

## Research Article

# Medicinal Plants Used in Paediatric Health Care in Namungalwe Sub County, Iganga District, Uganda

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## Abstract

**Background:** An ethnobotanical study was carried out in Namungalwe Sub County, Iganga District Eastern Uganda, to document medicinal plant species used in disease management among children.

**Methods:** Ethnobotanical data was collected through interviews with households and key informants, Focus Group Discussions and the Snow ball technique. This was complemented by field observations and photography.

**Results:** A total of 61 plant species and one mushroom species, *Termitomyces microcarpus* were reported to be used as medicinal plants used in the disease management among children. These species belonged to 36 families and 58 genera. The most commonly mentioned medicinal plant species were *Vernonia amygdalina* Delile, *Chenopodium opulifolium* Schrad. ex W.D.J.Koch & Ziz and *Albizia corialia* (Schum. & Thonn.) Benth. Most of the medicinal plant species belonged to the family Leguminosae (29.7%). The most commonly used plant life forms for paediatric health care were herbs (45.2%), and leaves (53.1%) were the most used plant parts. Most of the medicines were prepared as decoctions. Malaria and diarrhoea were the most frequently occurring ailment among children.

**Conclusion:** There is diversity of traditional knowledge on medicinal plants used in the management of ailments among children in the study area. Mothers and other care takers in homes are the custodians of this knowledge.

Key words: Traditional Medicine, Traditional Knowledge, Children/Paediatric, Disease management

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## **Introduction**

Approximately 10 million children under 5 years of age were reported to die annually throughout the world, mostly in developing countries [1]. In Uganda, 70% of overall child mortality was reported to be due to malaria (32%), prenatal and neonatal conditions (18%), meningitis (10%), pneumonia (8%), HIV and AIDS (5.6%) and malnutrition (4.6%) [2]. Of every 1000 children born in sub-Saharan Africa, approximately 170 die, compared with less than 10 of those who are born in developed countries [1]. In 2010, the Uganda national under-five mortality rate stood at 137 deaths per 1,000 live births and the infant mortality rate at 5 deaths per 1,000 live births [2].

Despite the presence of a health centre III unit (Namungalwe hospital) and three other health center II units in Namunkesu, Namunsaala and Kawete, in Namungalwe Sub County there is still limited utilisation of these facilities [2]. Disease management among women and children is dependent on herbs first and in case the condition deteriorates, then they seek services from modern health facilities [7]. The extensive use of traditional medicine, mostly medicinal plants, in rural Uganda is because medical facilities are far, people are poor and cannot afford western medicine, socio-cultural barriers, the fact that traditional medicines have a wide acceptance, inadequate medicines and other medical supplies, shortage and low motivation of human resource [2;11].

Over 80% of the world's population depends on medicinal plant species to meet their day-to-day healthcare needs [5]. Rural household of Uganda rely heavily on plant resources for food and herbal medicine [6]. The use of traditional medicine in rural Ugandan population for day-to-day health care needs is close to 90% [7]. In Uganda, 80% of the mothers use traditional medicine to provide health care for themselves and their children [8]. Mothers have been reported to be the most important health worker for children [9, 10]. There is need to document traditional knowledge on plant medicines used in disease management among the children in Uganda, because they are often neglected or not given priority.

## Method

### Study area

This study was carried out in the villages of Mwendanfuko, Bulanga and Nabikoote in Namungalwe Sub County, Kigulu County, Iganga District (Figure 1), between June 2009 and August 2009. Iganga District is located in south-eastern Uganda between longitudes 33°10' East and 34°00' East and latitudes 0°06' North and 1°12' North and covers an area of 1039 km<sup>2</sup> [12]. It is occupied by Lusoga speaking group of people. The main economic activity is agriculture with crops such as potatoes, bananas, rice, coffee, maize, millet and sorghum among others being grown [12]. The vegetation type is predominantly grasslands and a few wetlands [13].

