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DNA barcoding augments conventional methods for identification of medicinal plant species traded at Tanzanian markets

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ABSTRACT

Ethnopharmacological relevance: In Africa, traditional medicine is important for local healthcare and plants used for these purposes are commonly traded. Identifying medicinal plants sold on markets is challenging, as leaves, barks and roots are often fragmented or powdered. Vernacular names are often homonymic, and identification of material lacking sufficient morphological characters is time-consuming, season-dependent and might lead to incorrect assessments of commercialised species diversity.

Aim of the study: In this study, we identified cases of vernacular heterogeneity of medicinal plants using a tiered approach of literature research, morphology and DNA barcoding.

Material and methods: A total of 870 single ingredient medicinal plant samples corresponding to 452 local names were purchased from herbal markets in Dar-es-Salaam and Tanga, Tanzania, and identified using conventional methods as well as DNA barcoding using *rbcl*, *matK* and *nrITS*.

Results: Using conventional methods, we could identify 70% of samples to at least family level, while 62% yielded a DNA barcode for at least one of the three markers. Combining conventional methods and DNA barcoding, 76% of the samples could be identified to species level, revealing a diversity of at least 175 species in 65 plant families. Analysis of the market samples revealed 80 cases of multilingualism and over- and under-differentiation. *Azelia quanzensis* Welw., *Zanthoxylum* spp., *Allophylus* spp. and *Albizia anthelmintica* Brongn. were the most evident cases of multilingualism and over-differentiation, as they were traded under 8–12 vernacular names in up to five local languages. The most obvious case of under-differentiation was *mwingajini* (Swahili), which matched to eight scientific species in five different plant families.

Conclusions: Use of a tiered approach increases the identification success of medicinal plants sold in local market and corroborates findings that DNA barcoding can elucidate the identity of material that is unidentifiable based on morphology and literature as well as verify or disqualify these identifications. Results of this study can be used as a basis for quantitative market surveys of fragmented herbal medicine and to investigate conservation issues associated with this trade.

1. Introduction

Traditional medicine markets are known for their importance for the local economy and healthcare provision in developing countries. Additionally, they are a valuable source of information to ethnobotanists, conservationists and healthcare authorities, since they provide an overview of the medicinal floristic diversity of a region, the species in

high demand and reflect local health concerns (Cunningham, 2001). Market studies aim to document the diversity and volume of medicinal plants sold and to map the harvesting localities and trade routes. Market surveys are used to investigate possible conservation issues associated with the commercialisation of herbal products and the informal economy connected to its annual sales values (Cunningham, 2001; van Andel et al., 2015). However, one of the standing challenges

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that remains is the identification of the products in trade. Herbal market stalls display a wide variety of roots, bundles of leaves, barks, wood, fruits and seeds, which are often difficult to identify. Classification of intact herbal products relies heavily on morphological characters. Fruits, seeds and leafy branches can be identified using morphology, and are often made into herbarium vouchers. Living bulbs and rhizomes can be grown into adult plants with leaves and flowers and further identified, but this is a time-consuming and labour-intensive process. Shredded leaves, roots and barks are much more difficult to identify, as they lack morphological characters as they are often dried beyond the point of recognition or are sold as powders. To aid the identification of these products, fertile specimens can be collected in the field together with the vendors, the marketed products can be compared to herbarium vouchers and economic botany collections or can be identified using available literature to match the local name to a scientific equivalent (Williams et al., 2000; van Andel et al., 2012; Quiroz et al., 2014; Towns et al., 2014). Nevertheless, part of the marketed products tends to remain unidentified and the reliability of identifications based on literature alone is questionable, since local names can refer to multiple scientific species or one scientific species could have multiple local names (Van't Klooster et al., 2003; Kokwaro, 2009), concepts which are described as under-differentiation and over-differentiation respectively (Berlin, 1973, 1992; Martin, 2004; Cunningham, 2001). An additional complicating factor in this matter is the use of multiple local languages on these markets, leading to trade names in multiple languages for one scientific species (Otieno et al., 2015). In Tanzania, like many other developing countries, a substantial amount of the population uses traditional medicine (de Boer et al., 2005; Hedberg et al., 1983a, 1983b; 1982; McMillen, 2012; Posthouwer et al., 2018). Surveys of Tanzanian herbal markets have predominantly used morphological methods and literature to identify the traded species (McMillen, 2008; Nahashon, 2013; Abihudi, 2014). However, since the majority of the medicinal plants on these markets are sold as powders, roots and barks, only part of the products could be identified using morphology (Posthouwer et al., 2018). Identifying traded plants based on their vernacular name is challenging, as not all Tanzanian plant names are linked to scientific species and previous studies have produced long lists of local names for which no identification hypothesis exists (Nahashon, 2013; Abihudi, 2014; Otieno et al., 2015). Tanzania is ethnically diverse and this is reflected in the diversity of trade names in various local languages for the same product (McMillen, 2008; Otieno et al., 2015). Several cases of over- and under-differentiation are known: the common name *olkiloriti* (Maasai) is for example used for several *Vachellia* (syn. *Acacia*) species, *mtopetope* (Swahili) for different *Annona* species, and *mjafari* (Arabic/Swahili) for *Ehretia abyssinica* and several *Zanthoxylum* species (Kokwaro, 2009; Nahashon, 2013; Abihudi, 2014; Otieno et al., 2015). It is unclear if all species referred to by these local names are sold, or if only a few of these are commercialised.

Knowing exactly which species are sold on the market validates quantitative market data, which can in turn be used to determine possible sustainability issues of wild-harvested plants. To achieve this goal, DNA barcoding can serve as an alternative identification method (Veldman et al., 2014). DNA barcoding is a method that makes use of short standardized regions of DNA to distinguish between species (Hebert et al., 2003) and is increasingly used for the identification and authentication of medicinal plants and herbal products (e.g. Li et al., 2011; Kool et al., 2012; Newmaster et al., 2013; Raclariu et al., 2017a). In this study, DNA barcoding was used in addition to identifications based on morphology and literature to propose an identification hypothesis for the local names that had not been linked to scientific names. To investigate the medicinal species in trade at Tanzanian markets we posed the following questions: i) Which traded species are subject of multilingualism and over- and under-differentiation? ii) Can DNA barcoding be used to provide identification hypotheses for hitherto unidentified local names? iii) How do DNA barcoding results

compare to identifications based on literature and morphology?

2. Material and methods

For this research recommended guidelines on the collection of ethnobotanical and ethnopharmacological data and material have been consulted (Martin, 2004; Weckerle et al., 2018).

2.1. Sample collection and processing

Based on the available literature on Tanzanian medicinal plant markets (McMillen, 2008; Nahashon, 2013; Abihudi, 2014; Otieno et al., 2015), we made an overview of known cases of multilingualism and over- and under-differentiation of medicinal plants. For local names potentially referring to multiple scientific species, we bought several samples from different vendors at different markets for comparative analysis. The same was done for popular medicinal plant products with product names suspected of referring to multiple species. Vouchers were deposited at the Natural History Museum, University of Oslo, Norway and at the Herbarium of the Institute of Traditional Medicine in Dar-es-Salaam, Tanzania. Data collection took place at different periods of the year between 2013 to 2016. In total 870 single ingredient samples were included in the study, of which 74 were discussed previously by Posthouwer et al. (2018) in a quantitative survey of non-woody plants sold at the Kariakoo market in Dar-es-Salaam.

2.2. Ethics

The research was conducted in line with the International Society of Ethnobiology Code of Ethics (ISE, 2006). The project was part of a collaboration with the Institute for Traditional Medicine, Muhimbili University of Health and Allied Sciences (MUHAS) in Dar-es-Salaam, Tanzania. Research permits were obtained from the Tanzanian Commission for Science and Technology (COSTECH). Participants in our study were informed of the purpose of our research and gave their written prior-informed-consent (PIC). Export permits were arranged through the Phytosanitary Section of the Tanzanian Ministry of Agriculture and duplicates were stored at the ITM herbarium in accordance with the TASENE project Material Transfer Agreement.

2.3. DNA extraction, PCR and sequencing

In this study the core plant DNA barcodes *matK* and *rbcL* (CBOL Plant Working Group, 2009) were used, as well as the nuclear marker nrITS that has been suggested as a supplementary DNA barcoding marker (Chen et al., 2010; Hollingsworth, 2011; Li et al., 2011). DNA was extracted from ± 0.02 g plant material using a CTAB-based method (Carlson et al., 1991). Non-powdered products were pulverized using a mortar and pestle or in 2 ml tubes filled to a quarter with zirconia beads using a Mini-Beadbeater (BioSpec Products, Bartlesville, USA). DNA extracts were purified to remove potential PCR inhibitors, which are common in medicinal plant extracts, using a GE Illustra GFX PCR DNA and Gel Band purification kit in accordance with the manufacturer's protocol (GE Healthcare, Little Chalfont, United Kingdom) and purified total DNA was dissolved in 70–100 μ l 10 mM Tris-HCl solution for downstream applications and long-term storage. PCR amplification was performed for the core barcoding markers *matK* and *rbcL* using the primers and protocols described in Ford et al. (2009) and Dunning and Savolainen (2010) for *matK* and in Levin et al. (2003) and Kress and Erickson, 2007 for *rbcL*. Amplification of nrITS was performed following Sun et al. (1994). PCR amplification was performed in a total reaction volume of 25 μ l containing 15.25 μ l ddH₂O, 2.5 μ l forward and reverse primer (5 pmol), 2.5 μ l DreamTaq reaction buffer (Thermo Scientific, Waltham, USA), 0.5 μ l dNTP (25 mM), 0.16 μ l 2% acetylated Bovine Serum Albumin (Promega), 0.125 μ l DreamTaq polymerase (Thermo Scientific). 10 μ l PCR product was cleaned by adding 3 μ l 8x

diluted ExoSAP-IT (Thermo Scientific) and running it on a Veriti Dx Thermal Cycle (Applied Biosystems, Foster City, USA) at 37 °C for 15–30 min and 80 °C for 15 min. Sanger sequencing was performed by MacroGen Europe (Amsterdam, The Netherlands) on an ABI3730XL sequencer (Applied Biosystems), using EZ-SEQ and following the manufacturer's protocol for sample preparation. The obtained sequence trace files were assembled using Geneious v.10.1.3 (Kearse et al., 2012).

2.4. Reference database assembly and BLAST analysis

To allow accurate species level identifications, it is essential to have an extensive and reliable reference sequence database to match the unidentified query sequences. In this study we follow previously described approaches from Kool et al. (2012), de Boer et al. (2014), Ghorbani et al., 2017 and created a reference database based on putative correspondences between vernacular and scientific names. The database is subsequently augmented with possible substitutes within the genus (i.e. similar species that could be harvested instead of the putative target species). In addition, broad BLAST searches in GenBank allow for identification of species for which the scientific name hypothesis based on the vernacular name was incorrect. Putative species were identified using available literature on commercialised Tanzanian medicinal plants (McMillen, 2008; Nahashon, 2013; Abihudi, 2014). This list was used for an initial mining of sequences for these species from NCBI GenBank. In case of one vernacular name referring to multiple scientific names, we made a list of all species within that genus occurring in Tanzania and checked whether the species within this genus had representatives in online repositories. In case of lacking reference sequences, we consulted the herbaria of Missouri Botanical Gardens (MO) and the Museum of Evolution herbarium in Uppsala (UPS) for reference vouchers with reliable identifications, from which we generated sequences for a local reference database. The sequences obtained from market samples were initially identified using BLAST (Altschul et al., 1990) as integrated in Geneious v.10.1.3 and using NCBI Genbank as reference database (Benson et al., 2012). The top five hits for each query sequence were downloaded, exported and integrated with the reference sequences from herbarium vouchers into a local database, which was subsequently used to match query sequences using blastn on a local computer. In order to avoid erroneous species-level identifications, due to species over- or underestimations using a subjective universal cut-off value, a custom cut-off value per genus was calculated. To determine the suitable cut-off value for species-level identification, an alignment of the available reference sequences was made for each encountered genus and each barcoding maker and the intra- and interspecific variations were analysed using SpeciesIdentifier (Meier et al., 2006). In most cases the cut-off value suggested by SpeciesIdentifier was adopted, except when this value was < 1%, then a general cut-off value of 1% was used combined with critical evaluation based on the completeness of the reference database, sequence vs. query length and mismatches. The determined cut-off value in combination with the percent identity match was used to evaluate the BLAST identifications for their reliability. If the percent identity match exceeded the determined threshold, a species level identification was recorded. For lower values or in case of multiple top hits with the same score, a genus- or family-level identification was made. Identifications for the separate barcoding markers were combined in a consensus barcoding ID. Samples with incongruent identifications were recorded as unidentified, except when two out of three were in congruence then the identification was recorded.

2.5. Species identification

To come to a species hypothesis, results from the different identification methods were compared and interpreted and nomenclature was checked using the PlantList (www.theplantlist.org). In case no conflict between literature, morphology and DNA barcoding was detected, the

most detailed identification was adopted (e.g., if morphology would indicate *Drimia* sp. and DNA barcoding *Drimia altissima*, the latter would be used as our species hypothesis). In case only one identification method gave an identification, that identification would be adopted and if possible expanded by *a posteriori* information (Ghorbani et al., 2017) to allow for a more narrowed-down species hypothesis. In case of incongruence between the different methods, morphology and DNA barcoding would in general be considered more trustworthy than literature, especially if multiple samples for the same product would show similar identifications. However, if there was an incongruence between literature or morphology and DNA barcoding and the DNA barcoding result was only supported by one marker, literature and morphology would be considered more trustworthy, due to the possibility of contamination. For DNA barcoding identifications, the completeness of the reference database was also taken into consideration when making the final species hypothesis, for example if DNA barcoding would indicate *Zanthoxylum holtzianum*, whereas literature mentioned *Z. usambarense* and *Z. chalybeum* as identifications, and morphology would indicate cf. *Z. usambarense*, then considering that *Z. usambarense* and *Z. chalybeum* were not present in the DNA barcoding reference database, morphology and literature were considered more reliable. In case no reliable species hypothesis could be made due to extensive incongruence between the three methods, the term 'undecided' was used. If none of the identification methods would result in an identification the sample was considered 'indet.', i.e. unidentified.

3. Results

3.1. Literature and genetic reference material review

The literature review of plants traded in Tanzania yielded several cases of over- and under-differentiation, which are summarised in Table 1. Based on vernacular and scientific names recorded in literature, one would estimate to encounter around 218 different species from 90 genera belonging to 70 plant families available on the market.

Moreover, 199 vernacular names of medicinal products could not be matched to scientific species, which suggests an even larger diversity of species in trade. Out of the 218 taxa for which scientific names were recorded, 80 had sequences for all three barcoding markers in NCBI GenBank, 94 species for 1-2 markers, and 44 species had no sequences available. In the latter category, all taxa did have at least some sequences of other species within the same genus available in NCBI GenBank.

3.2. Sample collection and processing

In total 870 medicinal plant samples were collected at the Dar-es-Salaam and Tanga markets, corresponding to 452 local names, out of which 212 were unidentifiable based on literature and morphology and 240 could be assigned to at least family level, although in some cases ambiguously and/or based on literature alone. The DNA extraction success rate was generally very high, ranging from 86% for the medicinal plants samples to 95% for the reference collections from the MO and UPS herbaria. The PCR success rate was considerably lower. The nrITS region was successfully amplified for 408 medicinal plant samples (54%), *rbcL* for 564 samples (64%) and *matK* for 350 samples (47%), which resulted in the successful assembly of 220 nrITS sequences, 439 *rbcL* sequences and 279 *matK* sequences. For 80 samples all three barcodes could be obtained, for 172 samples two, and for 283 samples one barcode region could be obtained. A sequence for at least one of the barcoding markers was obtained for 535 market samples (61%). The new MO and UPS reference collections yielded 50 nrITS, 83 *rbcL* and 53 *matK* sequences, resulting in at least one sequenced barcode region for 107 of the 185 new reference collections (58%) (For NCBI GenBank accession numbers see Supplementary Table S1).

Table 1
Expected multilingualism, over- and underdifferentiation based on literature.

