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## **Ethnobotanical survey and documentation of medicinal plants used by abagusii traditional healers in the treatment of diarrhoea and other common ailments in Kenya**

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### **Abstract**

Medicinal plants form the backbone of herbal medicine and their value is not only limited to their direct use as therapeutic agents but also as primary resources for the manufacture of drugs.

It is significant to systematically document the traditional medicinal knowledge of plants with therapeutic value since it can disappear with time due to the naturally occurring mortality and over-exploitation by humans. An ethnobotanical survey of plants used by Abagusii Traditional Healers of South Western Kenya in the treatment of diarrhoea and other common ailments was carried out. A total of 48 plants belonging to different families and genera were botanically identified. Their vernacular names, the disease conditions that they treated and method of preparation were recorded. The results showed that Abagusii traditional healers have an extensive knowledge of their flora. Further, the results also indicated that the healers used some plants in the treatment of diarrhoea and other common ailments or disease conditions. Therefore, there is need for the recognition and restoration of indigenous knowledge on traditional remedies and medicinal plants in order to enhance sustainable use of natural resources.

**Keywords:** Traditional Healers, Diarrhoea, Ailments, Abagusii, Kenya.

### **1. Introduction**

Globally, approximately nine million children (under the age of five years) die annually as a result of diarrhoea <sup>[1]</sup>. Severe diarrhoea is also related to HIV/AIDS conditions, as immune-compromised infected people are susceptible to opportunistic infections. South Africa is one of the highest HIV infection rates in the world, with KwaZulu-Natal being the worst affected province <sup>[10]</sup>. Under these conditions diarrhoea is a major concern to resident rural communities. A study on traditional remedies around the Eastern Cape region of South Africa demonstrated that diarrhoea was one of the most prominent diseases treated with traditional medicines <sup>[2]</sup>. According to <sup>[8]</sup>, anti-diarrhoeal plant extracts have antispasmodic properties, delay gastrointestinal transit, suppress gut motility, stimulate water adsorption and/or reduce electrolyte secretion.

In Kenya, the use of herbal medicine and the so-called complementary and alternative therapies is increasing dramatically <sup>[12]</sup>. This is because of the many constraints limiting access to modern medicine as well as cultural and social reasons that have contributed to the persistence of traditional medicine even with the advent of modern medicine. Medicinal plants form the backbone of traditional medicine and their importance is not only limited to their direct use as therapeutic agents but also as starting materials for the synthesis of drugs and as lead models for pharmaceutically active compounds <sup>[5]</sup>. According to <sup>[7]</sup>, diminishing economic resources due to high poverty levels and increased disease burdens have made allopathic medicine prohibitively expensive, thus positioning the harvesting of medicinal plants for personal use a less expensive alternative.

### **2. Materials and Methods**

#### **2.1 Description of the study area**

The study was conducted in Kisii and Nyamira (Gusii) Counties of Kenya.

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Kisii and Nyamira Counties lie between latitude 0° 35' and 1° 88' South and longitude 34° 03' and 35° 05' east. Kisii and Nyamira Counties covers total area of 2214.3 km<sup>2</sup> and a population of 1,879,839 inhabitants, based on population census of 2009. Over 67% of this population is living below the poverty line [3]. There are fourteen administrative sub-counties within the two counties namely: Manga, Masaba North, Borabu, Nyamira North, Nyamira South, Gucha, Gucha South, Kisii South, Kisii Central, Marani, Masaba South, Nyamache, Sameta and Kenyena. More than 70 percent of the population is involved in agriculture related activities as a means of livelihood thus the need for more investment in agriculture. Main economic activities of the area include: maize farming, tea production, brick making and dairy farming [3].

## 2.2 Ethnobotanical Survey

An ethno-medical survey was carried out in both Nyamira and Kisii Counties in South West Kenya. A number of villages in the study area were visited. The information on the ethno- medical practices gathered from the traditional

healers was entered into questionnaires and field notebooks. The healers were interviewed about their knowledge, methods of diagnosis, preparation of herbal portions and the treatment of diseases. The specific plant part(s) used along with the methods of preparation were recorded. The plant specimens were collected and pressed in a plant press and placed in the herbarium to dry under room temperature. Their vernacular names were recorded while in the field. They were then identified by consulting taxonomists and guide books. For each plant specimen collected, the vernacular name, botanical name and ethno medical uses(s) and method of preparation of the medicinal portion were documented.

## 3. Results

The survey documented 48 plant species which were used to treat diarrhoea and other common ailments by the rural people in the study area (Table 3.1). All the plant samples collected were growing either in the households or in the peripheral area of the homestead and were available all year round.