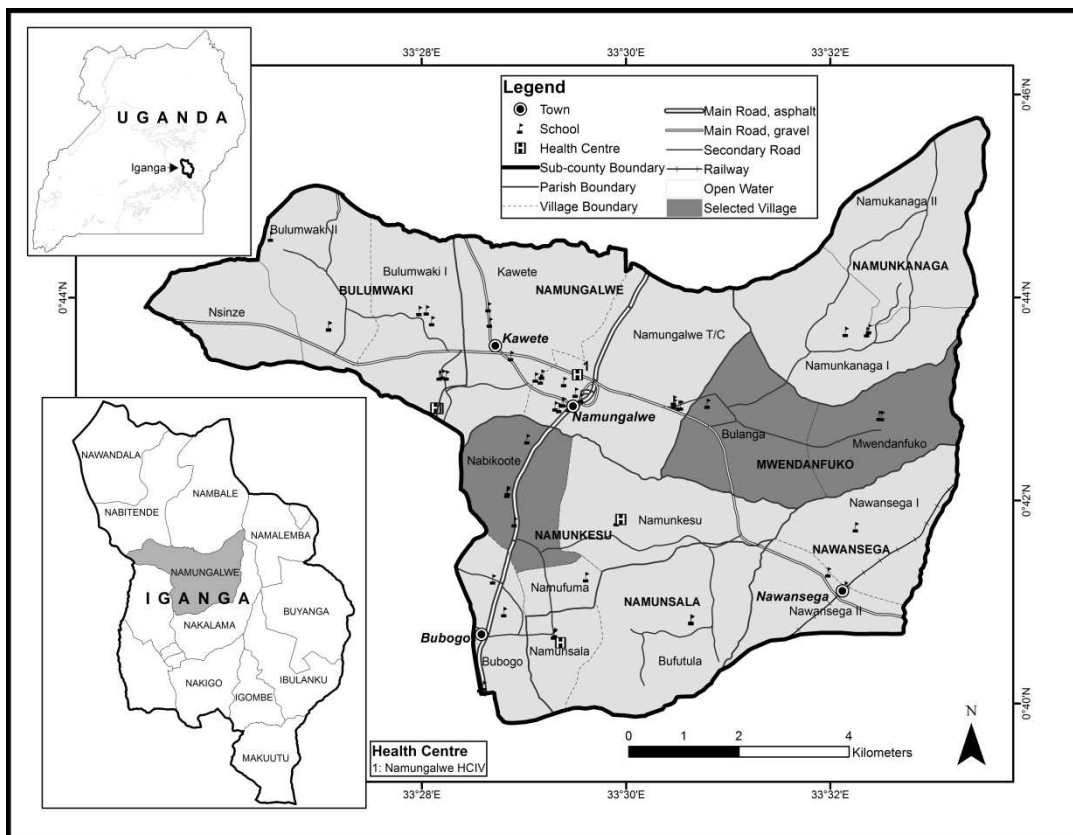


Figure 1 Map of Uganda showing Iganga district and Namungalwe Sub County

### Data collection

Ethnobotanical data was collected using semi-structured interviews, and questionnaires, direct observations, Focus Group Discussions (FDG) and field walks as described by Martin [14]. Prior to entry into the local community, the study was first introduced to the district authorities for permission to be granted. Prior informed consent was obtained from the respondents. Three research assistants

were hired, from each of the villages to facilitate easy entry into the community and to help in interpreting the cultural norms and translating hidden meanings during interviews.

The respondents interviewed included household heads, their spouses or older children, and Traditional Medicine Practitioners (TMP's) and Traditional Birth Attendants' (TBA's). The TMP's were selected using the Snow ball technique. During the process, a prominent healer was identified with the assistance of the local authorities through their association. The identified healer then recommended and referred us to other knowledgeable healers whom we also interviewed. A total of 6 traditional healers and 5 TBA's were interviewed during this process. The households were selected using a systematic random sampling design. The first household as randomly selected in each of the villages. The next households were selected every after the third household along a road or trail. Three FDG's were held with key informants in each of the villages. The key informants included mothers, traditional birth attendants and some elders. Each of the FGD's had an average of 8 respondents. The questionnaire and checklist focused on plants used in the management or treating diseases among children below the age of 5 years, the medical condition they treat, part used and the methods of preparation, their conservation status, and the socio-economic characteristics of the respondents among others.

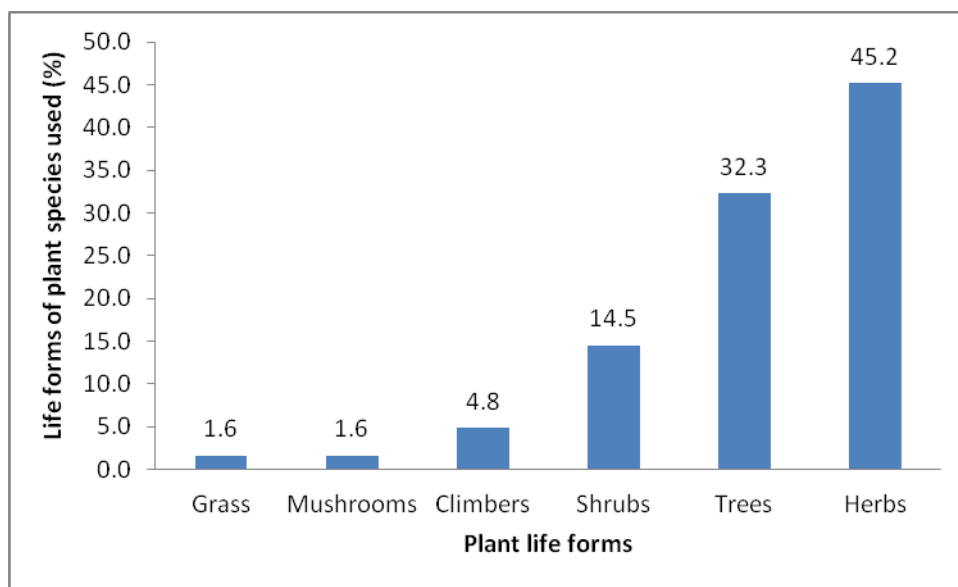
#### **Collection of voucher specimens**

