiat (PS 34/05)	<i>Cleome gynandra</i> L.	Capparidaceae	Herb	Leaves, roots	Decoction (internal)	Vegetable, malaria, facilitates & removes afterbirth, stomach congestion
Chebara/chebartet (PS 35/05)	<i>Sonchus aspera</i> (L.) Hill	Asteraceae	Herb	Bulb	Juice (internal)	Tonsils, cough, 'mireiwek'
Chemamaiyat (PS 36/05)	<i>Senecio discifolius</i> Oliv.	Asteraceae	Herb	Leaves	Infusion (internal)	Chronic asthma, eye infection, ring worm
Chepililibiliotab oinet (PS 37/05)	<i>Chrysanthemum americanum</i> (L.) Vatke	Asteraceae	Herb	Whole plant	Ash infusion (internal)	Dry cough
Chepkurbet (PS 38/05)	<i>Solanecio manni</i> (Hoof.f.) C.Jeffrey	Asteraceae	Tree	Roots	Decoction (internal)	Cancer, pneumonia, cough, epilepsy, typhoid
Chepng'ombet (PS 39/05)	<i>Conyza subscaposa</i> O.Hoffm.	Asteraceae	Herb	Roots, leaves	Decoction (internal)	Obesity, breast cancer, tonsils
Chepnysoret (PS 40/05)	<i>Tagetes minuta</i> L.	Asteraceae	Herb	Leaves	Ash (external)	Insecticide, wounds, ulcers

healthcare need of the peoples of Nandi for various diseases (Table 1). It also provides information about some therapeutic uses of different medicinal plants. A total of 40 medicinal plants were recorded comprising of 17 families. From the field observation, it reveals that the commonly used taxonomic families with high percentage of medicinal plants are Acanthaceae (25%); Asteraceae (15%); Amaranthaceae (10%); Anacardiaceae (5%); Ascepiadaceae (5%); and Bignoniaceae (5%) (Table 2). This may be a reflection of the world wide high number of species found in this family, Asteraceae 19,085 and it stood out in the studies of Bennett and Prance (2000). These plants are normally herba-

ceous species that can either be cultivated or occur as weeds. Preference for their use may be related as much to their ready availability, for they are common in disturbed areas (Voeks, 1996), as to factors related to their biological activity. Based on evidence and availability theory, Stepp and Moerman (2001) suggest that these plants concentrate very active biological compounds as a function of their habit or of their life strategies. Much evidence has accumulated indicating that chemical and ecological factors orient the selection and use of medicinal plants in local communities in all parts of the world (Stepp, 2004).

Table 2
Diversity of medicinal plant species in Nandi district

Family	Number of medicinal plant species	Percentage of total species mentioned as medicine
Acanthaceae	10	25.0
Amaranthaceae	4	10.0
Anacardiaceae	2	5.0
Apocynaceae	4	10.0
Aloaceae/liliflorae	1	2.5
Araceae	1	2.5
Araliaceae	1	2.5
Ascepiadaceae	2	5.0
Aspiadiaceae	1	2.5
Basellaceae	1	2.5
Bignoniaceae	2	5.0
Boraginaceae	1	2.5
Caesalpinioideae	1	2.5
Campanulaceae	1	2.5
Canellaceae	1	2.5
Asteraceae	6	15.0
Capparadiceae/ Capparacea	1	2.5

In this study, various parts of the plants were utilized in preparation of herbal remedies in this area. However, in majority of the species (55%) the medicine were obtained from the leaves and (43%). Similar observations had already been recorded for other communities near forested areas, where vegetation is always green and leaves are abundant (Di Stasi et al., 2002). On the other hand, communities in dry regions tend to focus their attention on plant parts that are continuously available, such as the bark (Almeida and Albuquerque, 2000). As the plants in these localities are regularly exposed to long periods of drought and lose their leaves, bark and roots are more often used. Additionally, the preference towards leaves may be because leaves are the main photosynthetic organs in plants and that the photosynthates are translocated to other parts later like roots, barks, fruits and seeds. Hence act as reservoirs for photosynthates or exudates (Balick and Cox, 1996) which act as toxins for protection against devourers and some are of medicinal value to the human body. The use of roots is also dangerous to the existence of an individual plant as compared to the use of leaves or branches (Poffenberger et al., 1992; Abebe and Ayehu, 1993). This observed difference in usage of plant parts in different areas should be more closely investigated.