Multilingualism and over-differentiation	
Scientific name	Vernacular names ^a
<i>Afzelia quanzensis</i> Welw.	Mkongo, olkwai, olong'oswa, osaragi
<i>Albizia anthelmintica</i> Brongn.	Mfueleta (Sw), olmokotani (Ms)
<i>Annona cherimola</i> Mill.	Mtopetope, mtonkwe, mcheka
<i>Annona senegalensis</i> Pers.	Mtopetope, mtonkwe, mcheka
<i>Annona squamosa</i> L.	Mtopetope, mtonkwe, mcheka
<i>Bauhinia thonningii</i> Schum.	Msabuni, msegese
<i>Cassia abbreviata</i> Oliv.	Mkundekunde, mzoka, mlundalunda
<i>Cleome gynandra</i> L.	Mustard, mgagani
<i>Cleome viscosa</i> L.	Mustard, mgagani
<i>Combretum zeyheri</i> Sond.	Mlama, msana
<i>Deinbollia borbonica</i> Scheff.	Mmoyomoyo, mbwakabwaka
<i>Delonix elata</i> (L.) Gamble	Msemelele, msele
<i>Erythrina abyssinica</i> DC.	Mjafari, mwale
<i>Ficus natalensis</i> Hochst.	Mlandege, mvumo, mlandege
<i>Ficus sur</i> Forssk.	Mkuyu, mvumo
<i>Ficus sycamorua</i> L.	Mkuyu, mvumo, mbuyu
<i>Harrisonia abyssinica</i> Oliv.	Kucha la samba, mkunju, engiloilo (Ms)
<i>Hibiscus sabdariffa</i> L.	Msamaki, ufuta
<i>Kigelia africana</i> (Lam.) Benth.	Mwegea, mtandi
<i>Maerua angolensis</i> DC.	Mchekea, mguruka
<i>Ocotea usambarensis</i> Engl-	Mkulo, mtambaa
<i>Ozoroa insignis</i> Delile.	Mwembe dodo (kuu), mwembepori
<i>Phyllanthus reticulatus</i> Poir.	Mzizima, munyamtitu, mbimbiliji, mchichimya
<i>Prunus africana</i> (Hook.f.) Kalkman	Olkujuk, mkazara
<i>Salvadora persica</i> L.	Mustard, mswaki, oremit
<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Mng'ong'o, mtula, olmang'oi
<i>Senna alata</i> (L.) Roxb.	Mkundekunde, mkundenyika
<i>Spirostachys africana</i> Sond.	Msaraka, mkulo, mharaka
<i>Vachellia kirkii</i> (Oliv.) Kyal. & Boatwr.	Olkiloriti (Ms), mgunga
<i>Vachellia nilotica</i> (L.) P.J.H. Hurter & Mabb.	Olkiloriti (Ms), mgunga
<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	Orgwai (Ms), orgilai (Ms)
<i>Vepris simplicifolia</i> (Engl.) Mziray	Orgwai (Ms), orgilai (Ms)
<i>Warburgia ugandensis</i> Sprague	Msaka uchawi, olsokono
<i>Zanthoxylum chalybeum</i> Engl.	Mjafari, mlungulungu, mwale, oloisuki
<i>Zanthoxylum usambarensis</i> (Engl.) Kokwaro	Mjafari, muguchwa
Under-differentiation	
Vernacular name	Scientific names
Mbula	<i>Parinari curatellifolia</i> Planch. ex Benth., <i>P. excelsa</i> Sabine
Mbuyu	<i>Adansonia digitata</i> L., <i>Lagenaria siceraria</i> (Molina) Standl.
Mjafari	<i>Erythrina abyssinica</i> DC., <i>Zanthoxylum chalybeum</i> Engl., <i>Z. usambarensis</i> (Engl.) Kokwaro
Mkaritusi	<i>Eucalyptus camaldulensis</i> Dehnh., <i>E. cloeziana</i> F.Muell., <i>E. drepanophylla</i> F.Muell. ex Benth., <i>E. globulus</i> Labill., <i>E. grandis</i> W.Hill, <i>E. paniculata</i> Sm., <i>E. pellita</i> F.Muell., <i>E. robusta</i> Sm., <i>E. saligna</i> Sm., <i>E. sideroxyton</i> A.Cunn ex Woolls., <i>E. tereticornis</i> Sm.
Mkilika	<i>Dombeya acutangula</i> Cav., <i>D. rotundifolia</i> (Hochst.) Planch., <i>D. shupangae</i> K.Schum., <i>D. taylorii</i> Baker f., <i>D. torrida</i> (J.F.Gmel.) Bamps, <i>Ehretia amoena</i> Klotzsch, <i>E. obtusifolia</i> Hochst. ex A.DC.
Mcheka	<i>Annona cherimola</i> Mill., <i>A. senegalensis</i> Pers., <i>A. squamosa</i> L.
Mkole	<i>Grewia arborea</i> (Forssk.) Lam., <i>Grewia damine</i> Gaertn. (syn. <i>G. bicolor</i>), <i>G. goetzeana</i> K.Schum., <i>G. mollis</i> Juss.
Msofu	<i>Indigofera lupatana</i> Baker f., <i>Uvaria catocarpa</i> Diels., <i>U. kirkii</i> Oliv. ex Hook. f., <i>U. leptocladon</i> Oliv. (unresolv.), <i>Uvariendron kirkii</i> Verdc.
Mtonkwe	<i>Annona cherimola</i> Mill., <i>A. senegalensis</i> Pers., <i>A. squamosa</i> L.
Mtopetope	<i>Annona cherimola</i> Mill., <i>A. senegalensis</i> Pers., <i>A. squamosa</i> L.
Mvumbasi	<i>Ocimum basilicum</i> L., <i>O. grantissimum</i> L.
Mvumo	<i>Ficus ingens</i> (Miq.) Miq., <i>F. natalensis</i> Hochst., <i>F. sur</i> Forssk., <i>F. sycamorua</i> L.
Olkiloriti	<i>Vachellia kirkii</i> (Oliv.) Kyal. & Boatwr., <i>V. nilotica</i> (L.) P.J.H. Hurter & Mabb., <i>V. robusta</i> (Burch.) Kyal. & Boatwr., <i>V. stuhlmannii</i> (Taub.) Kyal. & Boatwr.
Orgwai	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter, <i>Vepris simplicifolia</i> (Engl.) Mziray
Orgilai	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter, <i>Vepris simplicifolia</i> (Engl.) Mziray

^a Respective local languages (if mentioned in literature) were abbreviated: Maasai (Ms), Swahili (Sw).

3.3. Species identification

Suitable cut-off values for species level identifications were determined through analysis of the intra- and interspecific variations within the predominant genera (Supplementary Table S2). The availability of sequences per genus and species varied greatly between the different genera, and for some genera and markers no or very few sequences were available, whereas other genera could have as many as 131 species and 169 sequences for one marker. On average 13 species (median 8.0) and 26 sequences (median 13.5) were available per

species per marker, although generally less reference sequences were available for nrITS. The suggested cut-off value for *matK* and *rbcL* as calculated by SpeciesIdentifier was often between 0-1%, whereas the cut-off value suggested for nrITS was on average 3.3%. Identifications based on cut-off values under 1% were critically evaluated from case to case in order to determine if the sequence dissimilarity was likely to be caused by actual variation or by contamination, sequencing errors or multiple copy issues. If no sequences were available for the calculation an average cut-off value was applied of 1% for *matK* and *rbcL* and 3% for nrITS. In some cases, chosen cut-off values appeared to be

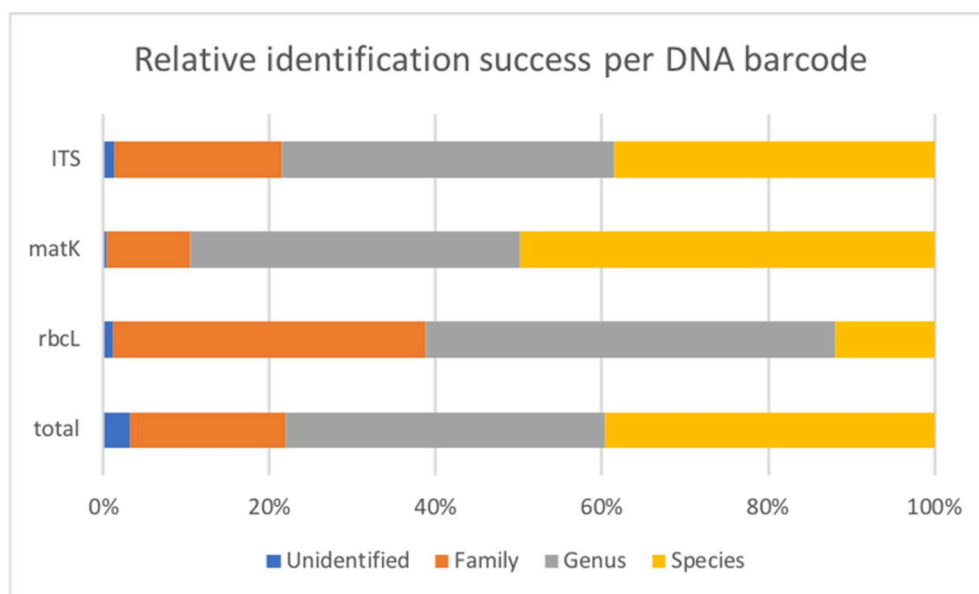


Fig. 1. Relative identification success per barcode. Blue represents the percentage of sequences that could not be identified using BLAST; red represents the sequences that could be identified to family-level; grey the percentage of sequences that could be identified to genus-level and yellow the percentage of sequenced that could be identified to species-level. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

unsuitable as multiple top hits would fall within the determined threshold. In these cases, either a family- or genus-level identification was made, or a species-level identification after close evaluation of all BLASTn output values. An overview of the consensus identifications, conflicts and identification methods used is given in [Appendix 1](#). A more detailed overview of all identifications and references used is given in [Supplementary Table S3](#), where identifications are presented per sample based on morphology and literature, per barcoding marker and barcoding consensus. Supplementary Tables S4–S6 include the top five blastn results per sample and marker (S4 nrITS, S5 *matK* and S6 *rbcL* respectively), including the query sequence ID, subject sequence ID, percentage identical matches, alignment length, the number of mismatches, number of gap openings, start and end of the alignment in query, the start and end of the alignment in subject, the expect value and the bit score. The identification performance of the barcoding markers is presented in [Fig. 1](#). In total 509 identifications could be made, 208 at species level, 202 at genus and 99 at family level; 26 samples could not be identified with the applied barcodes or showed ambiguities between the identifications from different markers. In total, 175 different plant species from 124 genera belonging to 65 plant families were identified. Out of the 262 samples that were unidentifiable based on morphology and literature, 36 could be identified up to family level, 64 up to genus and 51 up to species level. Using conventional methods, 608 samples could be identified at least to family level, which resulted in 373 samples with an identification from multiple sources. When comparing these results, it became clear that these identifications were congruent with each other in 41% of cases. For 171 samples there was an identification incongruence on family level, for 28 samples on genus level and for 13 samples on species level. An ultimate species hypothesis could be made for 662 samples; 121 samples remain unidentified and for 87 samples the identification remains undecided due to incongruence.

3.4. Multilingualism and over- and under-differentiation

In the market samples investigated, 32 cases of multilingualism and over-differentiation and 48 cases of under-differentiation were detected ([Table 2](#)). The most evident cases of multilingualism and over-differentiation were *Azvelia quanzensis* Welw., which was traded under twelve local names in at least five local languages and *Zanthoxylum* spp., for which eleven local names in at least three local languages were recorded. Comparison of cases of vernacular heterogeneity recorded in

literature and those detected on the market, show that several species overlap, but not necessarily with expected local names. In case of *A. quanzensis* it was expected to find this plant traded under the following names: *mkongo*, (Swahili) *olkwai*, *olng'oswa* or *osaragi* (all Maasai). However, *Azvelia quanzensis* identified in our analysis was traded as *endulele* (Maasai), *itetemia* (Nyamwezi/Swahili), *olengala* (Shambaa) or the Swahili names *mfalaka*, *mfuleta*, *mgosiagona*, *mguruka*, *mpapatiko*, *gwangwandu*, *msigi*, *msusula* and *muharaka*. The most obvious case of under-differentiation was *mwingajini* (Swahili) from which a variety of unrelated species were identified, including an Anacardiaceae species, species in the genera *Strychnos* (Loganiaceae), *Vepris*, *Zanthoxylum* sp. and *Zanthoxylum holtzianum* (Engl.) P.G.Waterman (Rutaceae), *Volkameria* (Lamiaceae), and *Brackenridgea zanguebarica* Oliv. (Ochnaceae). In other cases of under-differentiation, the number of scientific species corresponding to one vernacular name varied between two and four.

4. Discussion

4.1. Vernacular heterogeneity

In total, we identified 80 cases of multilingualism and over- and under-differentiation on the markets studied. This was more than the 51 cases expected based on literature ([McMillen, 2008](#); [Nahashon, 2013](#); [Abihudi, 2014](#); [Otieno et al., 2015](#)). The true number of cases of multilingualism is likely higher, as cases of over-differentiation might in some cases be hidden multilingualism. Even if the vendors indicated that a certain vernacular name was in Swahili, it could actually be a local name from another language that had become accepted as a trade name through vernacular dominance and was therefore considered Swahili ([Otieno et al., 2015](#)). *Mjafari*, for example, is originally an Arabic name for *Zanthoxylum* sp., but most vendors consider the name to be Swahili, while the actual Swahili name is *mlungulungu* ([Otieno et al., 2015](#)). Several useful plants in Surinam also show an extensive level of multilingualism and over-differentiation, similar to the situation in Tanzania, because the *lingua franca* (Sranantongo) contains plant names that have an origin in a multitude of African, European and Amerindian languages ([Van't Klooster et al., 2003](#); [Van Andel et al., 2014](#)). The diversity of names could also be explained by their different meanings: some vernacular names refer to the plant, whereas other names refer to the condition the plants cure. Plants sold under the name *mwingajini* (Swahili) are used to chase away evil spirits, but collectors indicated that there are several types of *mwingajini*, which look very

Table 2
Multilingualism, over- and under-differentiation encountered at local markets based on literature, morphology and DNA barcoding.

Multilingualism and over-differentiation	
Scientific name	Vernacular names ^a
<i>Acalypha</i> sp.	Lunduta (unknown), makusanya (Sw), mbambakofi (Sa), mfunguo (Sw), mvulwe (Sw)
<i>Azelia quanzensis</i> Welw.	Endulele (Ms), gwangwandu (Kw), itetemia (Ny/Sw), mfalaka (Sw), mfuleta (Sw), mgosiagona (Sw), mguruka (Sw), mpapatiko (Sw), msigi (Sw), msusula (Sw), muharaka (Sw), olengala (Sa)
<i>Albizia anthelmintica</i> Brongn.	Kisakuakuku (unknown), mfuleta (Sw), mbwakabkwaka (Sw), mdaula (Sw), mkunga nilwa (Kw), mkwayu (unknown), mtopotope (Sw), olmukutan (Ms)
<i>Allophylus</i> sp.	Mkoma vikali (Sw), mkonde (Sw), mkunazi (Sw), mmelemele (Sw), mnamata (Sw), msaka (Sw), mswagambuzi (Sw), mumoze (Sw), muosha nyota (Sw)
<i>Annona</i> sp.	Mbokwe (Sa/Sw), mdaa (Sw), mnanaa (unknown), mtopotope (Sw), mzima (Sw)
<i>Boscia salicifolia</i> Oliv.	Kamnyangala (Zu), mguruka (Kw), mkunga nilwa (unknown), olomi (Ms)
<i>Brackenridgea zanguebarica</i> Oliv.	Mkatakwa (Sa), mkumbi (Kw/Sw), mkweda (Sw), mwinga jini (Sw)
<i>Cassia abbreviata</i> Oliv.	Melemele (Sw), mkundekunde (Sw), mti mkuu (Sw), singwai (Ms)
<i>Cassia</i> sp.	Funga ng'ombe (Sw), mfuleta (Sw), mgola (Sw), mkundekunde (Sw), mseshe (Sw), mzungazi (Sw), singwai (Sw).
<i>Combretum</i> sp.	Hozandoghwa (Sa), mjata (Sw), mmama (Sw), mliliwa (Sw)
<i>Crossopteryx febrifuga</i> (Afzel. ex G.Don) Benth.	Msaada (Sw), msasambeghe (Sa), nepirankashi (Ms), onjani longera (Ms)
<i>Croton</i> sp.	Habat muruksi (Ar), mkambati/mkombati (Sw), mlawa (Sw)
Scientific name	Vernacular names ^a
<i>Ehretia</i> sp.	Kalilalila (Sw), mbwemwendeko (Sw), mjavikali (Sw), mkilika (Sw), msememele (Sw), muosha fedha (Sw), mvunja hukumu (Sw), mwende (Sw), mzima (Sw)
<i>Grewia</i> sp.	Mkole (Sw), mkolekole (Sw), msufi (Sw), mkwamba (Sw), mwamba (Sw)
<i>Holarrhena pubescens</i> Wall. ex G.Don	Mmelemele (Sw), kusibali (Sw), kuzubara (Ar)
<i>Lanea</i> sp.	Mumbu (Sa), mtundwi (Sa/Sw)
<i>Ocimum basilicum</i> L.	Kivumbasi (Sw), kivumbasi kikubwa (Sw), hahi (Sw), lufyambo (Sw)
<i>Ocimum gratissimum</i> L.	Mrehani (Sw), muhagata (Sw)
<i>Pterocarpus</i> sp.	Mguruka (Sw), mjata (Sw), mvule (unknown), presha kushuka (Sw)
<i>Salvadora persica</i> L.	Mbasu (unknown), mkunju (Sw), mpachu (unknown), msiga nyika (Sw), mswaki (Sw), mvumbulo (Sw)
<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Fungafunga (unknown), mhombe/muhombe (Sw), mmumbu (Sw) mng'ongo (Sw), mzambaran (Sw)
<i>Senna</i> sp.	Mkundekunde (Sw), msangasi (Sw), mtogo (Sw), mwinu (Sw)
<i>Strychnos</i> sp.	Mtonga (Sw), mwinga jini (Sw), olangoliroi (Ms), olapulases (Ms), oripilikwa (Ms)
<i>Suregada</i> sp.	Jeta (Kw), lusekela (Sw), madimula (Sw), mdimpori (Sw), Mdimu (Sw), mgombagomba (Sw)
<i>Thespesia danis</i> Oliv.	Engilelo (Ms), mmoyomoyo (Sw)
<i>Uvaria</i> sp.	Mgwenne (Sa), mnenge (Sa), msharifu (Ar), msofu (Sw), muhongilo (Sw), mvuto (Sw)
<i>Uvaria lucida</i> Bojer ex Benth.	Mangube (Sw), mdimu (Sw)
<i>Uvaria tanzaniae</i> Verdc.	Mkwalkwalu (Sw), mkongo (Sw), msofu (Sw)
<i>Warburgia</i> sp.	Mpaja (Kw/Sw), Msaka uchawi (Sa/Sw), Pilipili mwiwu (Sw)
<i>Ximenia caffra</i> Sond.	Engomai (Ms), mgombagomba (Sw), mhagata (Sw), mkungu kula (Sw), mlimbolimbo (Sw), mpingi (Sw), msangala (Sw)
<i>Zanthoxylum</i> sp.	Loisuki/oloisuki (Ms), luhaho (Ms), mdaula (Sw), mguruka (Sw), mjafari (Ar/Sw), mlungulungu (Sw), mvule (Sw), mwifu (Sw), mwinga jini (Sw), ngitaru (Ms), olchani (Ms), orgilai (Ms)
<i>Zanthoxylum holtzianum</i> (Engl.) P.G. Waterman	Mjafari (Sw), mwinga jini (Sw)
Vernacular name ^a	Scientific names ^b
Kalilalila (Ha/Sw)	<i>Ehretia</i> sp. (Bor), Malvaceae; <i>Ficus</i> sp. (Mor)
Makusanya (Sw)	<i>Acalypha</i> sp. (Euph), <i>Azelia quanzensis</i> (Leg)
Mangube (unknown)	<i>Uvaria lucida</i> (Ann), Sapindaceae
Mdaa (Sw)	<i>Annona</i> sp. (Ann), <i>Euclaea</i> sp. (Eb)
Mfuleta (Kw/Sa/Sw)	<i>Azelia quanzensis</i> (Leg), <i>Albizia anthelmintica</i> (Leg), <i>Cassia abbreviata</i> (Leg), <i>Stylisma</i> sp. (Con)
Mfunguo (Sw)	<i>Acalypha</i> sp. (Euph), <i>Chenopodium album</i> (Ama), <i>Tetracera</i> sp. (Dil)
Mgombagomba (Sw)	<i>Suregada</i> sp. (Euph), <i>Ximenia</i> sp. (Ola)
Mgoto (Sw)	Anacardiaceae, <i>Diospyros</i> sp. (Ebe), <i>Euclaea</i> sp. (Ebe)
Mguruka (Kw/Sw)	<i>Boscia salicifolia</i> (Cap), <i>Zanthoxylum</i> sp. (Rut)
Mhombe (Sw)	<i>Ozoroa</i> sp. (Ana), <i>Sclerocarya birrea</i> (Ana), <i>Senna singueana</i> (Leg)
Vernacular name ^a	Scientific names ^b
Mjata (Sw)	<i>Barringtonia</i> sp. (Lec), <i>Combretum zeyheri</i> (Com), Malvaceae, <i>Pterocarpus</i> sp. (Leg)
Mjavikali (Sw)	<i>Ehretia</i> sp. (Bor), Lamiaceae
Mkirika (Sa/Sw)	<i>Ehretia</i> sp. (Bor), Euphorbiaceae
Mkole (Sw)	<i>Grewia</i> sp. (Mal), Lecythidaceae, <i>Poupartia minor</i> (Ana)
Mkomavikali	<i>Allophylus</i> sp. (Sap), <i>Clausena anisata</i> (Rut)
Mkongo (Sw)	<i>Azelia quanzensis</i> (Leg), <i>Uvaria tanzaniae</i> (Ann)
Mkongoe/Mkongowe (Sw)	<i>Poupartia minor</i> (Ana), <i>Suregada</i> sp. (Euph), <i>Vachellia</i> sp. (Leg)
Mkumbi (Sw)	Anacardiaceae, <i>Brackenridgea zanguebarica</i> (Och), Rutaceae
Mkunazi (Sw)	<i>Allophylus</i> sp. (Sap), <i>Uvaria</i> sp. (Ann)
Mkundekunde (Sw)	Anacardiaceae, <i>Cassia abbreviata</i> (Leg), <i>Senna</i> sp. (Leg)
Mkunga nilwa/mkungwa nilwa (Sw)	<i>Albizia anthelmintica</i> (Leg), <i>Boscia salicifolia</i> (Cap)
Mkunju (Sw)	<i>Abrus</i> sp. (Leg), <i>Harrisonia abyssinica</i> (Rut), <i>Maprounea</i> sp. (Euph), <i>Salvadora persica</i> (Sal)
Mkamba (Sa/Sw)	<i>Grewia</i> sp. (Mal), <i>Flueggea</i> sp. (Phy)
Mlama (Sw)	<i>Combretum hereroense</i> (Com), <i>Combretum molle</i> (Com)
Melemele/Mmelemele (Sw)	<i>Allophylus</i> sp. (Sap), <i>Cassia abbreviata</i> (Leg), <i>Holarrhena pubescens</i> (Apo)