Plant voucher specimens were collected and are deposited at the Makerere University Herbarium for identification, according to standard procedures described by Martin [14], and classification, basing on the database at <http://www.theplantlist.org>.

#### **Results**

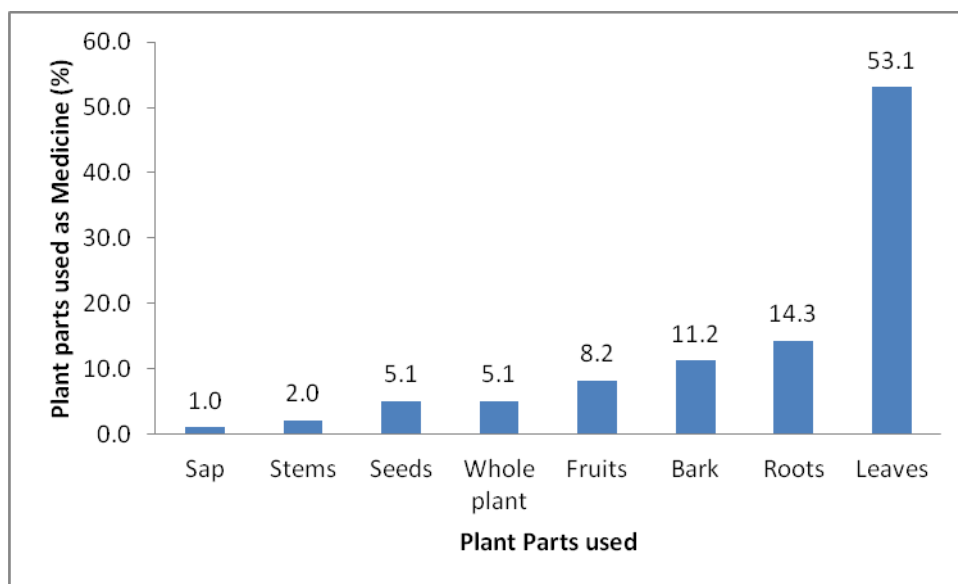
A total of 102 people aged between 8-80 years were interviewed. The majority of the respondents (54%) were females. Most of the respondents (92%) were Basoga by tribe and were mainly farmers with low level primary education.

A total of 61 plant species and one fungi *Termitomyces microcarpus* were reported to be used in the disease management among children. These species belonged to 36 families and 58 genera. Leguminosae (11) had the most number of plant species, followed by Compositae (4), Solanaceae (3) and Cucurbitaceae (3) families (Table 1). An additional 4 plant species were also recorded, but identification was not possible, because we were not able to obtain voucher specimens from the field.



**Figure 2: Plant life forms**

Herbs (45.2%) were the most commonly used plant life forms in disease management, followed by trees (32.3%). The least used plant life forms are grasses and mushrooms (1.6%) (Figure 2).



**Figure 3: Parts used**

Leaves (53.1%) were the most used plant parts followed by roots (14.3%), bark (11.8%). The least used plant parts were sap 1.0% (Figure 3).

Most of the plant species used (66.1%) were harvested from the wild, while (27.4%) were domesticated and (6.5%) were semi-wild (Table 1). Most of the herbal medicines were prepared as decoctions (58.0%) (Table 1). This was done by chopping and boiling dried or fresh plant parts such as the roots and the bark for at least 30 minutes until a viscous mixture was formed. This was followed by crushing and mixing the plant material in water (27.2%) before use. Some plant medicines are steamed and eaten as vegetables, accompaniment to staple food, snacks, porridge and juice.