Most herbalists if not all claimed to administer remedies for malaria, cough and cold, pneumonia and other respiratory diseases. These were reported as the most prevalent diseases, which have high morbidity rates, and this concurs with (Anonymous, 1997–2002) report. The disease incidence may be due to cold temperatures as a result of high rainfall and consumption of untreated water. Other diseases mentioned to be common include; skin diseases, intestinal worms and rheumatism. Therefore the fact that more than one herbalist is using some medicinal plants for the same purpose might indicate the pharmacological effectiveness of these remedies.

The results of this study provided information an inventory of the most important plants used by Nandi people and on medici-

nal plants for possible on-farm conservation. Since most of them are shrubs and herbs (Fig. 1), they grow fast and therefore can provide a continuous supply of the medicinal products. When household needs are met the surplus can be sold for income generation. Domestication of medicinal plants is a suitable option for optimizing resource utilization, as well as decreasing over-dependence on wild habitats. Encouraging such domestication will reduce pressure on wild habitats such as Nandi south forest, forming part of the solution to sustainable management of these ecosystems. This is because it was demonstrated that local specialists in the Nandi community studied tend to agree with each other in terms of the plants used to treat human gastrointestinal, cold and coughs, skin diseases, and snakebites problems.

Acknowledgements

We are very grateful to the Maseno University for its financial support. We also thank the Nandi people for sharing generously their knowledge of medicinal plants with us.

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Letter to Editor

*Afr. J. Traditional,
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ISSN 0189-6016©2008

HERBAL TREATMENTS IN ALDAI AND KAPTUMO DIVISIONS IN NANDI DISTRICT, RIFT VALLEY PROVINCE, KENYA

Keywords: Ethnobotany; Kenya medicinal plants; Nandi people.

Dear Sir,

Ethno botanical study was done in Aldai and Kaptumo divisions in Nandi district situated on the western part of Rift valley province. It borders Kakamega district to the north–west, Uasin Gishu district to the north and East, Kericho district to the south-east, Kisumu to the south east and Vihiga district to the west (Anon, 1997-2002). With forest reserves occupying 54,487.4 hectares. The district lies within latitudes 0⁰ and 0⁰34” North and Longitudes 34⁰ 44” and 35⁰ 25” East. It occupies an area of 2,873 km² with forest reserves occupying 56,019 hectares. South nandi forest covering an area of 1800ha. It has an altitude of 1700-2000m (Kigomo, 1991). It has five administrative divisions. Aldai division occupies 567km² and sub-divided into twelve locations and 38 sub-locations (Kigomo, 1991). Aldai division has the highest population density of 382 people in 567 km² in 2001 and the same trend is expected to increase with a population growth rate of 2.9%. These people still perform herbal treatments for curing general disorders. For them, use of herbs is the cheapest way for curing various health disorders. A review of literature reveals that much work has been done on ethnomedicinal plants in Kenya and other parts of the world (Jain, 1991; Negi et al., 1993; Ole Sankan, 1995; Singh et al., 1997; Karehed and Odhult, 1997; Bussmann et al., 2006). But still there are some tribal pockets which could be surveyed for the search of new traditional medicines. We report the ethnomedicinal plants of Nandi district for the first time.

Ethnobotanical survey was done in different parts of Aldai division for search of new traditional herbal medicines in Nandi south district. A total of 60 practitioners were interviewed, these included males and females that depended on wild plants as sources of medicine either for self-medication or for treating others. Data was collected by interviewing 50% of the renowned herbalists (30 years and above) using stratified purposive random sampling. The plants were identified and the voucher specimens were deposited in the University of Nairobi Herbarium.

The survey gathered information on 25 medicinal plant species reported by the informants for their medicinal use.

1. *Asystasia schimperi* (Acanthaceae) T.Anders Local name: Chemurguiwet Use: leaves are used as infusion (internal) to treat cough, skin diseases
2. *Dryopteris marginalis* (L.) Kuhn (Aspidiaceae) Local name: Tilalwet Use: Leaves shoot is used as infusion (external) for skin diseases
3. *Pteridium aquilinum* (L.) Kuhn Bracken (Aspidiaceae) Local name: Tilalwet Use: leaves shoot is used as infusion (internal) for skin diseases
4. *Dyschoriste radicans* Nees (Acanthaceae) Local name: Chemurguiwetab suswek Use: leaves is used as infusion (internal & external) for skin diseases, wounds, eye infections
5. *Lepidagathis scariosa* Nees. (Acanthaceae) Local name: Nyamdutiet Use: leave is used as infusion (internal) for antidiarrhoea, wounds, oedema, foot and mouth in livestock, pneumonia
6. *Barleria grandicalyx* Lindau (Acanthaceae) Local name: Cheperenet Use: leaves is used as paste (external) for snake bites
7. *Thunbergia alata* Sims (Acanthaceae) Local name: Cheptereret, Use: leaves is used as infusion (internal & external) for cough, backache