**Table 3.1** Sampled plant species used for the treatment of diarrhea, other common ailments and method of preparation

Family Name/ Botanical Name/Vernacular Name	Part(s) used	Medicinal use(s)	Method of Preparation
ALOEACEAE/ <i>Aloe vera</i> (L.) Burm. f. / Omonyaineke	Whole plant	Diarrhoea, skin wounds,	Juice
AMARANTHACEAE/ <i>Achyranthes aspera</i> L./Esarara	Whole plant	Diarrhea, stomach upsets and toothache	Burnt ash
AMARANTHACEAE/ <i>Rhus vulgaris</i> Meikle; Obosangura	Fresh fruit; root; stem	Diarrhoea, diuresis, wounds, and toothache	Decoction
ASPLENIACEAE/ <i>Dryopteris filix-mas</i> Schott/Eengwe	Rhizome/ root	Diarrhea, Anthelmintic	Powder
BASELLACEAE/ <i>Basella alba</i> L./ Enderema	Leaves	Diarrhoea, Constipation	Macerate
CACTACEAE/ <i>Pachycereus pecten-aboriginum</i> L (exotic): Omobimbera ng'umbu	leaves	Diarrhoea, wound healing	Macerate
CAESALPINACEAE/ <i>Cassia occidentalis</i> L. (Syn <i>Senna occidentalis</i> (L.) Link.)/Omote ogotioka	Roots; leaves	Fever, snake- bite and kidney problems	Decoction; poultice
CAMPANULACEAE/ <i>Lobelia gibberoa</i> Hemsl./Omomoa (Etumbato enyegarori).	Whole plant	Stimulant, diaphoretic, skin diseases, chronic rheumatism and gout.	Infusion; decoction
CANELLACEAE/ <i>Warburgia ugandensis</i> Sprague/Esoko (Omonyakige)	Roots; bark	Chest pains	Decoction
COMBRETACEAE/ <i>Combretum molle</i> G. Don./Kamukira	Leaves	Stomachache and coughs	Decoction
COMMELINACEAE/Rikongiro	Leaves	Diarrhoea, Fevers	Decoction
CONVOLVULACEAE/ <i>Ipomoea batatas</i> L. (exotic) /Amanyabwari	Leaves	Diarrhoea, Antihelmintic	Macerate
CRUCIFERAE/ <i>Brassica oleracea</i> L /Ekabichi nyamato	leaves	Diarrhoea, Gastro-duodenal ulcers, diabetes	Fresh juice
CUCURBITACEAE/ <i>Mormodica foetida</i> Schumach /Egwagwa	Buds	Diarrhoea, Thrush, stomachache	Decoction
CYPERACEAE/ <i>Cyperus rotundus</i> L./Endwani	Bulb	Fevers	Decoction
EUPHORBIACEAE/ <i>Croton macrostachysus</i> Del. /Omosocho	Leaves	Diarrhoea and dysentery	Infusion
EUPHORBIACEAE/ <i>Euphorbia hirta</i> L/Obwaranse	leaves	Diarrhoea, thrush	Infusion
GRAMINEAE/ <i>Agropyron repens</i> (L.) Beauvois/Ekenyambi	rhizome	Diarrhoea, Cystitis	Macerate
LABIATAE/ <i>Ajuga remota</i> Benth./ Omosinyonta	Leaves; stem	Diarrhoea, Constipation	Decoction
LABIATAE/ <i>Leonotis nepetifolia</i> R.Br. /Risibi rienyoni	leaves	Diarrhoea, Stomachache	Infusion
LILIACEAE/ <i>Gloriosa superba</i> L./Omorero bwenyang'au	Roots	Diarrhoea, indigestion, aphrodisiac and gouts	Decoction; infusion
MALVACEAE/ <i>Abutilon mauritiumum</i> (Jacq.) Medic./ Omorobianda	Leaves; roots	Diarrhoea, stomach cramps and bronchitis	Infusion; decoction
MELIACEAE/ <i>Ekebergia capensis</i> Sparm./Omonyamari;	Bark	Diarrhea, Antihelmintic	Decoction
MELIANTHACEAE/ <i>Bersema abyssinica</i> Fres/Omobamba	Roots; bark	Antihelmintic, Diarrhoea and epilepsy	Decoction
MIMOSACEAE/ <i>Acacia Senegal</i> L./Omonyenya omwegarori	whole	Diarrhoea, sore throat	Gum
MIMOSACEAE/ <i>Acacia nilotica</i> (L.) Del./Omonyenya	Whole tree	Diarrhoea and sore throat	Gum
MIMOSACEAE/ <i>Acacia Senegal</i> L./ Omonyenya omwegarori	Whole plant	Diarrhoea	Decoction
MIMOSACEAE/ <i>Ficus natalensis</i> Hochst./Omogumo	Leaves	Diarrhoea and skin diseases	Ash
MIMOSACEAE/ <i>Ficus sansibarica</i> Warb./Omoko	Leaves	Diarrhea and skin diseases	Infusion; decoction
MIMOSACEAE/ <i>Ficus sur</i> Forssk/Omoraa	Leaves	Diarrhoea	Ash
MYRSINACEAE/ <i>Maesa lanceolata</i> Forssk /Omoterere	Leaves	Diarrhoea and dysentery	Decoction