The most frequently used plant species in disease management were *Vernonia amygdalina* with a frequency of mention of 35, *Chenopodium opulifolium* (16), *Albizia coriaria* (14), *Kedrostis foetidissima* (12), *Lantana camara* (12), *Psidium guajava* (10) and *Carica papaya* (9) (Table 1). *V. amygdalina* and *C. opulifolium* are used to treat more than one disease. The bark of *A. coriaria*, one of the most frequently mentioned plant species is used for treating diarrhea. Twenty one plant species were reported to treat more than one disease, and twenty one different health conditions were reported to be treated by the medicinal plant species (Table 1). Most of the plant species (26.2%) were reported to be used for treating malaria. The other diseases managed were diahorrea (16.5%) yellow fever (10.7%), anemia (9.7%), measles (7.8%), cough (4.9%) and intestinal worms (2.9%).

## Discussion

### Traditional knowledge on plants used in Disease management among Children

The locals use on a wide variety of plant species to treat ailments among children. They also rely on a rich knowledge base of Traditional knowledge on medicinal plants to treat their children. In comparison to the 61 medicinal plant species documented in this study for treatment of children's diseases, mothers in Kenya were reported to use a total of 91 Luo plant remedies to treat either themselves or their family members [10].

Leguminosae and Asteraceae families which were recorded to have the highest number of medicinal plant species in this study have also been reported by other authors [11, 17, 6] to contain numerous medicinal plant species used for treating common diseases. The fungus *Termitomyces microcarpus* has been reported by many researchers as a medicine for various ailments including measles among children coughs, tonsillitis and boils [18, 11, 19]. The most frequently utilized plant parts were the leaves and roots, and they have also been reported by other authors [6, 17 and 20]. For some plants like *Cyphostemma adenocaula* and *Momodica foetida*, the entire plant is utilized. In general, use of reproductive parts such as fruit and seeds is on a small scale.

*V. amygdalina*, *C. opulifolium* and *A. coriaria* are the most commonly used medicinal plants for paediatric health conditions. Other researchers have reported different medicinal uses of these plant species within East Africa and Congo. For example, leaves of *V. amygdalina* have been reported to be used for treating appetite loss in Congo, stomach aches, yellow fever and malaria in East Africa [23] while leaves and roots used for treating blocked fallopian tubes malaria in Sango bay, southern Uganda [17]. Leaves of *C. opulifolium* have been reported to be used to treat measles, fever, amoebiasis and syphilis in Bulamogi, eastern Uganda [6]. The bark of *A. coriaria* is used for treating diarrhea [17; 11], and to enable non-meat eaters to eat meat and to treat lameness [17, 16]. The root has been reported to be used to treat pyomyositis, root and leaves for snake bites and root and bark for amoebiasis [6]. Although bark of *A. coriaria* was mentioned several times by the respondents (frequency of mention 14), as effective in the treatment of diarrhoea, [11] reported it as the least mentioned plant species in their study.

The majority of the medicinal plants used are harvested from the wild, farmland, fallow land and wetlands. A similar observation was reported by other authors [21, 11, 17]. The fact that roots are among the most utilized plant parts poses a threat towards sustainable utilisation and conservation of the plant species. TMP's and women have established herbal gardens around their homes and shrines. Some have even domesticated plants like *Canarium schweinfurthii*, *Entanda abyssinica*, *Abrus precatorius*, *Erythrina abyssinica*, *Steganotaenia araliacea*, *Obetia radula*, *Albizia coriaria* among others on farm lands and crop fields in order to have them within easy access. This intervention can help in reducing the harvesting pressure on the plant species from the wild. The loss and destruction of natural plant habitats was evidenced by the fact that the researchers were not able to collect 4 of the mentioned plant species for identification.

The fact that the majority of medicinal plants were reported to treat malaria this is in agreement with the fact that malaria has been reported as leading cause of child mortality in Uganda [2]. Digestive system disorders (stomach ache, diarrhea, worms, constipation and vomiting) are also common in other areas of Uganda as reported by other authors This is in agreement with the findings in Namungalwe Sub County [3, 17, 6, 16 21; 11]. Diarrhoea was reported to be the most frequently occurring ailment among children of 0-14 years in Namungalwe Sub County [3]. This was followed by malaria and cough among others [3]. However, Children in the same sub county also suffer from HIV/AIDS, sexually transmitted diseases, tuberculosis and anemia among others [3]. The prevalence of malaria, malnutrition and diarrhoea is more prevalent among the poor than the rich households [4].

This study reveals that the main custodians of this knowledge are mostly mothers and traditional healers. This finding is in agreement of other authors [10, 11, and 15]. Women who constituted 54% of the respondents were the most knowledgeable about plants used in disease management among children. This is in agreement with other authors [16, 10, 8]. It has been reported that 80% of the mothers

use traditional medicine to provide health care for themselves and their children [8]. Traditional knowledge among the households is easily passed on orally to the young girls who are often care takers in these homes. This finding was in agreement with that of [15]. The girls are sent to go and pick these plants and also prepare the herbal medicine for the sick children. A similar pattern among the Luo community in Kenya has been documented [10].