(continued on next page)

Table 2 (continued)

Multilingualism and over-differentiation	
Scientific name	Vernacular names ^a
Mmoyomoyo (Sw)	<i>Deinbolia</i> sp. (Sap), <i>Thespesia danis</i> (Mal)
Mmumbu (Sw)	<i>Antidesma</i> sp. (Phy), <i>Sclerocarya birrea</i> (Ana)
Mnamata (Sw)	<i>Allophylus</i> sp. (Sap), <i>Desmodium gangeticum</i> (Leg)
Mpaja (Sw)	<i>Warburgia salutaris</i> (Can), <i>Warburgia stuhlmannii</i> (Can)
Mpapatiko (Sw)	<i>Afzelia quanzensis</i> (Leg), Meliaceae
Mpingi (Sw)	Anacardiaceae, <i>Parinari</i> sp. (Chry), <i>Poupartia minor</i> (Ana), <i>Ximenia caffra</i> (Ola)
Msaada (Sw)	<i>Crossopteryx febrifuga</i> (Rub), <i>Vangueria infausta</i> (Rub)
Msaka uchawi (Sw)	Convolvulaceae, <i>Warburgia stuhlmannii</i> (Can)
Msasambeghe (Sa/Sw)	<i>Crossopteryx febrifuga</i> (Rub), <i>Syzygium</i> sp. (Myr)
Msegese/Msegeshhe (Sa)	<i>Cassia</i> sp. (Leg), <i>Morella</i> sp. (Myr)
Msiga nyika (Sw)	<i>Adansonia digitata</i> (Mal), <i>Salvadora persica</i> (Sal)
Msigi (Sw)	<i>Allium</i> sp. (All), <i>Afzelia quanzensis</i> (Leg), <i>Securidaca</i> sp. (Pol)
Msofu (Sw)	<i>Kraussia kirkii</i> (Rub), <i>Uvaria</i> sp. (Ann), <i>Uvaria tanzaniae</i> (Ann)
Msufi(Msufi pori (Sw)	Anacardiaceae, <i>Grewia</i> sp. (Mal), Leguminosae, Malvaceae
Mtogo (Sw)	<i>Diplorhynchus condylocarponi</i> (Apo), <i>Senna</i> sp. (Leg),
Mtopetope (Sw)	<i>Albizia anthelmintica</i> (Leg), <i>Annona</i> sp. (Ann)
Mtutumama (Sw)	<i>Catunaregam</i> sp. (Rub), <i>Ximenia caffra</i> (Ola)
Mvule (Sw)	<i>Pterocarpus</i> sp. (Leg), <i>Zanthoxylum</i> sp. (Rut)
Mvunja hukumu/Mvunja ukumu (Sw)	<i>Ehretia</i> sp. (Bor), <i>Holarrhena pubescens</i> (Apo), Rubiaceae
Mwifu (Sw)	<i>Nauclea officinalis</i> (Rub), Rubiaceae, <i>Senegalia laeta</i> (Leg), <i>Zanthoxylum</i> sp.
Mwingajini (Sw)	Anacardiaceae, <i>Brackenridgea zanguebarica</i> (Och), <i>Strychnos</i> sp. (Log), <i>Vepris</i> sp. (Rut), <i>Volkameria</i> sp. (Lam), <i>Zanthoxylum</i> sp. (Rut)
Mwinula (Sw)	<i>Linzia melleri</i> (Comp), <i>Vachellia tortillis</i> (Leg)
Mzima (Sw)	<i>Afzelia</i> sp. (Leg), <i>Annona</i> sp. (Ann), <i>Ehretia</i> sp. (Bor)

^a Respective local languages mentioned by the participants are abbreviated: Arabic (Ar), Haya (Ha), Kwere (Kw), Maasai (Ms), Nyamwezi (Ny), Samba (Sa), Swahili (Sw), Zukuma (Zu).

^b Plant families are abbreviated as follows: Anacardiaceae (Ana), Amaranthaceae (Ama), Annonaceae (Ann), Apocynaceae (Apo), Boraginaceae (Bor), Canellaceae (Can), Capparaceae (Cap), Chrysobalanaceae (Chry), Combretaceae (Com), Convolvulaceae (Con), Dilleniaceae (Dil), Ebenaceae (Eb), Euphorbiaceae (Euph), Leguminosae (Leg), Malvaceae (Mal), Moraceae (Mor), Myrtaceae (Myr), Ochnaceae (Och), Olacaceae (Ola), Phyllanthaceae (Phy), Polygalaceae (Pol), Rubiaceae (Rub), Rutaceae (Rut), Salvadoraceae (Sal), Sapindaceae (Sap).

differently, but have the same function and are therefore grouped under the same name. Differences in species composition between samples with the same local name may also be caused by misidentification or adulteration. This is a well-known problem that is enhanced by commercialisation and urbanisation, since the middlemen and vendors get too detached from the plants in the wild and are unable to reliably identify species or intentionally sell species that are more easily accessible than scarce medicinal plants (Posadzki et al., 2013; Seethapathy et al., 2014). Moreover, medicinal plants traded as powders, shredded material or in mixtures are often subject to misidentification and adulteration (Coghlan et al., 2012; Kool et al., 2012; Newmaster et al., 2013; Raclariu et al., 2017b).

4.2. Identification success using DNA barcoding

Molecular methods such as DNA barcoding are increasingly applied for the authentication of herbal medicine (Chen et al., 2010; Coghlan et al., 2012; Newmaster et al., 2013; Raclariu et al., 2017b) and the monitoring of trade in wild-harvested plant and animal species (Wasser et al., 2007; Baker et al., 2010; Collins et al., 2012; Ghorbani et al., 2016). For land plants the use of *rbcl* and *matK* as core barcodes has been recommended (CBOL Plant Working Group, 2009), as the mitochondrial marker COI used for animals is too slow-evolving in plants (Kress et al., 2005). In this study *rbcl* and *matK* have been used in combination with nrITS, which has proven useful in similar studies (Chen et al., 2010; Kool et al., 2012; Ghorbani et al., 2017). At 64% *rbcl* showed the highest sequencing success rate in this study, and it enabled identification of several genera linked to local names that had hitherto not been identified based on morphology or literature, such as *mchekacheka* (*Parinari* sp.), *mtundwi* (*Lansea* sp.) and *upendo* (*Anacyclus* sp.). However, *rbcl* showed an overall low discriminatory power when it came to species-level identification (12%), and most samples could only be identified to genus (49%) or family-level (38%). Similar results in other studies (Chen et al., 2010; Li et al., 2011) confirm that *rbcl* is

unsuitable for studies requiring specific identification from a large set of putative species, but its primer universality and high amplification rate make useful in identification of degraded material for which no identification hypothesis exists. *matK* yielded identifications for all samples and showed a species-level discrimination success of 50%. However, the sequencing success for this marker was rather low with a success rate of only 47%. Both the low amplification success and the high species-level identification success of *matK* have been reported by other authors (Kress and Erickson, 2007; Fazekas et al., 2008; Kool et al., 2012). The low amplification success makes it problematic as a molecular identification marker for degraded market samples using amplicon based DNA barcoding methods. Early studies investigating suitable land plant barcodes have disqualified the use of nrITS due to alignment difficulties, the presence of multiple paralogous copies and the low amplification rates due to problems with the secondary structure (Kress et al., 2005). However, more recently nrITS has been proposed as complementary marker (Li et al., 2011; Kool et al., 2012), and the ability to amplify the ~300 bp nrITS2 marker separately with primers annealing in the conserved 5.8S and 26S regions has made it a suitable marker for identification of plants used in herbal medicine (Chen et al., 2010) and DNA metabarcoding studies (Blaalid et al., 2013; Richardson et al., 2015; de Boer et al., 2017; Raclariu et al., 2017b, 2017a, 2017c; Veldman et al., 2017). A way to increase amplification and overall identification success would be the use of mini-barcodes, since these are particularly suitable for degraded material (Valentini et al., 2009; Kress et al., 2015) or shorter regions, such as nrITS2 (Chen et al., 2010). This could further aid the identification of vernacular names for which no species hypothesis exists, based on previous research. However, longer regions would still be required to ensure higher chances of species-level identification, especially between closely related species, which would likely not be possible with short barcodes. In our study *matK* showed the highest species-level discrimination power, whereas nrITS showed a higher amplification success as compared to *matK*. Amplification of fungal nrITS (Kress et al.,

2005; Hollingsworth, 2011; Kool et al., 2012) was mitigated through the use of plant specific primers (Sun et al., 1994). Of the previously reported disadvantages of nrITS (Kress et al., 2005), the only one that surfaced in our study was the presence of paralogous copies, which impeded identification results in some cases. For example, samples that matched to *Zanthoxylum* species, would usually do this with a very high percentage identity match, but in some cases (e.g. MP383, MP598, MP739) the query sequence could hardly be identified up to genus level. This could indicate that the sample actually belonged to a species not represented in the reference database, but the large sequence divergences in these query sequences compared to the average sequence divergence within the genus in combination with the identifications made with *matK* and *rbcL*, made it more likely to assume that a paralogous nrITS copy was sequenced. Not all samples could be identified to species-level, but many identifications made by DNA barcoding have given a clear indication of the identity of previously unknown local names. These 'newly' identified plant species were often previously documented in other studies, but traded under another vernacular name by some of the vendors we interviewed. Based on generic or even family level identifications of previously unidentified species, one can narrow down the search and look at known medicinal plants within these plant genera or families, in combination with species occurrence data. These findings in turn suggest how the reference database should be expanded to allow for more accurate identifications. Our study shows that additional reference sequences are needed for *Allophylus*, *Anacardiaceae*, *Annona*, *Cassia*, *Celastraceae*, *Ehretia*, *Loranthaceae*, *Senna*, *Strychnos*, *Suregada*, *Uvaria* and *Zanthoxylum*, since these taxa contain frequently traded species that could often only be identified up to genus or family level yet in this study. Especially for the frequently traded species it is important to have reliable identifications, since some of them, such as *Suregada lithoxylla* (Pax & K.Hoffm.) Croizat are endemic and IUCN Red Listed as Vulnerable (VU), whereas others such as *Suregada zanzibariensis* are more common and considered to be of Least Concern (LC) (IUCN, 2018).

4.3. Comparing DNA barcoding and conventional methods

When comparing the different identifications methods, we detected incongruences in more than 60% of the cases. Incongruences on species and genus level are somewhat expected, since species within the same genus or within closely related genera are sometimes sold under the same vernacular name (Nahashon, 2013; Otieno et al., 2015). The amount of incongruence on family level, however, is alarming and confirms the need for more thorough identification methods. Some of the incongruence between identifications using conventional and molecular methods might be caused by contamination, but the DNA barcoding results can also indicate intentional or unintentional adulteration. Another reason for observed incongruence can be temporal substitution where a species traded today is no longer the same species as traded in the past (de Boer et al., 2014; Kool et al., 2012; Ouarghidi et al., 2012). Evidence for adulteration and/or substitution is particularly strong when a product is sampled multiple times from different vendors and is consequently identified as something different than proposed by literature using molecular data. An example of this is the product *mkumbi*, which is said to be *Hymenaea verrucosa* Gaertn. by Abihudi (2014), but was repeatedly identified as *Brackenridgea zanguebarica* Oliv. using DNA barcoding (Appendix 1). Comparing DNA barcoding results with identifications from conventional methods also confirms the suspicion that some products are under-differentiated. The product *mmelemele* is said to be either *Holarrhena pubescens* Wall. ex G.Don or *Allophylus rubifolius* (Hochst. ex A.Rich.) Engl. according to literature (Abihudi, 2014; Nahashon, 2013), and this is confirmed by our DNA barcoding results, where three *mmelemele* samples were identified as *Holarrhena pubescens* and one as a *Allophylus* species. In case of undecided identifications with incongruences such as *bukoi*,

chamali, *engilelo* and *mmavimavi* for which only one sample was collected, attempts can be made to collect the same product from other vendors and to accompany vendors to the field. For some products, multiple samples identified as the same species, but one or two samples as a different species. *Mfunguo* samples for example, were mostly identified as *Chenopodium* species (Amaranthaceae), which is in congruence with literature, but also showed an identification with DNA barcoding as *Acalypha* sp. and *Tetracera* sp.. Another example is *mpapatiko*, which identifies as *Azelia quanzensis* (Fabaceae) using DNA barcoding, except for one sample, which identifies as a *Meliaceae* species. To know whether these are adulterations, errors or contamination, or whether these species are really considered to be *mfunguo* or *mpapatiko* as well, more samples should be analysed. Once a sample was identified using DNA barcoding and gave a surprising result, either because no previous species hypothesis was available or because the molecular identification did not match the one using conventional methods, an *a posteriori* (Ghorbani et al., 2017) search was performed to see if the species was actually used as medicine in Tanzania. In case of a genus level identification, it was sometimes possible to add a conferred species hypothesis, because there was only one species within that genus that was reported as medicinal in Tanzania. For the DNA barcoding identification of *Tinnea* sp., our species hypothesis became cf. *Tinnea aethiopicum*, since this is the only *Tinnea* species documented as medicinal in the country. Leaving the identification at *Tinnea* sp. would result in loss of information, since the genus *Tinnea* contains 19 species (Mabberley, 2008). A *posteriori* information allowed us to narrow down the identifications for 40 of our samples to putative species level. This method can prove very useful in future projects aiming to expand reference databases, quantify trade and employ conservation efforts.

5. Conclusions

This study has made a first attempt to use DNA barcoding in addition to literature and morphology to identify species traded on African medicinal plant markets. Combining the three methods, 58% of the products could be identified to species level, revealing a diversity of at least 175 plant species from 65 plant families. These identifications shed new light on the diversity of species traded in Tanzania. Results from this study can be used to quantify the trade in herbal medicine and prioritize species for conservation. It can also be used to check if species substitution is taking place and provide a baseline for studies in other seasons, cities and countries, as well as to assess and monitor temporal changes. When traditional medicine develops into a standardized commercialised business, these methods can be used as authentication methods and for quality control. Many of the identifications based on literature and/or morphology were not in congruence with those resulting from DNA barcoding. This shows the need for additional studies on DNA barcoding of African medicinal plant, but also importantly the fluidity of species in local classification. Over-exploitation and depletion of preferred medicinal taxa, especially if these include species with limited distributions within the same genus, threaten local populations and endemic species.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jep.2019.112495>.

Appendix 1

An overview of all identifications per sample: collection number, vernacular name, local language(s), identification based on conventional methods, consensus identification based on DNA barcoding, level of conflict between different methods, species hypothesis, plant family and identification methods used.