MYRTACEAE/ <i>Rhus vulgaris</i> /Ripera	Leaves	Diarrhoea and dysentery	Decoction
OXALIDACEAE/ <i>Oxalis latifolia</i> L. / Enyonyo	Leaves	Diarrhea and inflamed rectum	Macerate
PAPILIONACEAE/ <i>Indigofera arrecta</i> A. Rich./ Omocheo	roots	Diarrhoea and Stomachache	Infusion
PAPILIONACEAE/ <i>Kotschyia africana</i> Endl./Omosing'oro	roots	Diarrhoea and Stomach problems	Decoction
PAPILIONACEAE/ <i>Phaseolus vulgaris</i> L./Ching'ende	Green pods	Edema; gout	Decoction
PAPILIONACEAE/ <i>Sesbania sesban</i> (L.) Merrill var. <i>nubica</i> Chiov./Omosabisabi	leaves	Diarrhoea and Stomachache	Infusion
PROTEACEAE/ <i>Fauera rochetiana</i> (A.Rich.) Pic. Ser. /Omosasa	rhizome	Diarrhoea and Expulsion of intestinal parasites	Powder
RHAMNACEAE/ <i>Rhamnus prinoides</i> L' He'rit./Omong'ura	roots	Diarrhoea and Indigestion	Decoction
RUBIACEAE/ <i>Rubia cordifolia</i> L./ Eng'urang'uria	Roots; leaves	Diarrhoea, Stomachache and skin rashes	Decoction
RUBIACEAE/ <i>Vangueria apiculata</i> K. Schum./ Omokomoni	Leaves; roots	Diarrhoea, Stomachache, intestinal worms and scurvy	Infusion; decoction
RUTACEAE/ <i>Citrus aurantium</i> L. ( <i>Citrus Union</i> L.) Burn, (exotic)/Ritunda riroro	Leaves; flowers	Diarrhoea, Insomnia and stomach spasms	Infusion; decoction
RUTACEAE/ <i>Clausena anisata</i> (Willd.) Benth. / Omonyansuri; bites	roots	Diarrhea, Coughs, stomachaches and paralysis	Decoction; infusion
RUTACEAE/ <i>Toddalia asiatica</i> (L.) Lam./Ekenagwa ekiagarori	roots	Diarrhoea, Coughs, colds and stomachache	Decoction
TILIACEAE/ <i>Triumfetta brachyceras</i> K. Schum. (Syn <i>Triumfetta macrophylla</i> K. Schum.) /Ekemiso	leaves	Diarrhoea	Infusion
THEACEAE/ <i>Thea sinensis</i> L./ Echae	leaves	Diarrhoea	Infusion
VERBENACEAE/ <i>Lantana camara</i> L./Obori bw'enyoni	Leaves	Diarrhoea and Stomachache	Infusion; decoction
ZINGIBERACEAE/ <i>Zingiber officinale</i> Roscoe /: Entangausi	Tuber	Diarrhoea, lack of appetite, bloated stomach and flatulence	Infusion

#### 4. Discussion

Information on the general popularity of plant medicines among the Abagusii was lacking and there is no way in which such information can be deduced from this kind of study unless the traditional healing practices inherent in this group are assessed. However, it was noted that most of the Abagusii are increasingly shifting to the use of plant medicines and this could be attributed to the fact that Western medicines are very expensive due to the rising cost of drugs and the negative experiences (or disillusion) with modern drugs. Additionally, the modern health care system that has been experienced by most individuals also determines the type of medication this community can access affordably.

In support of these findings, [6] while carrying out a related study observed that a cosmopolitan urban area in Kenya, 97.45% of the local people use herbal preparations (41 plant species) to treat diarrhoea. Similarly, [9] recorded 28 plant species which are traditionally used by a rural population in the Parinche valley in India to treat diarrhoea.

The study findings are in agreement with those obtained by [1], that medicinal plants play an important role in the primary health care system of the rural people in northern Maputaland, KwaZulu-Natal. The authors further observes that care-givers in the rural homesteads generally treat the same ailment by using a diverse range of plants which is primarily dependent upon plant availability in their area. According to [4], the concept of treatment is based on the principle that the wider the choice of plant, the better the chance of a cure.

#### 5. Conclusion

Among the Abagusii community, traditional cures are often used before turning to Western medicine and vice versa. The majority of the people prefer herbal medicine because it is familiar (tradition and past experience) and less expensive than antibiotics in pharmacies and markets.

An important observation that was made in this study concerns the rapid disappearance of many indigenous medicinal plants. Some of the factors responsible for this disappearance of medicinal plants are population pressure on land, trees are felled for timber, charcoal and other commercial uses. The pattern of land use has also changed. The land is grabbed and used in ways that are not sustainable.

#### 6. Recommendations

The recognition and restoration of indigenous knowledge on traditional remedies and medicinal plants in order to enhance sustainable use of natural resources.

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#### 8. Conflict of interest

“The author(s) declare(s) that there is no conflict of interest.”

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