**Conclusion:** There is diversity of traditional knowledge on medicinal plants used in the management of ailments among children in Namungalwe Sub County. Mothers and other care takers in homes are the main custodians of this knowledge.

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Table 1: Plants used in disease management among children

| Family name    | Scientific name, Local Name (Lusoga)<br>Voucher Number                                       | G F | CS  | Diseases treated                         | F  | PU        | Mode of Preparation and administration                                                           |
|----------------|----------------------------------------------------------------------------------------------|-----|-----|------------------------------------------|----|-----------|--------------------------------------------------------------------------------------------------|
| Acanthaceae    | <i>Asystasia schimperi</i> T.Anderson, Enante<br>(NPK45)                                     | H   | W   | Anemia                                   | 1  | L         | Boiled in water for not less than 30 minutes                                                     |
|                | <i>Dicliptera laxata</i> DC.B.Clarke Fuula<br>(NPK023)                                       | H   | W   | Anemia                                   | 6  | L         | Boiled in water for not less than 30 minutes<br>or Vegetable prepared as accompaniment of staple |
| Amaryllidaceae | <i>Allium cepa</i> L. obutungulu (NC)                                                        | H   | C   | Malaria                                  | 4  | L         | Crushed in water                                                                                 |
|                |                                                                                              |     |     | Fainting                                 | 1  | L         | Pounded and smeared                                                                              |
|                |                                                                                              |     |     | Vomiting                                 | 2  | L         | Crushed in water                                                                                 |
|                |                                                                                              |     |     | Convulsions                              | 3  | L         | Pounded and smeared on face                                                                      |
| Amaranthaceae  | <i>Amaranthus dubius</i> Mart. ex Thell. Doodo<br>(NPK031)                                   | H   | C   | Anemia                                   | 1  | St &<br>L | Steamed or Vegetable prepared as<br>accompaniment of staple                                      |
|                |                                                                                              |     |     | Diarrhoea                                | 8  | L         | Boiled in water for not less than 30 minutes                                                     |
|                | <i>Chenopodium opulifolium</i> Schrad. ex<br>W.D.J.Koch & Ziz Namuvu (Omwetango)<br>(NPK001) | H   | W   | Measles                                  | 16 | L         | Boiled in water for not less than 30 minutes                                                     |
|                |                                                                                              |     |     | Malaria                                  | 2  | L         | Crushed in water                                                                                 |
| Anacardiaceae  | <i>Mangifera indica</i> L. Omuyembe (NPK071)                                                 | T   | C/W | Sore throat                              | 1  | L         | Crushed in water                                                                                 |
|                |                                                                                              |     |     | Oral wounds,<br>Tonsillitis and<br>Fever | 11 | L         | Crushed in water                                                                                 |
|                |                                                                                              |     |     | Diarrhoea                                | 1  | L         | Boiled in water for not less than 30 minutes                                                     |
| Apocynaceae    | <i>Carissa edulis</i> (Forssk.) Vahl Empwapulo<br>(NPK067)                                   | S   | W   | Malaria                                  | 1  | Rt        | Boiled in water for not less than 30 minutes                                                     |
| Basellaceae    | <i>Phyllanthus ovalifolius</i> Forssk. Lubobebobe<br>(NPK089)                                | S   | W   | Malaria                                  | 1  | L         | Boiled in water for not less than 30 minutes                                                     |
|                | <i>Basella alba</i> L. Ndelema (NPK088)                                                      | H   | W   | Measles                                  | 1  | L         | Boiled in water for not less than 30 minutes                                                     |
| Bignoniaceae   | <i>Spathodea nilotica</i> Seem. Omunalisa<br>(NPK092)                                        | T   | W   | Yellow fever                             | 1  | B         | Boiled in water for not less than 30 minutes                                                     |
| Burscraceae    | <i>Canarium schweinfurthii</i> (DC.) Merr.<br>Mbafu (NPK07)                                  | T   | W   | Yellow fever                             | 1  | B         | Boiled in water for not less than 30 minutes                                                     |
|                |                                                                                              |     |     | Malaria                                  | 2  | B         | Boiled in water for not less than 30 minutes                                                     |
| Cannabaceae    | <i>Cannabis sativa</i> L. Endaye (NC)                                                        | H   | C   | Measles                                  | 4  | L         | Cooked with silver fish                                                                          |