Collection #	Vernacular name	Language	Species ID conv. meth.	Consensus ID barcoding ^a	Conflict ^b	Species hypothesis	Family	ID methods ^c
MP 715	Alkasus	Arabic	<i>Abrus precatorius</i> L.	<i>Glycyrrhiza</i> sp. ^f	G	<i>Glycyrrhiza</i> sp.	Leguminosae	AP, B, M
CP346	Aloe vera	Swahili/ English	<i>Aloe</i> sp.	<i>Aloe vera</i> ^f	n	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	B, M
CP347	Aloe vera	Swahili/ English	<i>Aloe</i> sp.	<i>Aloe vera</i> ^{m,r}	n	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	B, M
CP348	Aloe vera	Swahili/ English	<i>Aloe</i> sp.	<i>Aloe vera</i> ^{m,r}	n	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	B, M
CP231	Aloe vera	Swahili/ English	<i>Aloe</i> sp.	–	–	<i>Aloe</i> sp.	Xanthorrhoeaceae	M
CP279	Aloe vera	Swahili/ English	<i>Aloe</i> sp.	<i>Aloe vera</i> ^{m,r}	n	<i>Aloe vera</i> (L.) Burm.f.	Xanthorrhoeaceae	B, M
MP 708	Bakalihadi/Bakar had	Arabic	–	–	–	indet.	–	–
CP362	Bakar hadi	Arabic	–	–	–	indet.	–	–
CP368	Barinji	–	–	–	–	indet.	–	–
MP 701	Black shubiri	–	<i>Aloe</i> sp.	–	–	<i>Aloe</i> sp.	Xanthorrhoeaceae	L
MP 727	Bukoi	Maasai	<i>Terminalia brownii</i> Fries/ <i>Hymenaea verrucosa</i> Gaertn.	Ochnaceae ^f	F	Ochnaceae sp.	Ochnaceae	AP, B, L
MP 720	Chamali	–	<i>Agathisanthemum bojeri</i> Klotzsch. Syn.	<i>Foeniculum vulgare</i> ^{i,m}	F	<i>Foeniculum vulgare</i> Mill.	Apiaceae	B, L
MP 439	Chanda	Swahili	–	–	–	indet.	–	–
MP 534	Cheusi	Swahili	–	–	–	indet.	–	–
MP 526	Dalifilifili	Arabic	–	Piperaceae ^{i,r}	–	Piperaceae sp.	Piperaceae	B
MP 587	Dwayu/Dwatu	Samba/ Swahili	<i>Turraea robusta</i> Guerke	Meliaceae ⁱ	n	<i>Turraea robusta</i> Guerke	Meliaceae	B, L
MP 566	Elengelenge	Maasai	–	–	–	indet.	–	–
MP 611	Endulele	Maasai	–	<i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
MP 563	Engamai	Maasai	<i>Balanites aegyptiaca</i> (L.) Delile	Rubiaceae ^f	F	Rubiaceae sp.	Rubiaceae	B, L
MP 601	Engilelo	Maasai	<i>Harrisonia abyssinica</i> Oliv.	<i>Thespesia danis</i> ⁱ	F	<i>Thespesia danis</i> Oliv.	Malvaceae	B, L
MP 600	Engomai	Maasai	<i>Balanites aegyptiaca</i> (L.) Delile	<i>Ximenia caffra</i> ^{i,r}	G	<i>Ximenia caffra</i> Sond.	Olcaceae	B, L
MP 726	Figili	–	–	<i>Raphanus sativus</i> ^m	–	<i>Raphanus raphanistrum</i> subsp. <i>sativus</i> (L.) Domin	Brassicaceae	B
MP 572	Fivi	Samba/ Swahili	<i>Artemisia afra</i> Jacq. ex Willd.	<i>Artemisia</i> sp. ^{i,m,r}	n	<i>Artemisia afra</i> Jacq. ex Willd.	Compositae	B, L
MP 795	Fivi	Samba	<i>Artemisia afra</i> Jacq. ex Willd.	<i>Artemisia</i> sp. ^f	n	<i>Artemisia afra</i> Jacq. ex Willd.	Compositae	B, L
MP 696	Fivi/Pakanga	Samba/ Swahili	<i>Artemisia afra</i> Jacq. ex Willd.	<i>Artemisia</i> sp. ^f	n	<i>Artemisia afra</i> Jacq. ex Willd.	Compositae	B, L
MP 770	Funga ng'ombe	Swahili	–	<i>Cassia</i> sp. ^m	–	<i>Cassia</i> sp.	Leguminosae	B
MP 771	Fungafunga	–	–	<i>Sclerocarya birrea</i> ^m	–	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B
MP 317	Fusho chavu	Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
MP 340	Fusho chavu	–	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
MP 346	Fusho safi	Swahili	–	–	–	indet.	–	–
MP 325	Fusho safi	Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
MP 567	Giloilu	Maasai	–	Rubiaceae ^f	–	Rubiaceae sp.	Rubiaceae	B
MP 432	Gwangwandu	Kwere	–	<i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
CP364	Habat muruki	Arabic	–	<i>Croton</i> sp. ^f	–	<i>Croton</i> sp.	Euphorbiaceae	B, M
CP365	Habat rishadi	Arabic	–	–	–	indet.	–	–
MP 523	Habati soda	Arabic	–	<i>Nigella</i> sp. ^f	–	<i>Nigella</i> sp.	Ranunculaceae	B
CP366	Habirinji	Arabic	–	–	–	indet.	–	–
MP 752	Hahi	–	–	<i>Ocimum basilicum</i> ^{m,r}	–	<i>Ocimum basilicum</i> L.	Lamiaceae	B
MP 424	Halanya	Swahili	–	–	–	indet.	–	–
MP 373	Halbati nuksi	Arabic	–	–	–	indet.	–	–
CP351	Haldar	Arabic	–	<i>Brassica</i> sp. ^f	–	<i>Brassica</i> sp.	Brassicaceae	B
CP369	Halilinj	Arabic	–	–	–	indet.	–	–
MP 525	Halimali	Arabic	–	<i>Peganum harmala</i> ^f	–	<i>Peganum harmala</i> L.	Nitrariaceae	B
CP102	Haranya/ Kivumbasi ki- kubwa	–	cf. <i>Ocimum</i> sp.	–	–	cf. <i>Ocimum</i> sp.	Lamiaceae	M
MP 524	Haridali	Arabic	–	<i>Brassica</i> sp.	–	<i>Brassica</i> sp.	Brassicaceae	B
MP 359	Haridari	Arabic	–	<i>Brassica</i> sp. ^f	–	<i>Brassica</i> sp.	Brassicaceae	B
MP 724	Haridari	–	–	–	–	indet.	–	–
MP 699	Harmal	Arabic	–	<i>Peganum</i> sp.	–	<i>Peganum harmala</i> L.	Nitrariaceae	AP, B
MP 330	Heshima ya ndoa	Swahili	–	–	–	indet.	–	–
MP 331	Heshima ya ndoa	Swahili	–	–	–	indet.	–	–
CP66	Hoza/Poza	–	<i>Cissus rotundifolia</i> Vahl	<i>Cissus</i> sp. ^{m,r}	n	<i>Cissus rotundifolia</i> Vahl	Vitaceae	B, M
MP 774	Hozandoghwa	Samba	<i>Hyptis pectinata</i> (L.) Poit.	<i>Combretum</i> sp. ^f	F	<i>Hyptis pectinata</i> (L.) Poit.	Lamiaceae	B, L

MP 604	Ilai	Maasai	–	–	–	indet.	–	–
MP 362	Iriki	Swahili	<i>Elettaria cardamomum</i> (L.) Maton	<i>Alpinia fax</i> ⁱ	G	<i>Elettaria cardamomum</i> (L.) Maton	Zingiberaceae	B, M
MP 335	Itetemia	Nyamwezi	–	Apocynaceae ^{m,r}	–	cf. <i>Oncinotis</i> sp.	Apocynaceae	AP, B
MP 629	Itetemia	Nyamwezi/ Swahili	–	<i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
MP 318	Itetemia	Kwere	–	–	–	indet.	–	–
MP 455	Itinginya	Lamu (from Mombasa)	–	–	–	indet.	–	–
MP 334	Itinginya	Nyamwezi	–	Poaceae ^f	–	Poaceae sp.	Poaceae	B
MP 433	Jambamba	Swahili	–	–	–	indet.	–	–
MP 437	Jangalu	Swahili	cf. <i>Aleurites moluccanus</i> (L.) Willd.	indet	F	cf. <i>Aleurites moluccanus</i> (L.) Willd.	Euphorbiaceae	B, M
MP 445	Jeta	Kwere	–	<i>Suregada</i> sp. ^m	–	<i>Suregada</i> sp.	Euphorbiaceae	B
MP 361	Kachili	Swahili	–	<i>Kaempferia</i> sp. ⁱ	–	<i>Kaempferia galanga</i> L.	Zingiberaceae	AP, B
MP 722	Kachili	–	–	Zingiberaceae ^f	–	<i>Kaempferia galanga</i> L.	Zingiberaceae	AP, B
CP215	Kahumbila	–	–	<i>Indigofera</i> sp. ^f	–	<i>Indigofera</i> sp.	Leguminosae	B
MP 710	Kakila	Arabic	–	<i>Whitania</i> sp. ^f	–	cf. <i>Withania somnifera</i> (L.) Dunal	Solanaceae	AP, B
MP 718	Kal-kaliyatu	–	–	<i>Andrographis</i> sp. ^f	–	<i>Andrographis</i> sp.	Acanthaceae	B
MP 367	Kaliaria	Swahili	–	–	–	indet.	–	–
MP 613	Kalilalila	Swahili	–	<i>Ehretia</i> sp. ^{i,r}	–	<i>Ehretia</i> sp.	Boraginaceae	B
MP 693	Kalilalila	Swahili	–	<i>Ficus</i> sp.	–	<i>Ficus</i> sp.	Moraceae	B
MP 493	Kalilalila	Haya	–	Malvaceae ^f	–	Malvaceae sp.	Malvaceae	B
MP 333	Kalilila	Swahili	–	Apocynaceae ^{i,m,r}	–	Apocynaceae sp.	Apocynaceae	B
MP 366	Kalilila	Swahili	–	Apocynaceae ^f	–	Apocynaceae sp.	Apocynaceae	B
MP 709	Kalkam	Arabic	<i>Curcuma longa</i> L.	<i>Curcuma</i> sp. ^f	n	<i>Curcuma longa</i> L.	Zingiberaceae	B, M
MP 519	Kamna adiabhi	Arabic	–	<i>Anethum graveolens</i> ^{i,r}	–	<i>Anethum graveolens</i> L.	Apiaceae	B
MP 700	Kamni abiasi	Arabic	–	Apiaceae ^f	–	Apiaceae sp.	Apiaceae	B
MP 698	Kamni aswed	Arabic	–	<i>Baccharoides adoensis</i> ^m	–	<i>Baccharoides adoensis</i> (Sch.Bip. ex Walp.) H.Rob.	Compositae	B
MP 742	Kamnyangala	Zukuma	–	<i>Boscia salicifolia</i> ^m	–	<i>Boscia salicifolia</i> Oliv.	Capparaceae	B
CP354	Kamuni abial	Arabic	–	<i>Anethum graveolens</i> ^{m,r}	–	<i>Anethum graveolens</i> L.	Apiaceae	B
CP353	Kamuni aswedi	Arabic	–	Compositae ^{m,r}	–	Compositae sp.	Compositae	B
MP 529	Kaselela	Swahili	–	–	–	indet.	–	–
MP 643	Kasera	Swahili	–	Celastraceae ^{i,m,r}	–	Celastraceae sp.	Celastraceae	B
MP 327	Kasera	Swahili	–	–	–	indet.	–	–
MP 504	Kasera ya bara 'samba'	Swahili	–	–	–	indet.	–	–
MP 354	Kasera ya vizimba	Swahili	–	–	–	indet.	–	–
MP 615	Kaserewa	Swahili	–	–	–	indet.	–	–
MP 705	Kashkash	–	–	–	–	indet.	–	–
MP 548	Katakwa	Samba/ Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
CP228	Kiandama	–	<i>Culcasia falcifolia</i> Engl.	<i>Culcasia</i> sp. ^f	n	<i>Culcasia falcifolia</i> Engl.	Araceae	B, M
MP 328	Kiazi cha mwita	Swahili	–	–	–	indet.	–	–
CP339	Kibamilo	–	–	–	–	indet.	–	–
CP263	Kibazi pori	–	–	–	–	Lamiaceae sp.	Lamiaceae	M
MP 596	Kifendu	Samba/ Swahili	–	<i>Senna</i> sp. ⁱ	–	<i>Senna</i> sp.	Leguminosae	B
CP227	Kifunga namsi	–	–	<i>Conostomium quadrangulare</i> ^f	–	<i>Conostomium quadrangulare</i>	Rubiaceae	B
MP 618	Kigulagembe	Swahili	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	<i>Annona glabra</i> ^m	F	<i>Annona glabra</i> L.	Annonaceae	B, L
CP122	Kigutwi cha buga	–	–	–	–	indet.	–	–
CP144	Kihindihindi	–	<i>Cissus quadrangularis</i> L.	<i>Cissus</i> sp. ^{m,r}	n	<i>Cissus quadrangularis</i> L.	Vitaceae	B, M
MP 435	Kihindihindi	Swahili	–	<i>Cissus quadrangularis</i> L.	–	<i>Cissus quadrangularis</i> L.	Vitaceae	L
CP101	Kihindihindi	–	–	<i>Cissus quadrangularis</i> L.	–	<i>Cissus quadrangularis</i> L.	Vitaceae	M
CP164	Kikulagembe/ Mkulagembe	–	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb.	–	–	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb.	Leguminosae	M
MP 512	Kiloriti	Swahili	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. xanthophloea</i> (Benth.) P.J.H.Hurter	–	–	<i>Vachellia</i> sp.	Leguminosae	L
MP 728	Kiloriti	Maasai	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. xanthophloea</i> (Benth.) P.J.H.Hurter	–	–	<i>Vachellia</i> sp.	Leguminosae	L
MP 764	Kiloriti	–	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. xanthophloea</i> (Benth.) P.J.H.Hurter	–	–	<i>Vachellia</i> sp.	Leguminosae	L
MP 570	Kiloriti	Maasai	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. xanthophloea</i> (Benth.) P.J.H.Hurter	<i>Senegalia laeta</i> ^{i,r}	G	<i>Senegalia laeta</i> (R.Br. ex Benth.) Seigler & Ebinger (unresolved)	Leguminosae	B
CP230	Kiloweko	–	–	–	–	indet.	–	–
CP2	Kindukuli	–	<i>Hugonia castaneifolia</i> Engl. (unresolved)	–	–	<i>Hugonia castaneifolia</i> Engl. (unresolved)	Linaceae	L
CP223	Kindukuli	–	<i>Hugonia castaneifolia</i> Engl. (unresolved)	Phyllanthaceae ^{m,r}	F	Phyllanthaceae sp.	Phyllanthaceae	B, L
MP 670	Kindukuzi	Kwere	–	<i>Fadogia elskensii</i> De Wild.	–	<i>Fadogia elskensii</i> De Wild.	Rubiaceae	L
MP 347	Kinga nyumba	Swahili	–	–	–	indet.	–	–
MP 530	Kisabuni	Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B