8. *Justicia betonica* L (Acanthaceae) Local name: Kipkesio Use: leaves and flower ash (internal) are used for cough, anti-diarrhea, orchitis
9. *Acanthus pubescens* (Oliv.)Engl (Acanthaceae) Local name: Ndakariat Use: leaves ash (internal) are used for cough, pneumonia, chronic asthma, cancer, tonsils, flu (mireiwek')
10. *Justicia flava* Vahl (Acanthaceae) Local name: Rokorabchepkimis/chepyochoit Use: leaves ash (infusion) are used for sorcery, charms, ulcers, pneumonia
11. *Aloe kedongensis* Reynolds (Aloeaceae) Local name: Tangaratwet Use: leaves and roots infusion (internal & external) are used for typhoid, skin diseases, malaria, colds, ear problems, wounds, coccidiosis
12. *Achyranthes aspera* L. (Amaranthaceae) Local name: Chesirimiot/Chesirimto Use: root ash (internal) is used for cough
13. *Amaranthus graecizans* L (Amaranthaceae) Local name: Mbogiat Use: leaves are used as paste (external) for cancer, boils
14. *Cyathula schimperiana* non Moq (Amaranthaceae) Local name: Namgwet Use: leaves and roots are used as decoction (internal) for malaria, antidiarrhoea, fungal infections
15. *Cyathula cylindrica* Moq (Amaranthaceae) Local name: Ng'atumyat Use: roots is used as decoction (internal) for malaria, purgative, emetic
16. *Lannea schimperi* (A.Rich.)Engl. (Anacardiaceae) Local name: Kipng'etingwet Use: bark is used as decoction (internal) for diarrhoea, pain stomach, chest problems
17. *Rhus natalensis* Krauss (Anacardiaceae) Local name: Siriat Use: roots is used as decoction (internal) for venereal diseases, heartburn, abdominal pains, cold, cough, antidiarrhoea
18. *Acokanthera schimperi* (A.DC.) Schweinf. (Apocynaceae) Local name: Keliot Use: roots is used as decoction (internal) for venereal diseases (syphilis)
19. *Carissa edulis* (Forsk.)Vahl. (Apocynaceae) Local name: Legetetiot/Tamuryekiat Use: roots is used as decoction (internal) for venereal diseases, epilepsy, malaria, heartburns, arthritis, sorcery, cancer
20. *Tabernaemontana stapfiana* Britten (Apocynaceae) Local name: Mabondet Use: roots and stem barks are used as decoction (internal) for pneumonia, chest problems, aids in delivery
21. *Landolphia buchananii* (Apocynaceae) Local name: Nyakinchwet Use: leaves is used as infusion (external) for wounds, gonorrhoea, molluscides
22. *Culcasia falcifolia* Engl. (: Araceae) Local name: Chepnamobon/Kipnamobon Use: leaves is used as ash (internal) for dry cough, ECF, oedema, epilepsy
23. *Polyscias fulva* (Hiern) Harms (Araliaceae) Local name: Soiyet Use: bark is used as decoction (internal) for obesity
24. *Curroria volubilis* (Schltr.) Bullock (Asclepiadaceae) Local name: Simatwet Use: bark is used as decoction (internal) for aid in delivery, malaria
25. *Periploca linearifolia* Dill. & Rich (Asclepiadaceae) Local name: Sinendet Use: roots, milky latex is used as decoction (internal) & exudates (external) for venereal diseases, warts, rituals, pneumonia, cancer, antidiarrhoea, fertility

The survey provides a documentation of 25 plants used by the people of Nandi district to treat various ailments. The plants are generally used in stomach disorders, skin diseases, fever, obesity, ulcer, respiratory diseases, venereal diseases, malaria, eye-diseases and skin diseases among others. These medicinal plants were only found in the wild where they are over harvested and hence there is need of training on cultivation and conservation of medicinal plants. It was noted that continued cutting of plants for different reasons has resulted in scarcity of some medicinal plants in the study area (e.g. *Rhus natalensis* Krauss). In addition, increasing need to use more herbicides in agricultural land and the continued use of farming plots for cultivation without leaving some fallow lands because of over-population could be potential threats to the existence of the herbal medicinal plants normally growing in agricultural fields in the area. Therefore, there is a greater need to develop a garden of medicinal plants of the area. The tribal people can also be encouraged to take up this job as an income generation activity.

We are thankful to Maseno University for its financial support. We also thank the Nandi people for sharing generously their knowledge of medicinal plants with us.

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