|               |                                                            |   |     |                                      |    |                                                   |                                                                          |
|---------------|------------------------------------------------------------|---|-----|--------------------------------------|----|---------------------------------------------------|--------------------------------------------------------------------------|
|               |                                                            |   |     | Malaria                              | 1  | L                                                 | Boiled in water for not less than 30 minutes                             |
| Caricaceae    | <i>Carica papaya</i> L. Eipaapali (NPK055)                 | T | C   | Intestinal worms                     | 9  | B/Se                                              | Boiled in water for not less than 30 minutes                             |
| Crassulaceae  | <i>Kalanchoe densiflora</i> Rolfe Kisanasana (NPK0115)     | H | C   | Diahorrea, immune boosting           | 1  | L                                                 | leaf folded into v-shape and sap taken                                   |
| Compositae    | <i>Acmella caulirhiza</i> Delile Kaselula mata (NPK095)    | H | W   | Worms                                | 2  | L                                                 | Crushed in water and left to stand for 30 minutes                        |
|               |                                                            |   |     | Malaria                              | 1  | L                                                 | Boiled in water for not less than 30 minutes                             |
|               | <i>Guizotia scabra</i> (Vis.) Chiov. Kyotabakaire (NPK019) | H | W   | Malaria                              | 2  | Rt                                                | Boiled in water for not less than 30 minutes                             |
|               | <i>Vernonia amygdalina</i> Delile Lubilizi (NPK109)        | S | C/W | Stomach pain                         | 1  | L                                                 | Crushed in water                                                         |
|               |                                                            |   |     | Malaria                              | 35 | L                                                 | Boiled in water for not less than 30 minutes                             |
|               |                                                            |   |     | Yellow fever                         | 4  | L                                                 | Crushed in water & Boiled in water for not less than 30 minutes          |
|               | <i>Bidens pilosa</i> L. Obukaala (NPK030)                  | H | W   | Malaria                              | 1  | L                                                 | Boiled in water for not less than 30 minutes                             |
|               |                                                            |   |     | Measles                              | 2  | Fr                                                | Boiled in water for not less than 30 minutes , & Crushed in water        |
|               |                                                            |   |     | Wounds in the mouth, Wounds, Tetanus | 2  | Fr                                                | Crushed in water                                                         |
|               |                                                            |   |     | Yellow fever                         | 1  | Fr                                                | Powder in herbal tea                                                     |
| Cucurbitaceae | <i>Momordica foetida</i> Schumach Eibombo (NPK043)         | H | W   | Yellow fever, Cough                  | 3  | Wp                                                | Crushed in water and Boiled in water for not less than 30 minutes        |
|               |                                                            |   |     | Malaria                              | 2  | Wp                                                | Boiled in water for not less than 30 minutes                             |
|               | <i>Cucurbita maxima</i> Lam. Malibwa (NPK105)              | H | C   | Diarrhoea                            | 2  | Wp                                                | Boiled in water for not less than 30 minutes                             |
|               | <i>Kedrostis foetidissima</i> (Jacq.) Cogn. Zizi (NPK065)  | H | W   | Appetite boosting                    | 12 | L                                                 | Vegetable prepared as accompaniment of staple or cooked with silver fish |
|               |                                                            |   |     | Stomach ache                         | 1  | L                                                 | Boiled in water for not less than 30 minutes                             |
|               |                                                            |   |     | Measles                              | 3  | L                                                 | Boiled in water for not less than 30 minutes                             |
| Diarrhoea     |                                                            |   |     | 1                                    | L  | Crushed in water and left to stand for 30 minutes |                                                                          |
| Euphorbiaceae | <i>Ricinus communis</i> L. Omukakala (NPK059)              | S | W   | Anemia                               | 1  | L                                                 | Powder in herbal tea                                                     |