MP 760	Kisakuakuku	–	<i>Amaranthus spinosus</i> L.	^r <i>Albizia anthelmintica</i> ^m	F	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 734	Kisasa	Swahili	–	<i>Diplorhynchus condylocarpon</i> ^{m,r}	–	<i>Diplorhynchus condylocarpon</i> (Müll.Arg.) Pichon	Apocynaceae	B
MP 716	Kistwi - fusho	–	–	–	–	indet.	–	–
MP 363	Kisubali	Swahili	–	<i>Holarrhena pubescens</i> ^{i,m,r}	–	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B
CP20	Kitungo pori	–	<i>Drimia</i> sp.	<i>Drimia</i> ^r <i>altissima</i> ^m	n	<i>Drimia altissima</i> (L.f.) Ker Gawl.	Asparagaceae	B, M
CP28	Kivumbasi	–	cf. <i>Ocimum</i> sp.	ⁱ <i>Ocimum</i> sp. ^r	n	<i>Ocimum</i> sp.	Lamiaceae	B, M
CP130	Kivumbasi	–	cf. <i>Ocimum</i> sp.	–	–	<i>Ocimum</i> sp.	Lamiaceae	M
MP 423	Kivumbasi	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	Leguminosae ^r	F	<i>Ocimum</i> sp.	Lamiaceae	B, L
MP 665	Kivumbasi	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	<i>Ocimum basilicum</i> ⁱ	n	<i>Ocimum basilicum</i> L.	Lamiaceae	B, L
MP 533	Kivumbasi	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	<i>Ocimum</i> sp. ^r	n	<i>Ocimum</i> sp.	Lamiaceae	B, M
CP291	Kivumbasi ki-kubwa	–	cf. <i>Ocimum</i> sp.	<i>Ocimum basilicum</i> ^m	n	<i>Ocimum basilicum</i> L.	Lamiaceae	B, M
MP 309	Kizabuni	Swahili	<i>Bauhinia thonningii</i> Schum.	–	–	<i>Bauhinia thonningii</i> Schum.	Leguminosae	L
MP 482	Kizabuni	Swahili	<i>Bauhinia thonningii</i> Schum.	–	–	<i>Bauhinia thonningii</i> Schum.	Leguminosae	L
MP 612	Kizabuni	Swahili	<i>Bauhinia thonningii</i> Schum.	–	–	<i>Bauhinia thonningii</i> Schum.	Leguminosae	L
CP258	Komamanga	–	<i>Punica granatum</i> L.	–	–	<i>Punica granatum</i> L.	Lythraceae	M
MP 711	Koto	Arabic	–	<i>Melilotus</i> sp. ^r	–	<i>Melilotus</i> sp.	Leguminosae	AP, B
MP 349	Kumuta alie potepote/Mwitu	Swahili	–	–	–	indet.	–	–
CP350	Kusti	Arabic	–	<i>Acorus calamus</i> ^r	–	<i>Acorus calamus</i> L.	Acoraceae	B
MP 723	Kuzibara	–	–	<i>Holarrhena pubescens</i> ^{m,r}	–	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B
CP370	Kuzibara	Arabic	–	<i>Holarrhena pubescens</i> ^{m,r}	–	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B
MP 528	Kuzubara	Arabic	–	<i>Holarrhena pubescens</i> ^m	–	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B
CP371	Kweme	–	<i>Telfairia pedata</i> (Sm.) Hook.	<i>Marah</i> sp. ^r	G	<i>Cucurbitaceae</i> sp.	Cucurbitaceae	B, L
MP 684	Kweme	–	<i>Telfairia pedata</i> (Sm.) Hook.	–	–	<i>Telfairia pedata</i> (Sm.) Hook.	Cucurbitaceae	L
CP288	Liwa/msalasi	–	<i>Friesodielsia obovata</i> (Benth.) Verdc.	–	–	<i>Friesodielsia obovata</i> (Benth.) Verdc.	Annonaceae	L
MP 704	Liwa/Msandali	Samba/Swahili	<i>Osyris lanceolata</i> Hochst. & Steud.	–	–	<i>Osyris lanceolata</i> Hochst. & Steud.	Santalaceae	L
MP 609	Loisuki	Maasai	<i>Zanthoxylum chabyleum</i> Engl.	ⁱ <i>Zanthoxylum</i> sp. ^m	n	<i>Zanthoxylum chabyleum</i> Engl.	Rutaceae	B, L
MP 598	Loisuki	Maasai	<i>Zanthoxylum chabyleum</i> Engl.	<i>Zanthoxylum</i> sp. ^{i,m,r}	n	<i>Zanthoxylum chabyleum</i> Engl.	Rutaceae	B, L
MP 607	Loodwa	Maasai	<i>Embelia schimperi</i> Vatke	indet	y	<i>Embelia schimperi</i> Vatke	Primulaceae	B, L
MP 739	Lufyambo	Swahili	<i>Abrus precatorius</i> L.	<i>Ocimum basilicum</i> ^{m,r}	F	<i>Ocimum basilicum</i> L.	Lamiaceae	B
MP 446	Luhaho	Swahili	–	^r <i>Zanthoxylum</i> sp. ^{i,m}	–	<i>Zanthoxylum</i> sp.	Rutaceae	B
MP 744	Lukuta	–	–	–	–	indet.	–	–
MP 320	Lulilo	Swahili	–	–	–	indet.	–	–
MP 339	Lulilo	from Kigoma	–	–	–	indet.	–	–
MP 756	Lunduta	–	–	<i>Acalypha</i> sp. ^{i,m,r}	–	cf. <i>Acalypha fruticosa</i> Forssk.	Euphorbiaceae	B
MP 730	Lupande	Maasai	–	–	–	indet.	–	–
MP 407	Lusekela	Swahili	–	<i>Suregada</i> sp. ^{i,r}	–	<i>Suregada</i> sp.	Euphorbiaceae	B
CP97	M-basu (Mvumbulo, Mpachu)	–	–	<i>Salvadora</i> ^r <i>persica</i> ^{m,r}	–	<i>Salvadora persica</i> L.	Salvadoraceae	B
CP150	M-basu (with Mbungo)	–	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon	Apocynaceae ^{i,m,r}	n	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon	Apocynaceae	AP, B, M
CP142	M-basu (ya mbungo)	–	<i>Landolphia</i> sp.	Sapindales ^{m,r}	F	<i>Landolphia</i> sp.	Apocynaceae	AP, M
CP77	Mabungo	–	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon	–	–	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon	Apocynaceae	AP, M
CP68	Machilika	–	–	–	–	indet.	–	–
MP 660	Madangura	Kwere/Zaramo	–	–	–	indet.	–	–
CP67	Madimula	–	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^{m,r}	n	<i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	B, M
MP 369	Majano pori	Swahili	<i>Curcuma longa</i> L.	–	–	<i>Curcuma longa</i> L.	Zingiberaceae	M
MP 319	Maku sanya	Swahili	–	^r <i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
MP 461	Makusanya	Swahili	–	<i>Acalypha</i> sp. ^r	–	cf. <i>Acalypha fruticosa</i> Forssk.	Euphorbiaceae	B
MP 355	Makusanya	Swahili	–	–	–	indet.	–	–
CP205	Makweme	Swahili	<i>Telfairia pedata</i> (Sm.) Hook.	<i>Marah</i> sp. ^r	G	<i>Cucurbitaceae</i> sp.	Cucurbitaceae	B, L
CP265	Mama kafa (mama died)	Swahili	–	<i>Solanum</i> sp. ^{m,r}	–	<i>Solanum</i> sp.	Solanaceae	AP, B
MP 706	Manemane	Swahili	–	–	–	indet.	–	–
CP361	Manemane	Swahili	–	–	–	indet.	–	–
MP 371	Mangube	Swahili	–	–	–	indet.	–	–
MP 415	Mangube	Swahili	–	–	–	indet.	–	–
MP 500	Mangube	Swahili	–	–	–	indet.	–	–
MP 743	Mangube	Swahili	–	Sapindaceae ^r	–	Sapindaceae sp.	Sapindaceae	B
MP 404	Mangube	Swahili	–	<i>Uvaria lucida</i> ^m	–	<i>Uvaria lucida</i> Bojer ex Benth.	Annonaceae	B

CP10	Manjani ya Bahari	Swahili	–	–	–	indet.	–	–
CP239	Mavimavi	Swahili	<i>Paederia bojeriana</i> (A.Rich. ex DC.) Drake	<i>Paederia</i> sp. ^{m,r}	n	<i>Paederia bojeriana</i> (A.Rich. ex DC.) Drake	Apocynaceae	B, L
MP 713	Mawaride	Arabic	<i>Rosa</i> sp.	<i>Rosa</i> sp. ^f	n	<i>Rosa</i> sp.	Rosaceae	B, M
MP 360	Mawaridi	Swahili	<i>Rosa</i> sp.	–	–	<i>Rosa</i> sp.	Rosaceae	M
MP 310	Mawe ya nyoka	Swahili	–	–	–	indet.	–	–
MP 483	Mbalikiwa	Swahili	–	–	–	indet.	–	–
MP 773	Mbambakofi	Samba	<i>Afzelia quanzensis</i> Welw.	<i>Acalypha</i> sp. ^{i,m,r}	F	cf. <i>Acalypha fruticosa</i> Forssk.	Euphorbiaceae	B, L
CP37	Mbasu (with fruits)	Swahili	–	–	–	Apocynaceae sp.	Apocynaceae	B
CP33.2	Mbasu (with fruits)	Swahili	–	–	–	indet.	–	–
CP33.1	Mbasu (without fruits)	Swahili	–	–	–	indet.	–	–
CP243	Mbasu wa bungo (Mpachu)	Swahili	–	–	–	Apocynaceae sp.	Apocynaceae	B
CP242	Mbasu wa goga-bundi (Mpachu)	Swahili	–	–	–	<i>Secamone</i> sp.	Apocynaceae	AP, B
CP218	Mbasu wa Mkongodeka	Swahili	–	–	–	<i>Secamone</i> sp.	Apocynaceae	AP, B
CP216	Mbasu wa Mtogoli	Swahili	–	–	–	<i>Secamone</i> sp.	Apocynaceae	AP, B
CP244	Mbasu wa mtulavuha	Swahili	–	–	–	cf. <i>Jasminum fluminense</i> Vell.	Oleaceae	AP, B
CP245	Mbasu wa mtulavuha	Swahili	–	–	–	indet.	–	–
CP217	Mbasu wa Mwevumbulo	Swahili	–	–	–	cf. <i>Jasminum fluminense</i> Vell.	Oleaceae	AP, B
CP241	Mbasu wa Mwevumbulo (Mpachu)	Swahili	–	–	–	cf. <i>Jasminum fluminense</i> Vell.	Oleaceae	AP, B
MP 552	Mbega/Mfuleta	Samba/Swahili	<i>Albizia anthelmintica</i> Brongn.	–	–	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	L
MP 594	Mbokwe	Samba/Swahili	<i>Annona senegalensis</i> Pers.	<i>Annona</i> sp. ^f	n	<i>Annona senegalensis</i> Pers.	Annonaceae	B, L
MP 406	Mbula	Swahili	<i>Parinari curatellifolia</i> Planch. Ex Benth.; <i>P. excelsa</i> Sabine	–	–	<i>Parinari</i> sp.	Chrysobalanaceae	AP, L
CP341	Mbuyu	Swahili	–	<i>Gardenia</i> sp. ^{m,r}	F	<i>Gardenia</i> sp.	Rubiaceae	AP, B, M
CP297	Mbuyu	Swahili	cf. <i>Sclerocarya</i> sp.	–	–	cf. <i>Sclerocarya</i> sp.	Anacardiaceae	M
CP12	Mbuyu	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	–	–	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	M
CP325	Mwakabwaka	Swahili	cf. <i>Albizia anthelmintica</i> Brongn.	<i>Albizia</i> ^f <i>anthelmintica</i> ^m	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, M
CP264	Mbwemwendeko	Swahili	–	<i>Ehretia</i> sp. ^{i,m,r}	–	<i>Ehretia</i> sp.	Boraginaceae	B
MP 471	Mcheke	Swahili	<i>Annona acuminata</i> Saff./ <i>A. cherimola</i> Mill./ <i>A. senegalensis</i> Pers./ <i>A. squamosa</i> L.	<i>Elaeodendron</i> sp. ^f	F	<i>Annona</i> sp.	Annonaceae	B, L
CP226	Mcheke na mbingo	Swahili	–	<i>Barleria</i> sp. ^{m,r}	–	<i>Barleria</i> sp.	Acanthaceae	B
MP 695	Mchekacheke	Swahili	–	<i>Parinari</i> sp. ^f	–	<i>Parinari</i> sp.	Chrysobalanaceae	B
CP52	Mcheke	Swahili	<i>Maerua angolensis</i> DC.	–	–	<i>Maerua angolensis</i> DC.	Capparaceae	L
CP120	Mcheke	Swahili	<i>Maerua angolensis</i> DC.	–	–	<i>Maerua angolensis</i> DC.	Capparaceae	L
CP184	Mcheke (mkubwa)	Swahili	<i>Maerua angolensis</i> DC.	–	–	<i>Maerua angolensis</i> DC.	Capparaceae	L
MP 593	Mchofu	Samba/Swahili	<i>Uvaria acuminata</i> Oliv.	<i>Uvaria</i> sp. ^{m,r}	n	<i>Uvaria acuminata</i> Oliv.	Annonaceae	B, L
CP202	Mdaa	–	<i>Euclea divinorum</i> Hiern./ <i>E. frutuosa</i> Hiern./ <i>E. racemosa</i> subsp. <i>schimperii</i> (A.DC.) F.White	<i>Euclea</i> sp. ^{i,r}	n	<i>Euclea</i> sp.	Ebenaceae	B, L
CP314	Mdaa	Swahili	cf. <i>Uvaria</i> sp.; <i>Euclea divinorum</i> Hiern./ <i>E. frutuosa</i> Hiern./ <i>E. racemosa</i> subsp. <i>schimperii</i> (A.DC.) F.White	^r <i>Euclea</i> sp. ^m	F	<i>Euclea</i> sp.	Ebenaceae	B, L, M
MP 422	Mdaa	Swahili	<i>Euclea divinorum</i> Hiern./ <i>E. frutuosa</i> Hiern./ <i>E. racemosa</i> subsp. <i>schimperii</i> (A.DC.) F.White	<i>Annona</i> sp. ^f	F	<i>Euclea</i> sp.	Ebenaceae	B, L
CP211	Mdaa	Swahili	<i>Euclea divinorum</i> Hiern./ <i>E. frutuosa</i> Hiern./ <i>E. racemosa</i> subsp. <i>schimperii</i> (A.DC.) F.White	–	–	<i>Euclea</i> sp.	Ebenaceae	L
CP248	Mdacha/Mtutum	Swahili	cf. <i>Catunaregam</i> sp.	–	–	cf. <i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	AP, M
MP 458	Mdaula	Swahili	<i>Zanha africana</i> (Radlk.) Exell	<i>Albizia</i> ^f <i>anthelmintica</i> ^{i,m}	F	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 452	Mdaula	Swahili	<i>Zanha africana</i> (Radlk.) Exell	–	n	indet.	–	–
MP 378	Mdaula	Swahili	<i>Zanha africana</i> (Radlk.) Exell	<i>Zanha</i> sp. ^f	n	<i>Zanha africana</i> (Radlk.) Exell	Sapindaceae	B, L
MP 749	Mdaula	Swahili	<i>Zanha africana</i> (Radlk.) Exell	<i>Zanha africana</i> ⁱ	n	<i>Zanha africana</i> (Radlk.) Exell	Sapindaceae	B, L
MP 597	Mdaula	Maasai	<i>Zanha africana</i> (Radlk.) Exell	<i>Zanha</i> ^f <i>africana</i> ⁱ	n	<i>Zanha africana</i> (Radlk.) Exell	Sapindaceae	B, L
MP 655	Mdaula	Kwere	<i>Zanha africana</i> (Radlk.) Exell	<i>Zanha</i> ^f <i>africana</i> ⁱ	–	<i>Zanha africana</i> (Radlk.) Exell	Sapindaceae	B, L
MP 565	Mdaula/Olmidaula	Maasai	<i>Zanha africana</i> (Radlk.) Exell	Leguminosae ^f	F	Leguminosae sp.	Leguminosae	B, L

CP118	Mdimpori	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^{m,r}	n	<i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	AP, B, L, M
MP 681	Mdimpori	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^{i,m,r}	n	cf. <i>Suregada lithoxyla</i> (Pax & K.Hoffm.) Croizat	Euphorbiaceae	AP, B, L
CP140	Mdimpori	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^{i,m,r}	n	cf. <i>Suregada lithoxyla</i> (Pax & K.Hoffm.) Croizat	Euphorbiaceae	AP, B, L, M
CP344	Mdimpori	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^f	S	<i>Suregada</i> sp.	Euphorbiaceae	B
CP49	Mdimpori	Swahili	cf. <i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^{m,r}	–	cf. <i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	AP, B, L, M
CP114	Mdimpori	Swahili	cf. <i>Albizia anthemintica</i> Brongn.	–	n	cf. <i>Albizia anthemintica</i> Brongn.	Leguminosae	M
CP165	Mdimpori (Madimula)	Swahili	<i>Suregada zanzibariensis</i> Baill.	–	–	<i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	M
MP 416	Mdimu	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Uvaria lucida</i> ^m	F	<i>Uvaria lucida</i> Bojer ex Benth.	Annonaceae	B, L
MP 385	Mdimupori	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> ^f <i>procera</i> ^m	S	cf. <i>Suregada procera</i> (Prain) Croizat	Euphorbiaceae	AP, B, L
MP 636	Mdimupori (= Mdimu)	Swahili	<i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^f	n	cf. <i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	AP, B, L
MP 666	Mdindadinda	Swahili	–	Rubiaceae ^f	–	Rubiaceae sp.	Rubiaceae	B
MP 588	Mdogonyezi	Samba/Swahili	–	Rutaceae ^f	–	Rutaceae sp.	Rutaceae	B
MP 780	Mduma	Samba	–	Rutaceae ^{m,r}	–	cf. <i>Murraya</i> sp.	Rutaceae	AP, B
CP30	Melemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don	ⁱ <i>Holarrhena pubescens</i> ^{m,r}	F	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L
MP 479	Melemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don	<i>Cassia abbreviata</i> ⁱ	n	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L
MP 450	Melemeta	Swahili	–	–	–	indet.	–	–
MP 626	Mfalaka	Swahili	–	^r <i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
MP 480	Mfalakano	Swahili	–	–	–	indet.	–	–
MP 457	Mfambo	Swahili	–	<i>Abrus</i> sp. ⁱ	–	<i>Abrus</i> sp.	Leguminosae	B
MP 663	Mfambo/Mlazalaza	Swahili	cf. <i>Abrus precatorius</i> L.	<i>Abrus precatorius</i> ^f	n	cf. <i>Abrus precatorius</i> L.	Leguminosae	B
MP 382	Mfuleta	Kwere	<i>Albizia anthelmintica</i> Brongn.	<i>Albizia</i> ^r <i>anthelmintica</i> ^{i,m}	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 586	Mfuleta	Samba/Swahili	<i>Albizia anthelmintica</i> Brongn.	<i>Albizia</i> ^r <i>anthelmintica</i> ^{i,m}	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 531	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	<i>Albizia</i> ^r <i>anthelmintica</i> ^{i,m}	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 343	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	^r <i>Cassia abbreviata</i> ⁱ	G	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 466	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	^{i,r} <i>Stylisma</i> sp. ^m	F	<i>Stylisma</i> sp.	Convolvulaceae	B, L
CP112	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	^r <i>Albizia anthelmintica</i> ^m	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 621	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	<i>Afzelia quanzensis</i> ^m	n	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B, L
CP306	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	<i>Albizia</i> ^r <i>anthelmintica</i> ^m	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
CP213	Mfuleta	Swahili	<i>Albizia anthelmintica</i> Brongn.	Leguminosae ^f	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L, M
CP22	Mfuleta	Swahili	<i>Securidaca longipendiculata</i> Fresen.	–	–	<i>Securidaca longipendiculata</i> Fresen.	Polygalaceae	M
MP 688	Mfunguo	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Tetracera</i> sp. ^f	–	cf. <i>Tetracera boiviniana</i> Baill.	Dilleniaceae	AP, B, L
CP270	Mfunguo	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Acalypha</i> sp. ^r	F	<i>Acalypha</i> sp.	Euphorbiaceae	B, L
CP212	Mfunguo	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Chenopodium</i> ^{i,r} <i>album</i> ^m	S	<i>Chenopodium album</i> L.	Amaranthaceae	B, L
CP225	Mfunguo	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Chenopodium</i> ^r <i>album</i> ^m	S	<i>Chenopodium album</i> L.	Amaranthaceae	B, L
MP 468	Mfunguo	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	–	S	undecided	–	L
CP74	Mfunguo/Muosha fedha	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Chenopodium</i> sp. ^{i,r}	n	<i>Chenopodium</i> sp.	Amaranthaceae	B, L
CP110	Mfunguo/Muosha fedha	Swahili	<i>Crinum papillosum</i> Nordal/ <i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	–	–	<i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	Amaranthaceae	M, L
CP280	Mfyonzofyonzo	Swahili	cf. <i>Trichilia emetica</i> Vahl	–	–	cf. <i>Trichilia emetica</i> Vahl	Meliaceae	M
MP 632	Mgama	Swahili	<i>Cassia abbreviata</i> Oliv.	Apocynaceae ^{i,r}	F	Apocynaceae sp.	Apocynaceae	B, L
CP269	Mghuruka	Kwere	<i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	^{i,r} <i>Catunaregam</i> sp. ^m	F	cf. <i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	AP, B, L
MP 781	Mgimbu	Samba	<i>Ocimum lamifolium</i> Hochst. ex Benth.	Lamiaceae ^f	n	<i>Ocimum lamifolium</i> Hochst. ex Benth.	Lamiaceae	B, L
CP278	Mgimbuu	Samba	<i>Ocimum lamifolium</i> Hochst. ex Benth.	^m <i>Tinnea</i> sp. ^{i,r}	n	cf. <i>Tinnea aethiopica</i> Kotschy ex Hook.f.	Lamiaceae	AP, B, L
MP 758	Mgola	Swahili	<i>Steganoaenia araliacea</i> Hochst.; <i>Flacourtia indica</i> (Burm.f.) Merr.	^r <i>Cassia</i> sp. ^m	F	cf. <i>Cassia</i> sp.	Leguminosae	B, L
CP221	Mgole	Swahili	–	<i>Adenia gummifera</i> ^m	–	<i>Adenia gummifera</i> (Harv.) Harms	Passifloraceae	B
MP 352	Mgomba gomba	Swahili	–	<i>Suregada</i> sp. ^{m,r}	–	<i>Suregada</i> sp.	Euphorbiaceae	B
MP 507	Mgomba gomba	Swahili	–	<i>Ximenia</i> sp. ^r	–	<i>Ximenia</i> sp.	Oleaceae	B
MP 762	Mgosiagona	Swahili	–	^r <i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B