|                                                    |                                                                     |    |        |                       |    |                  |                                                                                        |
|----------------------------------------------------|---------------------------------------------------------------------|----|--------|-----------------------|----|------------------|----------------------------------------------------------------------------------------|
| Lamiaceae                                          | <i>Ocimum lamiifolium</i> Hochst. ex Benth.<br>Kakubansiri (NPK24)  | H  | W      | Malaria               | 1  | L                | Powder in herbal tea                                                                   |
|                                                    |                                                                     |    |        | Measles               | 2  | L                | Crushed in water                                                                       |
|                                                    | <i>Leucas martinicensis</i> (Jacq.) R.Br.<br>Lusunisuni (NPK111)    | T  | W      | Diarrhoea,<br>Malaria | 1  | Rt               | Crushed in water                                                                       |
| Lauraceae                                          | <i>Persea americana</i> Mill. Fakedo (NPK037)                       | T  | C      | Malaria               | 1  | L                | Boiled in water for not less than 30 minutes                                           |
|                                                    |                                                                     |    |        | Anemia                | 6  | L                | Boiled in water for not less than 30 minutes                                           |
|                                                    |                                                                     |    |        | Diahorrea             | 2  | B                | Boiled in water for not less than 30 minutes                                           |
|                                                    |                                                                     |    |        | Vomiting              | 1  | Se               | Dried and Roasted                                                                      |
| Leguminosae                                        | <i>Abrus precatorius</i> L. Kasitisi (NPK046)                       | Cl | W      | Cough                 | 2  | Rt               | Boiled in water for not less than 30 minutes                                           |
|                                                    |                                                                     |    |        | Measles               | 1  | Rt               | Crushed in water and left to stand for 30 minutes                                      |
|                                                    | <i>Acacia sieberiana</i> DC. Omufuwanduzi (NC)                      | S  | W      | Malaria               | 5  | Rt               | Boiled in water for not less than 30 minutes                                           |
|                                                    | <i>Albizia coriaria</i> Oliv. Musita (NPK001)                       | T  | W      | Malaria               | 14 | B                | Boiled in water for not less than 30 minutes                                           |
|                                                    | <i>Albizia glaberrima</i> (Schum. & Thonn.) Benth. Mulongo (NPK060) | T  | W      | Diarrhoea             | 1  | L                | Boiled in water for not less than 30 minutes                                           |
|                                                    | <i>Entanda abyssinica</i> A.Rich. Omusambamadi (NPK053)             | T  | W      | Malaria               | 7  | B                | Boiled in water for not less than 30 minutes or Powder in herbal tea                   |
|                                                    | <i>Erythrina abyssinica</i> DC (NPK061)<br>Omuyirigiti              | T  | W      | Yellow fever          | 1  | B                | Boiled in water for not less than 30 minutes                                           |
|                                                    | <i>Glycine max</i> (L.) Merr. Soya (NC)                             | H  | C      | Anemia                | 1  | Se               | Porridge                                                                               |
|                                                    | <i>Piliostigma thonningii</i> (Schum.) Milne-Redh. Kilama (NPK054)  | T  | W      | Diarrhoea             | 1  | B                | Boiled in water for not less than 30 minutes                                           |
|                                                    | <i>Indigofera circinnella</i> Baker f. Enfuni NC                    | H  | W      | Intestinal worms      | 1  | Rt               | Crushed in water and left to stand for 30 minutes                                      |
|                                                    | <i>Tamarindus indica</i> L. Mukoge (NPK073)                         | T  | W      | Malaria               | 1  | Rt               | Crushed in water and left to stand for 30 minutes                                      |
| <i>Tephrosia vogelii</i> Hook. f. Mukluku (NPK079) | T                                                                   | W  | Wounds | 1                     | L  | Crushed in water |                                                                                        |
| Meliaceae                                          | <i>Azadirachta indica</i> A. Juss. Neem (NPK057)                    | T  | C      | Malaria               | 1  | L                | Boiled in water for not less than 30 minutes                                           |
| Menispermaceae                                     | <i>Cissampelos mucronata</i> A. Rich. Kavamagombe (NPK011)          | S  | W      | Yellow fever          | 2  | Rt/<br>L         | Boiled in water for not less than 30 minutes or Vegetable prepared as accompaniment of |