CP316	Mgoto	Swahili	cf. <i>Uvaria</i> sp.	^r <i>Euclea</i> sp. ^m	F	<i>Euclea</i> sp.	Ebenaceae	B, M
CP47	Mgoto	Swahili	<i>Diospyros fischeri</i> Gürke	<i>Diospyros</i> sp. ^f	n	<i>Diospyros fischeri</i> Gürke	Ebenaceae	B, L
CP121	Mgoto	Swahili	<i>Diospyros fischeri</i> Gürke	–	n	<i>Diospyros fischeri</i> Gürke	Ebenaceae	L
CP293	Mgoto	Swahili	<i>Lannea</i> sp.	Anacardiaceae ^{m,r}	–	<i>Lannea</i> sp.	Anacardiaceae	B, M
CP91	Mgude	Swahili	<i>Sterculia appendiculata</i> K. Schum.	–	–	<i>Sterculia appendiculata</i> K. Schum.	Malvaceae	L
MP 501	Mguluka	Swahili	<i>Boscia salicifolia</i> Oliv	Capparaceae ⁱ	n	<i>Boscia salicifolia</i> Oliv	Capparaceae	B, L
MP 799	Mgungufa	Samba	–	<i>Piper</i> ^{i,r} <i>peltatum</i> ^m	–	<i>Piper peltatum</i> L.	Piperaceae	B
MP 542	Mguruka	Swahili	<i>Boscia salicifolia</i> Oliv; <i>Maerua angolensis</i> DC.	ⁱ <i>Zanthoxylum</i> sp. ^m	F	Capparaceae sp.	Capparaceae	B, L
MP 419	Mguruka	Swahili	<i>Boscia salicifolia</i> Oliv; <i>Maerua angolensis</i> DC.	–	–	Capparaceae sp.	Capparaceae	B
MP 390	Mguruka	Kwere	<i>Boscia salicifolia</i> Oliv; <i>Maerua angolensis</i> DC.	<i>Boscia salicifolia</i> ^m	n	<i>Boscia salicifolia</i> Oliv	Capparaceae	B, L
MP 576	Mgwenne	Samba/ Swahili	–	<i>Uvaria</i> sp. ^{i,m,r}	–	<i>Uvaria</i> sp.	Annonaceae	B
MP 417	Mhagata	Swahili	<i>Pterocarpus angolensis</i> DC.	–	–	<i>Pterocarpus angolensis</i> DC.	Leguminosae	L
MP 645	Mhagata	Swahili	<i>Pterocarpus angolensis</i> DC.	<i>Ximenia</i> ^r <i>caffra</i> ⁱ	F	<i>Ximenia caffra</i> Sond.	Oilaceae	B, L
MP 614	Mharake	Swahili	<i>Erianthemum sodenii</i> (Engl.) Balle	Leguminosae ^f	F	<i>Erianthemum sodenii</i> (Engl.) Balle	Acanthaceae	B, L
MP 398	Mhegeja	Swahili	–	–	–	indet.	–	–
CP119	Mheka nyoya	Swahili	–	–	–	Rubiaceae sp.	Rubiaceae	M
CP125	Mhembele zua	Swahili	–	–	–	indet.	–	–
CP310	Mhogola	Swahili	<i>Steganotaenia araliacea</i> Hochst.	<i>Adenia gummifera</i> ^{m,r}	F	<i>Adenia gummifera</i> (Harv.) Harms	Passifloraceae	B, L
CP78	Mhombe	Swahili	cf. <i>Lannea</i> sp.	–	–	cf. <i>Lannea</i> sp.	Anacardiaceae	M
CP174	Mhombe	Swahili	cf. <i>Lannea</i> sp.	–	–	cf. <i>Lannea</i> sp.	Anacardiaceae	M
MP 414	Mhombe	Swahili	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	Anacardiaceae ^f	n	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	Anacardiaceae	L
CP116	Mhombe	Swahili	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	–	–	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	Anacardiaceae	L
CP303	Mhombe	Swahili	<i>Senna</i> sp.	ⁱ <i>Sclerocarya birrea</i> ^{m,r}	–	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, M
CP155	Mhombe	Swahili	<i>Senna surattensis</i> (Burm.f.) H.S.Irwin & Barneby	<i>Senna</i> ^{i,r} <i>singueana</i> ^m	–	<i>Senna surattensis</i> (Burm.f.) H.S.Irwin & Barneby	Leguminosae	B, M
CP284	Mhombe (Mgoma Ki Lango)	Swahili	cf. <i>Lannea</i> sp.	<i>Ozoroa</i> sp.	G	<i>Ozoroa</i> sp.	Anacardiaceae	B, M
CP8	Midimu mpori (midimupori)	Swahili	cf. <i>Suregada zanzibariensis</i> Baill.	<i>Suregada</i> sp. ^f	n	cf. <i>Suregada zanzibariensis</i> Baill.	Euphorbiaceae	B, M
CP146	Mjafari	Swahili	cf. <i>Zanthoxylum usambarense</i> (Engl.) Kokwaro	<i>Zanthoxylum holtzia-num</i> ^m	S	cf. <i>Zanthoxylum usambarense</i> (Engl.) Kokwaro	Rutaceae	B, M
MP 413	Mjafari	Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	<i>Uvaria tanzaniae</i> ^m	F	<i>Uvaria tanzaniae</i> Verdc.	Annonaceae	B, L
MP 583	Mjafari	Samba/ Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	<i>Zanthoxylum</i> sp. ^m	S	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 547	Mjafari	Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	ⁱ <i>Zanthoxylum</i> sp. ^m	S	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 383	Mjafari	Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	<i>Zanthoxylum</i> ^{i,r} <i>holtzia-num</i> ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 460	Mjafari	Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	<i>Zanthoxylum</i> sp. ^{i,r}	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 656	Mjafari	Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	<i>Zanthoxylum</i> ^{i,r} <i>holtzia-num</i> ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
CP324	Mjafari	Swahili	<i>Zanthoxylum</i> sp.	–	n	<i>Zanthoxylum</i> sp.	Rutaceae	M
CP323	Mjafari	Swahili	<i>Zanthoxylum</i> sp.	<i>Zanthoxylum</i> ^r <i>holtzia-num</i> ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, M
CP183	Mjafari	Swahili	<i>Zanthoxylum</i> sp.	<i>Zanthoxylum</i> ^{i,r} <i>holtzia-num</i> ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, M
CP104	Mjafari	Swahili	<i>Zanthoxylum</i> sp.	<i>Zanthoxylum holtzia-num</i> ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, M
CP82	Mjafari	Swahili	<i>Zanthoxylum</i> sp.	<i>Zanthoxylum</i> sp. ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, M
MP 634	Mjafari/ Mlungulungu	Arabic/ Swahili	<i>Zanthoxylum chalybeum</i> Engl.; <i>Z. usambarense</i> (Engl.) Kokwaro	ⁱ <i>Zanthoxylum</i> sp. ^m	n	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 430	Mjambamba	Swahili	–	–	–	indet.	–	–
CP312	Mjata	Swahili	cf. <i>Dombeya rotundifolia</i> (Hochst.) Planch.	<i>Combretum</i> ^{i,r} <i>zeyheri</i> ^m	F	<i>Combretum zeyheri</i> Sond.	Combretaceae	B, M
CP307	Mjata	Swahili	cf. <i>Dombeya rotundifolia</i> (Hochst.) Planch.	<i>Pterocarpus</i> sp. ^{m,r}	F	<i>Pterocarpus</i> sp.	Leguminosae	B, M
CP169	Mjata	Swahili	cf. <i>Salvadora persica</i> L.	Malvaceae ^f	F	Malvaceae sp.	Malvaceae	B, M
CP208	Mjata/Msosoana	Swahili	cf. <i>Dombeya rotundifolia</i> (Hochst.) Planch.	<i>Barringtonia</i> sp. ^f	F	cf. <i>Dombeya rotundifolia</i> (Hochst.) Planch.	Malvaceae	B, M
CP27	Mjata/Msosoana	Swahili	<i>Pterocarpus angolensis</i> DC.	–	–	<i>Pterocarpus angolensis</i> DC.	Leguminosae	L
CP1	Mjavikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	–	–	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.	Rutaceae	L
MP 467	Mjavikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	<i>Ehretia</i> sp. ^{i,r}	F	<i>Ehretia</i> sp.	Boraginaceae	B, L
MP 381	Mjavikali/ Mkomavikali	Swahili/ Kwere	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	Lamiaceae ^f	F	Lamiaceae sp.	Lamiaceae	B, L
CP145	Mjenga ua	Swahili	<i>Rhus cf. dentata</i>	<i>Commiphora</i> sp. ^{i,m,r}	F	<i>Commiphora</i> sp.	Bursaceae	B, M
CP18	Mjenga ua	Swahili	<i>Rhus cf. dentata</i>	–	–	indet.	–	–

CP287	Mjengea ua	Swahili	<i>Rhus cf. dentata</i>	<i>Commiphora</i> sp. ^f	F	<i>Commiphora</i> sp.	Burseraceae	B, M
CP203	Mkadi	Swahili	<i>Pandanus</i> sp.	<i>Pandanus</i> sp. ^f	n	<i>Pandanus</i> sp.	Pandanaceae	B, M
MP 412	Mkala	Swahili	<i>Markhamia obtusifolia</i> (Baker) Sprague	–	–	<i>Markhamia obtusifolia</i> (Baker) Sprague	Bignoniaceae	L
CP159	Mkamba chuma	Swahili	<i>Keetia venosa</i> (Oliv.) Bridson	–	–	<i>Keetia venosa</i> (Oliv.) Bridson	Rubiaceae	L
CP3	Mkambati/ Mkombati	Swahili	<i>Croton</i> sp.	<i>Croton</i> ^{m,r} <i>menyharthii</i> ⁱ	n	<i>Croton menyharthii</i>	Euphorbiaceae	B, M
CP9	Mkambati/ Mkombati	Swahili	<i>Croton</i> sp.	<i>Croton</i> sp. ^f	n	<i>Croton</i> sp.	Euphorbiaceae	B, M
MP 486	Mkandachuma	Swahili	<i>Keetia venosa</i> (Oliv.) Bridson	<i>Elaeodendron</i> sp.	F	<i>Elaeodendron</i> sp.	Celastraceae	B, L
MP 647	Mkandachuma	Swahili	<i>Keetia venosa</i> (Oliv.) Bridson	–	–	<i>Keetia venosa</i> (Oliv.) Bridson	Rubiaceae	L
MP 676	Mkandachuma/ Joga imba	Swahili/-	<i>Keetia venosa</i> (Oliv.) Bridson	Celastraceae ^f	F	Celastraceae sp.	Celastraceae	B, L
MP 379	Mkandachuma/ Mjamof	Swahili/ Kwera	<i>Keetia venosa</i> (Oliv.) Bridson	–	–	<i>Keetia venosa</i> (Oliv.) Bridson	Rubiaceae	L
MP 494	Mkata kesi	Swahili	–	–	–	indet.	–	–
MP 790	Mkatakwa	Samba	<i>Hymenaea verrucosa</i> Gaertn./ <i>Ochna macrocalyx</i> Oliv.	<i>Coriandrium sativum</i> ⁱ	F	indet.	–	–
MP 782	Mkatakwa	Samba	<i>Hymenaea verrucosa</i> Gaertn./ <i>Ochna macrocalyx</i> Oliv.	Leguminosae ^f	n	Leguminosae sp.	Leguminosae	B, L
MP 408	Mkenge	Swahili	<i>Albizia gummifera</i> (J.F.Gmel.) C.A.Sm.	–	–	<i>Albizia gummifera</i> (J.F.Gmel.) C.A.Sm.	Leguminosae	L
MP 678	Mkilika	Swahili	<i>Dombeya</i> sp./ <i>Ehretia</i> sp.	–	–	<i>Dombeya</i> sp.	Boraginaceae	AP, L
MP 619	Mkilika	Swahili	<i>Dombeya</i> sp./ <i>Ehretia</i> sp.	<i>Annona stenophylla</i> ⁱ	F	indet.	–	–
MP 481	Mkilika	Swahili	<i>Dombeya</i> sp./ <i>Ehretia</i> sp.	<i>Ehretia</i> sp. ⁱ	n	<i>Ehretia</i> sp.	Boraginaceae	B, L
CP44	Mkirika	Swahili	<i>Dombeya</i> sp./ <i>Ehretia</i> sp./ <i>Ehretia acuminata</i> R.Br.	–	–	<i>Ehretia</i> sp.	Boraginaceae	AP, L
CP319	Mkirika	Swahili	cf. Boraginaceae sp.	n	–	cf. Boraginaceae sp.	Boraginaceae	M
CP132	Mkirika	Swahili	cf. <i>Cordia myxa</i> L.	–	–	cf. <i>Cordia myxa</i> L.	Boraginaceae	M
CP210	Mkirika	Swahili	cf. <i>Cordia</i> sp./ <i>Ehretia</i> sp.	–	–	Boraginaceae sp.	Boraginaceae	M
MP 779	Mkirika	Samba	<i>Dombeya</i> sp./ <i>Ehretia</i> sp./ <i>E. acuminata</i> R.Br.	Euphorbiaceae ^{e1,m,r}	F	indet.	–	–
CP318	Mkirika	Swahili	<i>Dombeya</i> sp./ <i>Ehretia</i> sp./ <i>E. acuminata</i> R.Br.	–	–	cf. <i>Ehretia</i> sp.	Boraginaceae	AP, L
CP206	Mkodingo	Swahili	Lamiaceae sp.	^{i,r} <i>Rhaphiodon echinus</i> ^m	n	<i>Rhaphiodon echinus</i> (Nees & Mart.) Schauer	Lamiaceae	B, M
MP 748	Mkoko	Swahili	<i>Dombeya</i> sp.	–	–	<i>Dombeya</i> sp.	Malvaceae	L
CP135	Mkole	Swahili	cf. <i>Grewia</i> sp.	–	–	cf. <i>Grewia</i> sp.	Malvaceae	M
CP238	Mkole	Swahili	<i>Grewia</i> sp.	<i>Grewia</i> sp. ^{m,r}	n	<i>Grewia</i> sp.	Malvaceae	B, M
MP 733	Mkole	Swahili	<i>Grewia</i> sp.	<i>Poupartia minor</i> ^j	F	indet.	–	–
CP197	Mkole/Chalika wali	Swahili	cf. <i>Grewia</i> sp.	Lecythidaceae/ <i>Barringtonia</i> ⁱ	F	indet.	–	–
CP154	Mkole/ Mkolembole	Swahili	cf. <i>Grewia</i> sp.	^r <i>Grewia</i> sp. ^m	n	<i>Grewia</i> sp.	Malvaceae	B, M
CP32	Mkoma vikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	–	F	<i>Clausena</i> sp.	Rutaceae	L
MP 650	Mkoma vikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	<i>Allophylus</i> sp. ^f	–	<i>Clausena</i> sp.	Rutaceae	B, L
MP 669	Mkoma vikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	–	–	<i>Clausena</i> sp.	Rutaceae	L
CP83	Mkoma vikali/ Mjavikali	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.; <i>C. abyssinica</i> Engl.	<i>Clausena anisata</i> ^m	n	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.	Rutaceae	B, L
MP 662	Mkomamanga	Swahili	<i>Punica granatum</i> L.	–	–	<i>Punica granatum</i> L.	Lythraceae	L
CP157	Mkombati	Swahili	<i>Croton pseudopulchellus</i> Pax	<i>Croton pseudopulchellus</i> ⁱ	n	<i>Croton pseudopulchellus</i> Pax	Euphorbiaceae	B, M
CP285	Mkomemanga	Swahili	<i>Punica granatum</i> L.	–	n	<i>Punica granatum</i> L.	Lythraceae	L, M
CP237	Mkomemanga	Swahili	<i>Punica granatum</i> L.	<i>Punica granatum</i> ^{m,r}	–	<i>Punica granatum</i> L.	Lythraceae	B, L, M
MP 751	Mkonde	Swahili	<i>Myrianthus holstii</i> Engl.	<i>Allophylus</i> sp. ^{i,m,r}	F	<i>Allophylus</i> sp.	Sapindaceae	B, L
CP311	Mkongo	Swahili	<i>Azelia quanzensis</i> Welw	–	–	<i>Azelia quanzensis</i> Welw	Leguminosae	L
MP 627	Mkongo	Swahili	<i>Azelia quanzensis</i> Welw	–	–	<i>Azelia quanzensis</i> Welw	Leguminosae	L
MP 396	Mkongo (majani)	Swahili	<i>Azelia quanzensis</i> Welw	<i>Uvaria</i> ⁱ <i>tanzaniae</i> ^m	F	undecided	–	B, L
MP 420	Mkongo (mzizi)	Swahili	<i>Azelia quanzensis</i> Welw	^r <i>Azelia quanzensis</i> ^m	n	<i>Azelia quanzensis</i> Welw	Leguminosae	B, L
MP 692	Mkongo/ Mbarikikwa	Swahili/ Guogo	<i>Azelia quanzensis</i> Welw	Leguminosae ^f	n	<i>Azelia quanzensis</i> Welw	Leguminosae	B, L
MP 502	Mkongoe	Swahili	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. tortilis</i> (Forssk.) Galasso & Banfi	<i>Poupartia minor</i> ^j	F	<i>Vachellia</i> sp.	Leguminosae	B, L
CP175	Mkongowe	Swahili	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. tortilis</i> (Forssk.) Galasso & Banfi	–	F	<i>Vachellia</i> sp.	Leguminosae	L
MP 628	Mkongowe	Swahili	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. tortilis</i> (Forssk.) Galasso & Banfi	<i>Suregada</i> sp. ^m	n	<i>Vachellia</i> sp.	Leguminosae	B, L
CP235	Mkongowe	Swahili	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb./ <i>V. tortilis</i> (Forssk.) Galasso & Banfi	<i>Vachellia</i> sp. ^{m,r}	–	<i>Vachellia</i> sp.	Leguminosae	B, L
CP190	Mkula/Mhagata	Swahili	<i>Pterocarpus angolensis</i> DC.	^r <i>Xeroderris stuhlmannii</i> ^{i,m}	G	<i>Xeroderris stuhlmannii</i> (Taub.) Mendonca & Sousa	Leguminosae	B, L
CP139	Mkulagembe	Swahili	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	<i>Vachellia</i> sp. ^f	G	<i>Vachellia</i> sp.	Leguminosae	B, L