|                  |                                                                             |    |     |                    |    |        |                                                                                                   |
|------------------|-----------------------------------------------------------------------------|----|-----|--------------------|----|--------|---------------------------------------------------------------------------------------------------|
|                  |                                                                             |    |     |                    |    |        | staple                                                                                            |
| Musaceae         | <i>Musa paradisiaca</i> L. var. <i>sapientum</i> Kidozi (NC)                | H  | C   | Diahorrea          | 1  | Fr     | Boiled in water for not less than 30 minutes                                                      |
|                  | <i>Musa paradisiaca</i> L. var. <i>paradisiaca</i> Itooke (NC)              | H  | C   | Diahorrea          | 1  | Sap    | Licked                                                                                            |
| Myrtaceae        | <i>Psidium guajava</i> L. Mapeera (NPK012)                                  | T  | C/W | Malaria, anemia    | 10 | L      | Boiled in water for not less than 30 minutes                                                      |
|                  |                                                                             |    |     | Fever              | 1  | L      | Boiled in water for not less than 30 minutes                                                      |
|                  |                                                                             |    |     | Diarrhoea          | 2  | B      | Boiled in water for not less than 30 minutes or Crushed in water and left to stand for 30 minutes |
| Passifloraceae   | <i>Passiflora edulis</i> Sims Butunda (NC)                                  | Cl | C   | Diarrhoea          | 1  | L      | Young tender leaves crushed in water                                                              |
| Pedaliaceae      | <i>Sesamum indicum</i> L. Mukose (NPK077)                                   | H  | C   | Anemia             | 1  | Se     | Vegetable prepared as accompaniment of staple                                                     |
| Phyllanthaceae   | <i>Flueggea virosa</i> (Roxb. ex Willd.) Royle Lukandwa (NPK051)            | S  | W   | Yellow fever       | 1  | L      | Boiled in water for not less than 30 minutes                                                      |
| Poaceae          | <i>Eleusine coracana</i> (L.) Gaertn. Bulu (NC)                             | H  | C/W | Anemia             | 1  | Se     | Porridge                                                                                          |
|                  | <i>Cymbopogon nardus</i> (L.) Rendle Ikungu (NPK107)                        | G  | W   | Cough              | 1  | Rt     | Boiled in water for not less than 30 minutes                                                      |
| Polygalaceae     | <i>Securidaca longepedunculata</i> A.St.-Hil. Omukondwa NC                  | T  | W   | Malaria            | 1  | Rt     | Crushed in water and left to stand for 30 minutes                                                 |
| Talinaceae       | <i>Talinum portulacifolium</i> (Forssk.) Asch. ex Schweinf. Empoza (NPK014) | H  | W   | Malaria            | 4  | Rt     | Boiled in water for not less than 30 minutes                                                      |
| Rubiaceae        | <i>Gardenia ternifolia</i> Schumach. & Thonn. Kawuna (NPK113)               | S  | W   | Vomiting           | 1  | St     | Boiled in water for not less than 30 minutes                                                      |
| Rutaceae         | <i>Citrus sinensis</i> (L.) Osbeck Mucungwa (NPK086)                        | T  | C   | Diahorrea          | 2  | B & Fr | Boiled in water for not less than 30 minutes, Juice, Snacked                                      |
|                  | <i>Citrus limon</i> (L.) Osbeck Enimu (NPK047)                              | T  | C   | Cough, Malaria     | 1  | L      | Boiled in water for not less than 30 minutes                                                      |
| Solanaceae       | <i>Lycopersicon esculentum</i> Mill. Naana (NPK026)                         | H  | C   | Anemia             | 1  | Fr     | Vegetable prepared as accompaniment of staple                                                     |
|                  | <i>Physalis peruviana</i> L. Ntuntunu (NPK018)                              | H  | W   | Intestinal worms   | 1  | Fr     | Snacked                                                                                           |
|                  | <i>Solanum incanum</i> L. (NC) Ntulatula                                    | H  | W   | Yellow fever       | 1  | L      | Crushed in water                                                                                  |
| Tricholomataceae | <i>Termitomyces microcarpus</i> Butiko obwisonkere NC                       | Mu | W   | Boosting appetite, | 3  | Wp     | Boiled in water for not less than 30 minutes & Crushed in water                                   |

|                  |                                                                                                            |    |   | Measles       |    |    |                                                                |
|------------------|------------------------------------------------------------------------------------------------------------|----|---|---------------|----|----|----------------------------------------------------------------|
| Apiaceae         | <i>Steganotaenia araliacea</i> Hochst.<br>Kibundubundu (NPK91)                                             | T  | W | Yellow fever  | 1  | Rt | Powder in herbal tea                                           |
| Urticaceae       | <i>Obetia radula</i> (Baker) Baker ex B.D. Jacks.<br>Omwesango (NPK035)                                    | T  | W | Cough         | 8  | L  | Powder licked                                                  |
| Verbenaceae      | <i>Lantana camara</i> L. Kapanga (NPK44)                                                                   | S  | W | Malaria       | 12 | L  | Boiled in water for at least 30 minutes or<br>Crushed in water |
|                  |                                                                                                            |    |   | Vomiting      | 1  | L  | Crushed in water                                               |
|                  | <i>Priva adhaerens</i> (Forssk.) Chiov Nkame<br>(NPK036)                                                   | H  | W | Diahorrea     | 1  | L  | Crushed in water                                               |
| Vitaceae         | <i>Cyphostemma adenocaula</i> (Steud. ex<br>A.Rich.) Desc. ex Wild & R.B.Drumm.<br>Eibombo eitono (NPK093) | Cl | W | Malaria       | 1  | Wp | Crushed in water                                               |
| Xanthorrhoeaceae | <i>Aloe spp</i> Ekikaka (NPK116)                                                                           | H  | C | Yellow fever  | 8  | L  | Boiled in water for not less than 30 minutes                   |
| Zingiberaceae    | <i>Aframomum alboviolaceum</i> Matungulu<br>(Ridl.) K.Schum. NC                                            | H  | W | Body building | 1  | Fr | Snacked                                                        |

**Key: Life form:** H (herb); S (shrub); T (tree); Cl (climber); Mu (mushroom); **Part used:** L (leaves); St (stem); Rt (root); Fr (fruit); Se (seeds); B (bark); Fl (flower); Wp (Whole plant) **Conservation status:** W (wild); C (cu), NC Not collected.