MP 754	Mkulungu	Swahili	<i>Pterocarpus tinctorius</i> Welw.	^r <i>Sclerocarya birrea</i> ^m	F	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, L
CP302	Mkumba	Swahili	cf. <i>Maerua</i> sp.	ⁱ <i>Sclerocarya birrea</i> ^{m,r}	F	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, M
MP 403	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	^r <i>Brackenridgea zanguebarica</i> ⁱ	F	<i>Brackenridgea zanguebarica</i> Oliv.	Ochnaceae	B, L
MP 635	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	^r <i>Brackenridgea zanguebarica</i> ⁱ	F	<i>Brackenridgea zanguebarica</i> Oliv.	Ochnaceae	B, L
MP 652	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	^r <i>Brackenridgea zanguebarica</i> ⁱ	F	<i>Brackenridgea zanguebarica</i> Oliv.	Ochnaceae	B, L
MP 453	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	Anacardiaceae ^f	F	undecided	–	B, L
MP 575	Mkumbi	Samba/ Swahili	<i>Hymenaea verrucosa</i> Gaertn.	–	F	<i>Hymenaea verrucosa</i> Gaertn.	Leguminosae	L
CP89	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	–	F	<i>Hymenaea verrucosa</i> Gaertn.	Leguminosae	L
MP 459	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	Ochnaceae ^f	–	undecided	–	B, L
MP 532	Mkumbi	Swahili	<i>Hymenaea verrucosa</i> Gaertn.	Rutaceae ⁱ	–	undecided	–	B, L
MP 388	Mkumbi/ Mkatakwa	Kwere/ Zigua	<i>Hymenaea verrucosa</i> Gaertn.	^r <i>Brackenridgea zanguebarica</i> ⁱ	F	<i>Brackenridgea zanguebarica</i> Oliv.	Ochnaceae	B, L
MP 746	Mkunazi	–	<i>Ziziphus jujuba</i> Mill.	<i>Allophylus</i> sp. ^{i,m,r}	F	<i>Allophylus</i> sp.	Sapindaceae	B
MP 336	Mkunazi	Swahili	<i>Ziziphus jujuba</i> Mill.	<i>Uvaria</i> sp. ^r	F	undecided	–	B, L
CP138	Mkundekunde	Swahili	–	<i>Senna</i> sp. ^{m,r}	F	<i>Senna</i> sp.	Leguminosae	B
MP 456	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	^r <i>Cassia</i> ^m <i>abbreviata</i> ⁱ	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 657	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	^r <i>Cassia</i> ^m <i>abbreviata</i> ⁱ	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 535	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	^r <i>Cassia</i> ^m <i>abbreviata</i> ⁱ	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
CP188	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	<i>Cassia abbreviata</i> ⁱ	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 375	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	Anacardiaceae ^{f,m}	n	Anacardiaceae sp.	Anacardiaceae	B, L
CP113	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	^r <i>Cassia</i> sp. ^m	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 620	Mkundekunde	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	–	–	<i>Cassia abbreviata</i> Oliv.	Leguminosae	L
CP148	Mkundekunde	Swahili	cf. <i>Cassia afrofistula</i> Brenan	<i>Senna</i> sp. ^r / <i>Cassia</i> sp. ^m	n	cf. <i>Cassia afrofistula</i> Brenan	Leguminosae	B, M
CP163	Mkundekunde	Swahili	cf. <i>Senna occidentalis</i> (L.) Link	–	–	cf. <i>Senna occidentalis</i> (L.) Link	Leguminosae	M
CP81.2	Mkundekunde/ Mzangazi	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	^r <i>Cassia</i> sp. ^m	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
CP36	Mkundekunde/ Mzangazi	Swahili	<i>Cassia abbreviata</i> Oliv./ <i>Senna petersiana</i> (Bolle) Lock	–	–	<i>Cassia abbreviata</i> Oliv.	Leguminosae	L
MP 755	Mkunga nilwa	–	–	<i>Boscia salicifolia</i> ^m	–	<i>Boscia salicifolia</i> Oliv.	Capparaceae	B
MP 323	Mkunga nilwa	Swahili	–	–	–	indet.	–	–
MP 365	Mkunga nilwa	Nyamwezi	–	–	–	indet.	–	–
MP 350	Mkungu	Swahili	<i>Albizia lebbek</i> (L.) Benth./ <i>Terminalia catappa</i> L.	Leguminosae ^f	n	Leguminosae sp.	Leguminosae	B, L
MP 591	Mkungu kula	Samba/ Swahili	–	<i>Ximenia caffra</i> ^{i,r}	–	<i>Ximenia caffra</i> Sond.	Oleaceae	B
MP 776	Mkunguni	Samba	<i>Combretum fragrans</i> F.Hoffm.	–	–	<i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
MP 316	Mkungwa nilwa	Kwere	–	^r <i>Albizia anthelmintica</i> ^m	–	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B
CP167	Mkunju	Swahili	<i>Citropsis dawean</i> Swingle & M.Kellerm.	–	F	<i>Citropsis dawean</i> Swingle & M.Kellerm.	Rutaceae	M
CP255	Mkunju	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	^r <i>Harrisonia abyssinica</i> ⁱ	n	<i>Harrisonia abyssinica</i> Oliv.	Rutaceae	B, L
CP173	Mkunju	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	–	–	undecided	–	–
MP 674	Mkunju	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	Rutaceae ^f	n	Rutaceae sp.	Rutaceae	B, L
CP214	Mkunju	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	Rutaceae ^{i,r}	n	Rutaceae sp.	Rutaceae	B, L
CP87	Mkunju	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	<i>Salvadora</i> ⁱ <i>persica</i> ^m	F	<i>Salvadora persica</i> L.	Salvadoraceae	B, L
CP267	Mkunju/Mkusu	Swahili	<i>Ficus sycomorus</i> L./ <i>Citropsis dawean</i> Swingle & M.Kellerm./ <i>Harrisonia abyssinica</i> Oliv.	<i>Maprounea</i> sp. ^r	F	undecided	–	B, L
MP 464	Mkunya	Swahili	<i>Harrisonia abyssinica</i> Oliv.	<i>Abrus</i> sp. ⁱ	F	undecided	–	B, L
MP 332	Mkurungu	Swahili	<i>Croton macrostachyus</i> Hochst. ex Delile	–	–	<i>Croton macrostachyus</i> Hochst. ex Delile	Euphorbiaceae	L
MP 364	Mkurungu	Nyamwezi	<i>Croton macrostachyus</i> Hochst. ex Delile	–	–	<i>Croton macrostachyus</i> Hochst. ex Delile	Euphorbiaceae	L
MP 503	Mkusanya	Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
MP 595	Mkusu	Samba/ Swahili	<i>Harrisonia abyssinica</i> Oliv.	–	–	<i>Harrisonia abyssinica</i> Oliv.	Rutaceae	L
MP 672	Mkuyati	Swahili	–	–	–	indet.	–	–

MP 689	Mkuyu	Swahili	<i>Ficus sycomorus</i> L.	–	–	<i>Ficus sycomorus</i> L.	Moraceae	L
CP17	Mkuyu	Swahili	<i>Ficus sycomorus</i> L.	–	–	<i>Ficus sycomorus</i> L.	Moraceae	L, M
CP51	Mkuyu	Swahili	<i>Ficus sycomorus</i> L.	–	–	<i>Ficus sycomorus</i> L.	Moraceae	L, M
MP 389	Mkwaju	Swahili	<i>Tamarindus indica</i> L.	–	–	<i>Tamarindus indica</i> L.	Leguminosae	–
CP332	Mkwalu/Mkwaru	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don	indet	y	undecided	–	–
MP 428	Mkwalukwalu	Swahili	–	<i>Uvaria tanzaniae</i> ^{mm}	–	<i>Uvaria tanzaniae</i> Verdc.	Annonaceae	B
CP336	Mkwamba	Samba/Swahili	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	<i>Grewia</i> sp. ^{m,f}	F	<i>Grewia</i> sp.	Malvaceae	B, L
MP 791	Mkwamba	Samba	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	<i>Flueggea</i> ^f <i>virosa</i> ^{mm}	n	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Euphorbiaceae	B, L
MP 592	Mkwamba	Samba/Swahili	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	<i>Flueggea</i> sp. ^f	n	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Euphorbiaceae	B, L
CP340	Mkwambala	Samba/Swahili	–	–	–	indet.	–	–
CP176	Mkwambe/Mzizimia	Samba/Swahili	<i>Phyllanthus reticulatus</i> Poir.	–	n	<i>Phyllanthus reticulatus</i> Poir.	Phyllanthaceae	B, L
CP43	Mkwanba	Swahili	<i>Indigofera arrecta</i> A.Rich./ <i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	–	–	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Euphorbiaceae	L
MP 804	Mkwanga	Samba	<i>Tamarindus indica</i> L.	indet	y	<i>Tamarindus indica</i> L.	Leguminosae	B, L
CP298	Mkwayu	–	<i>Tamarindus indica</i> L./ <i>Pithecellobium dulce</i> (Roxb.) Benth.	<i>Albizia</i> ^f <i>anthelmintica</i> ^{l,m}	G	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 454	Mkweda	Swahili	–	<i>Brackenridgea zanguebarica</i> ^l	–	<i>Brackenridgea zanguebarica</i> Oliv.	Ochnaceae	B
MP 434	Mkwelu	Swahili	–	–	–	indet.	–	–
MP 421	Mkwesi	Swahili	–	–	–	indet.	–	–
MP 425	Mkwesi	Swahili	–	–	–	indet.	–	–
CP153	Mlama	Swahili	cf. <i>Combretum</i> sp.	<i>Combretum hereroense</i> ^{l,m}	F	<i>Combretum hereroense</i> Schinz	Combretaceae	B, M
CP317	Mlama	Swahili	<i>Combretum fragrans</i> F.Hoffm.	<i>Combretum</i> ^f <i>molle</i> ^{mm}	S	<i>Combretum molle</i> R.Br. ex G.Don	Combretaceae	B, L
MP 545	Mlama	Swahili	<i>Combretum fragrans</i> F.Hoffm.	–	n	<i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
CP19	Mlama	Swahili	<i>Combretum fragrans</i> F.Hoffm.	–	–	<i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
CP115	Mlama	Swahili	<i>Combretum fragrans</i> F.Hoffm.	–	–	<i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
CP53	Mlama	Swahili	–	Achariaceae ^{m,f}	–	Achariaceae sp.	Achariaceae	B
MP 732	Mlama mweupe	Swahili	cf. <i>Combretum fragrans</i> F.Hoffm.	–	–	cf. <i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
MP 731	Mlama mweusi	Swahili	cf. <i>Combretum fragrans</i> F.Hoffm.	–	–	cf. <i>Combretum fragrans</i> F.Hoffm.	Combretaceae	L
CP105	Mlangamia	Swahili	<i>Cassytha filiformis</i> L.	<i>Cassytha filiformis</i> ^{m,f}	n	<i>Cassytha filiformis</i> L.	Lauraceae	B, L, M
MP 664	Mlangamia	Swahili	<i>Cassytha filiformis</i> L.	–	–	<i>Cassytha filiformis</i> L.	Lauraceae	L
CP46	Mlangamia	Swahili	cf. <i>Cassytha filiformis</i> L./cf. <i>Cuscuta</i> sp.	–	–	<i>Cassytha filiformis</i> L.	Lauraceae	L, M
CP345	Mlangamia	?	cf. <i>Cassytha filiformis</i> L./cf. <i>Cuscuta</i> sp.	–	–	<i>Cassytha filiformis</i> L.	Lauraceae	L, M
MP 341	Mlawa	Swahili	<i>Croton polytrichus</i> Pax	<i>Croton</i> ^f <i>polytrichus</i> ^l	n	<i>Croton polytrichus</i> Pax	Euphorbiaceae	B, L
MP 499	Mlawilila	Swahili	–	<i>Vachellia nilotica</i> ^m	–	<i>Vachellia nilotica</i>	Leguminosae	B
MP 441	Mliliwa	Swahili	–	<i>Combretum</i> sp. ^f	–	<i>Combretum</i> sp.	Combretaceae	B
MP 737	Mlimbolimbo	Swahili	–	<i>Ximenia caffra</i> ^m	–	<i>Ximenia caffra</i>	Olacaceae	B
MP 538	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Anacardiaceae ^{l,f}	F	<i>Anacardiaceae</i> sp.	Anacardiaceae	B, L
CP199	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae ^{l,m,f}	n	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	B, L
MP 394	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L
MP 475	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L
MP 622	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L
CP54	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L, M
CP127	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L
MP 654	Mlipu	Swahili	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	–	–	<i>Bonamia mossambicensis</i> (Klotzsch) Hallier f.	Convolvulaceae	L
MP 747	Mlonge	Swahili	<i>Moringa olifera</i> Lam./ <i>Catha edulis</i> (Vahl) Endl.	–	n	undecided	–	L
MP 683	Mlonge	Swahili	<i>Moringa olifera</i> Lam./ <i>Catha edulis</i> (Vahl) Endl.	<i>Moringa oleifera</i> ^{m,f}	n	<i>Moringa olifera</i> Lam.	Moringaceae	B, L
CP342	Mlonge	Swahili	<i>Moringa olifera</i> Lam./ <i>Catha edulis</i> (Vahl) Endl.	<i>Moringa</i> ^m <i>oleifera</i> ^f	–	<i>Moringa olifera</i> Lam.	Moringaceae	B, L
MP 491	Mmavimavi	Swahili	<i>Galiniera saxifraga</i> (Hochst.) Bridson	<i>Paederia</i> sp. ^f	G	<i>Rubiaceae</i> sp.	Rubiaceae	B, L
MP 644	Mmelemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don/ <i>Allophylus rubifolius</i> (Hochst. ex A.Rich.) Engl.	<i>Allophylus</i> sp. ^{l,m,f}	n	<i>Allophylus</i> sp.	Sapindaceae	B, L
MP 691	Mmelemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don/ <i>Allophylus rubifolius</i> (Hochst. ex A.Rich.) Engl.	^l <i>Holarrhena pubescens</i> ^f	n	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L

CP282	Mmelemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don/ <i>Allophylus rubifolius</i> (Hochst. ex A.Rich.) Engl.	<i>Holarrhena</i> ⁱ <i>pubescens</i> ^{m,r}	n	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L
CP219	Mmelemele	Swahili	<i>Holarrhena pubescens</i> Wall. ex G.Don/ <i>Allophylus rubifolius</i> (Hochst. ex A.Rich.) Engl.	<i>Holarrhena pubescens</i> ^m	n	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L
CP45	Mmoyomoyo	Swahili	<i>Blighia unijugata</i> Baker/ <i>Deinbollia borbonica</i> Scheff.	<i>Deinbollia</i> sp. ^{1,r}	F	<i>Deinbollia</i> sp.	Sapindaceae	B, L
MP 495	Mmoyomoyo	Swahili	<i>Blighia unijugata</i> Baker/ <i>Deinbollia borbonica</i> Scheff.	<i>Thespesia danis</i> ^m	n	<i>Thespesia danis</i> Oliv.	Malvaceae	B, L
CP124	Mmoyomoyo	Swahili	<i>Blighia unijugata</i> Baker/ <i>Deinbollia borbonica</i> Scheff./Rubiaceae	–	–	undecided	–	L
CP189	Mmoyomoyo	Swahili	<i>Blighia unijugata</i> Baker/ <i>Deinbollia borbonica</i> Scheff./Rubiaceae	–	–	undecided	–	L
CP194	Mmoze	–	–	–	–	indet.	–	–
CP295	Mmumbu	Swahili	–	<i>Antidesma</i> sp. ^r	F	<i>Antidesma</i> sp.	Phyllanthaceae	B
CP42	Mmumbu	Swahili	cf. <i>Lannea</i> sp.	–	–	cf. <i>Lannea</i> sp.	Anacardiaceae	L, M
CP296	Mmumbu	Swahili	–	<i>Sclerocarya birrea</i> ^m	G	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, L
CP117	Mmumbu	Swahili	<i>Lannea welwitschii</i> (Hiern) Engl.	–	–	<i>Lannea welwitschii</i> (Hiern) Engl.	Anacardiaceae	B, L
MP 623	Mnamata	Swahili	<i>Desmodium gangeticum</i> (L.) DC.	<i>Allophylus</i> sp. ^{i,m,r}	F	undecided	–	–
MP 679	Mnamata	Swahili	<i>Desmodium gangeticum</i> (L.) DC.	<i>Desmodium</i> ^r <i>gangeticum</i> ⁱ	n	<i>Desmodium gangeticum</i> (L.) DC.	Leguminosae	B, L
CP76	Mnamata	Swahili	<i>Pupalia</i> cf. <i>lappacea</i>	–	–	<i>Pupalia</i> cf. <i>lappacea</i>	Amaranthaceae	M
MP 463	Mnamate	Swahili	<i>Desmodium gangeticum</i> (L.) DC.	–	–	<i>Desmodium gangeticum</i> (L.) DC.	Leguminosae	L
MP 509	Mnanaa	Swahili	–	<i>Annona</i> sp. ^r	–	<i>Annona</i> sp.	Annonaceae	B
CP271	Mnazi	Swahili	<i>Cocos nucifera</i> L.	Anacardiaceae ^r	F	undecided	–	B, L
CP99	Mnazi pori	Swahili	<i>Cocos nucifera</i> L.	–	–	<i>Cocos nucifera</i> L.	Arecaceae	M
MP 796	Mnenge	Samba	–	<i>Uvaria</i> sp. ^r	–	<i>Uvaria</i> sp.	Annonaceae	–
CP69	Mng'ongo	Swahili	cf. <i>Rhus</i> sp.	<i>Sclerocarya birrea</i> ^m	G	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, L, M
CP233	Mng'ongo	Swahili	cf. <i>Sclerocarya</i> sp.	–	G	cf. <i>Sclerocarya</i> sp.	Anacardiaceae	–
CP129	Mng'ongo	Swahili	<i>Lannea</i> sp.	–	–	<i>Lannea</i> sp.	Anacardiaceae	M
CP275	Mng'ongo	Swahili	<i>Lannea</i> sp.	<i>Sclerocarya birrea</i> ^{m,r}	–	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, L, M
MP 376	Mng'ongo	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst./ <i>Searsia natalensis</i> (Bernh. ex C.Krauss) F.A.Barkley	–	–	undecided	–	L
CP13	Mng'ongo	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst./ <i>Searsia natalensis</i> (Bernh. ex C.Krauss) F.A.Barkley	–	–	undecided	–	L
CP149	Mng'ongo	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst./ <i>Searsia natalensis</i> (Bernh. ex C.Krauss) F.A.Barkley	–	–	undecided	–	L
CP192	Mng'ongo	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst./ <i>Searsia natalensis</i> (Bernh. ex C.Krauss) F.A.Barkley	–	–	undecided	–	L
MP 510	Mninga	Swahili	<i>Pterocarpus bussei</i> Harms	–	–	<i>Pterocarpus bussei</i> Harms	Leguminosae	L
CP261	Mnyonyo/ Mbalika	Swahili	<i>Ricinus communis</i> L./ <i>Jatropha</i> sp.	<i>Ricinus communis</i> ^{1,r}	n	<i>Ricinus communis</i> L.	Euphorbiaceae	B, L
CP240	Mpaja	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez	Canellaceae ^r	F	undecided	–	B, L
MP 646	Mpaja	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez	<i>Warburgia</i> sp. ^{i,m}	F	<i>Warburgia</i> sp.	Canellaceae	B, L
MP 541	Mpaja	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez	<i>Warburgia</i> ^r <i>stuhlmanni</i> ⁱ	F	<i>Warburgia stuhlmanni</i> Engl.	Canellaceae	B, L
MP 496	Mpaja/Msaka uchawe	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	<i>Warburgia salutaris</i> ^r	F	<i>Warburgia salutaris</i> (G.Bertol.) Chiov.	Canellaceae	B, L
CP195	Mpaja/Msaka uchawi/ Olsokonoi	Swahili/ Maasai	<i>Rapanea melanophloeos</i> (L.) Mez	–	–	<i>Rapanea melanophloeos</i> (L.) Mez	Myrsinaceae	L
MP 384	Mpaja/Sokonoi	Kwere/ Maasai	<i>Rapanea melanophloeos</i> (L.) Mez	–	–	<i>Rapanea melanophloeos</i> (L.) Mez	Myrsinaceae	L
MP 411	Mpapa	Swahili	<i>Markhamia obtusifolia</i> (Baker) Sprague	indet	F	undecided	–	B, L
MP 429	Mpapate	Swahili	–	–	–	indet.	–	–
MP 372	Mpatatiko	Swahili	–	<i>Afzelia quanzenis</i> ^m	–	<i>Afzelia quanzenis</i>	Leguminosae	B
MP 472	Mpatatiko	Swahili	–	<i>Afzelia quanzenis</i> ^m	–	<i>Afzelia quanzenis</i>	Leguminosae	B
MP 616	Mpatatiko	Swahili	–	<i>Afzelia quanzenis</i> ^m	–	<i>Afzelia quanzenis</i>	Leguminosae	B
MP 680	Mpatatiko	Swahili	–	Meliaceae ^r	–	Meliaceae sp.	Meliaceae	B
MP 443	Mpelu	Swahili	–	<i>Uvaria</i> sp. ^{m,r}	–	<i>Uvaria</i> sp.	Annonaceae	B
CP81	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	Anacardiaceae ^r	F	undecided	–	–
MP 637	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	–	F	undecided	–	–
MP 671	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	–	F	undecided	–	–
CP266	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	<i>Parinari</i> sp. ^r	–	<i>Parinari</i> sp.	Chrysobalanaceae	AP, B
CP161	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	<i>Ximenia caffra</i> ^r	–	<i>Ximenia caffra</i>	Olacaceae	B, L

CP204	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	<i>Ximenia caffra</i> ^f	–	<i>Ximenia caffra</i>	Oleaceae	B, L
MP 537	Mpingi	Swahili	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	<i>Poupartia minor</i> ⁱ	–	undecided	–	B, L
MP 387	Mpingi/ Muhingwe/ Mtundwi	Swahili/ Kwere/ Zigua	<i>Balanites aegyptiaca</i> (L.) Delile/ <i>Ximenia americana</i> L.	<i>Sclerocarya birrea</i> ^f	F	undecided	–	B, L
CP160	Mpingo	Swahili	<i>Dalbergia melanoxylon</i> Guill. & Perr.	<i>Dalbergia</i> ^f <i>frutescens</i> ^m	S	<i>Dalbergia frutescens</i>	Leguminosae	B, L
MP 492	Mpingo	Swahili	<i>Dalbergia melanoxylon</i> Guill. & Perr.	–	–	<i>Dalbergia melanoxylon</i> Guill.	Leguminosae	L
MP 766	Mpingo	Swahili	<i>Dalbergia melanoxylon</i> Guill. & Perr.	–	–	<i>Dalbergia melanoxylon</i> Guill.	Leguminosae	L
CP29	Mpingo	Swahili	<i>Dalbergia melanoxylon</i> Guill. & Perr.	–	–	<i>Dalbergia melanoxylon</i> Guill.	Leguminosae	L
CP256	Mpingo	Swahili	<i>Dalbergia melanoxylon</i> Guill. & Perr.	–	–	<i>Dalbergia melanoxylon</i> Guill.	Leguminosae	L
CP257	Mrehani	Swahili	–	^r <i>Ocimum gratissimum</i> ^{i,m}	n	<i>Ocimum gratissimum</i> L.	Lamiaceae	B
MP 793	Samba	–	–	<i>Erythrina</i> ^f <i>scalexii</i> ⁱ	–	<i>Erythrina scalexii</i>	Leguminosae	B
CP283	Msaada	Swahili	<i>Vangueria infausta</i> Burch.	<i>Crossopteryx febrifuga</i> ^{m,r}	G	<i>Crossopteryx febrifuga</i> (G. Don) Benth	Rubiaceae	B, L
CP38	Msaada	Swahili	<i>Vangueria infausta</i> Burch.	–	–	<i>Vangueria infausta</i> Burch.	Rubiaceae	L
CP187	Msaada/Mvilo	Swahili	<i>Vangueria infausta</i> Burch.	^r <i>Vangueria infausta</i> ⁱ	n	<i>Vangueria infausta</i> Burch.	Rubiaceae	B, L
MP 514	Msada	Swahili	cf. Anacardiaceae	–	F	cf. Anacardiaceae sp.	Anacardiaceae	L
MP 448	Msada	Swahili	cf. Anacardiaceae	<i>Uvaria</i> sp. ^{m,r}	–	<i>Uvaria</i> sp.	Annonaceae	B, L
MP 633	Msagati	Swahili	<i>Acalypha fruticosa</i> Forssk.	Leguminosae ^f	F	undecided	–	B, L
MP 651	Msaka	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	<i>Allophylus</i> sp. ⁱ	F	undecided	–	B, L
CP367	Msaka banji	Swahili	–	–	–	indet.	–	–
MP 440	Msaka uchawi	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	^{m,r} Convolvulaceae/ <i>Stylisma</i> sp. ⁱ	F	Convolvulaceae sp.	Convolvulaceae	B, L
MP 348	Msaka uchawi	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	–	–	undecided	–	L
CP304	Msaka uchawi	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	–	–	undecided	–	L
CP134	Msaka uchawi	Swahili	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	–	–	undecided	–	L
MP 667	Msaka uchawi/ Mpaja	Swahili/ Samba; Kwere	<i>Rapanea melanophloeos</i> (L.) Mez/ <i>Warburgia ugandensis</i> Sprague	<i>Warburgia</i> ^m <i>stuhlmannii</i> ^t	n	<i>Warburgia stuhlmannii</i> Engl.	Canellaceae	B, L
MP 353	Msalaminga	Zaramu	–	<i>Ocimum</i> sp. ^f	–	<i>Ocimum</i> sp.	Lamiaceae	B
MP 617	Msalas	Swahili	<i>Friesodielsia obovata</i> (Benth.) Verde.	^m <i>Rhodoglyphon schumanianum</i> ⁱ	F	<i>Rhodoglyphon schumanianum</i> A.Robyns unresolved	Malvaceae	B, L
MP 438	Msangala	Swahili	<i>Burkea africana</i> Hook.	<i>Ximenia caffra</i> ⁱ	F	undecided	–	–
MP 786	Msangasi	Samba	<i>Cassia afrofistula</i> Brenan var. <i>afrofistula</i> / <i>C. abbreviata</i> Oliv subsp <i>beareana</i> (Holmes) Brenan	Leguminosae ^f	G	cf. <i>Cassia</i> sp.	Leguminosae	B, L
MP 788	Msangasi	Samba	<i>Cassia afrofistula</i> Brenan var. <i>afrofistula</i> / <i>C. abbreviata</i> Oliv subsp <i>beareana</i> (Holmes) Brenan	<i>Senna</i> sp. ^f	n	Leguminosae sp.	Leguminosae	B, L
CP162	Msangosango	–	–	<i>Maerua kirkii</i> ^m	–	<i>Maerua kirkii</i> F. White	Capparaceae	B
MP 787	Msasambeghe	Samba	<i>Crossopteryx febrifuga</i> (G. Don) Benth	^r <i>Crossopteryx febrifuga</i> ^m	n	<i>Crossopteryx febrifuga</i> (G. Don) Benth	Rubiaceae	B, L
MP 579	Msasambeghe	Samba/ Swahili	<i>Crossopteryx febrifuga</i> (G. Don) Benth	^m <i>Syzygium</i> sp. ^f	F	undecided	–	–
MP 797	Msegese	Samba	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	<i>Morella</i> sp. ⁱ	n	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	Myricaceae	B, L
MP 690	Msegese	–	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	–	–	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	Myricaceae	L
MP 802	Msegese	Samba	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	^r <i>Cassia</i> sp. ^m	F	undecided	–	–
CP281	Msekela	Swahili	–	–	–	indet.	–	–
CP326	Msembeni	Swahili	cf. <i>Maerua</i> sp.	<i>Gardenia</i> ^m <i>latifolia</i> ^f	F	undecided	–	–
MP 736	Msemelele	Swahili	–	<i>Ehretia</i> sp. ^{m,r}	–	<i>Ehretia</i> sp.	Boraginaceae	B
MP 511	Mshalifu	Swahili	<i>Asparagus acicularis</i> F.T.Wang & S.C.Chen	–	–	<i>Asparagus acicularis</i> F.T.Wang & S.C.Chen	Asparagaceae	L
MP 553	Mshegeshe	Samba/ Swahili	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	indet	y	undecided	–	–
MP 581	Mshegeshe	Samba/ Swahili	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	–	–	<i>Morella salicifolia</i> A. Rich. subsp. <i>kilimandscharica</i> Eng.	Myricaceae	L
MP 517	Mshenene	Swahili	<i>Xylopi odoratissima</i> Welw. ex Oliv.	indet	y	undecided	–	B, L
CP40	Mshenene/ Mulawilila	Swahili	<i>Xylopi odoratissima</i> Welw. ex Oliv.	Rubiaceae ^f	F	undecided	–	B, L
CP301	Msiga nyika	Swahili	cf. <i>Salvadora persica</i> L.	<i>Adansonia digitata</i> ^{i,f}	F	<i>Adansonia digitata</i> L.	Malvaceae	B, L
MP 338	Msiga nyika	Swahili	<i>Salvadora persica</i> L.	–	–	<i>Salvadora persica</i> L.	Salvadoraceae	L
CP156	Msiga nyika/ Mswaki	Swahili	cf. <i>Salvadora persica</i> L.	<i>Salvadora</i> ^{i,f} <i>persica</i> ^m	n	<i>Salvadora persica</i> L.	Salvadoraceae	B, L, M
CP96	Msiga nyika/ Mswaki	–	cf. <i>Salvadora persica</i> L.	–	–	cf. <i>Salvadora persica</i> L.	Salvadoraceae	L, M

CP41	Msihi	Swahili	<i>Securidaca longipedunculata</i> Fresen.	<i>Allium</i> sp. ^f	F	undecided	–	B, L
CP80	Msihi	Swahili	<i>Securidaca longipedunculata</i> Fresen.	–	F	<i>Securidaca longipedunculata</i> Fresen.	Polygalaceae	B, L
CP171	Msihi	Swahili	<i>Securidaca longipedunculata</i> Fresen.	<i>Securidaca</i> sp. ⁱ	F	<i>Securidaca longipedunculata</i> Fresen.	Polygalaceae	B, L
MP 485	Msihi	Swahili	<i>Synaptolepis alternifolia</i> Oliv.	^r <i>Afzelia quanzensis</i> ^m	n	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B, L
MP 536	Msihi	Swahili	<i>Synaptolepis alternifolia</i> Oliv.	<i>Afzelia quanzensis</i> ^m	n	undecided	–	B, L
MP 638	Msihi	Swahili	<i>Synaptolepis alternifolia</i> Oliv.	–	–	<i>Synaptolepis alternifolia</i> Oliv.	Thymelaeaceae	L
CP179	Msisimisi	Swahili	<i>Albizia harveyi</i> E.Fourn.	–	–	<i>Albizia harveyi</i> E.Fourn.	Leguminosae	L
CP103	Msofu	Swahili	cf. <i>Vangueria infausta</i> Burch.	<i>Kraussia kirkii</i> ^m	G	Rubiaceae sp.	Rubiaceae	B, L
MP 478	Msofu	Swahili	<i>Uvaria acrantha</i> Miq./U. <i>catocarpa</i> Diels/U. <i>kirkii</i> Oliv. ex Hook. f./U. <i>leptocladon</i> Oliv. (unresolved)/ <i>Uvariadendron kirkii</i> Verdc.	–	S	Annonaceae sp.	Annonaceae	L
MP 543	Msofu	Swahili	<i>Uvaria acrantha</i> Miq./U. <i>catocarpa</i> Diels/U. <i>kirkii</i> Oliv. ex Hook. f./U. <i>leptocladon</i> Oliv. (unresolved)/ <i>Uvariadendron kirkii</i> Verdc.	–	S	Annonaceae sp.	Annonaceae	L
MP 659	Msofu	Swahili	<i>Uvaria acrantha</i> Miq./U. <i>catocarpa</i> Diels/U. <i>kirkii</i> Oliv. ex Hook. f./U. <i>leptocladon</i> Oliv. (unresolved)/ <i>Uvariadendron kirkii</i> Verdc.	<i>Uvaria tanzaniae</i> ^m	S	<i>Uvaria tanzaniae</i>	Annonaceae	B, L
MP 738	Msofu	Swahili	<i>Uvaria acrantha</i> Miq./U. <i>catocarpa</i> Diels/U. <i>kirkii</i> Oliv. ex Hook. f./U. <i>leptocladon</i> Oliv. (unresolved)/ <i>Uvariadendron kirkii</i> Verdc.	<i>Uvaria</i> ^f <i>tanzaniae</i> ^m	n	<i>Uvaria tanzaniae</i> Verdc.	Annonaceae	B, L
CP147	Msofu	Swahili	<i>Uvaria</i> cf. <i>lucida</i> Bojer ex Benth.	<i>Uvaria</i> sp. ^m	n	<i>Uvaria</i> cf. <i>lucida</i> Bojer ex Benth.	Annonaceae	B, M
CP48	Msofu	Swahili	<i>Uvaria sofa</i> G.F. Scott-Elliot	–	n	<i>Uvaria sofa</i> G.F. Scott-Elliot	Annonaceae	L, M
CP128	Msofu	Swahili	<i>Uvaria sofa</i> G.F. Scott-Elliot	–	n	<i>Uvaria sofa</i> G.F. Scott-Elliot	Annonaceae	L, M
CP7	Msofu	Swahili	<i>Uvaria sofa</i> G.F. Scott-Elliot	<i>Uvaria</i> sp. ^f	–	<i>Uvaria sofa</i> G.F. Scott-Elliot	Annonaceae	L, M
CP71	Msofu	Swahili	<i>Uvaria sofa</i> G.F. Scott-Elliot	<i>Uvaria</i> ^f <i>tanzaniae</i> ^m	–	<i>Uvaria</i> sp.	Annonaceae	B, L, M
CP39	Msofu	Swahili	<i>Uvaria</i> sp.	<i>Uvaria</i> sp.	–	<i>Uvaria</i> sp.	Annonaceae	B, L, M
CP172	Msofu	Swahili	<i>Uvaria</i> sp.	<i>Uvaria</i> sp. ^f	–	<i>Uvaria</i> sp.	Annonaceae	B, L, M
CP106	Msofu	Swahili	<i>Uvaria</i> sp.	–	–	<i>Uvaria</i> sp.	Annonaceae	L, M
MP 368	Msofu/Msharifu Arab	Swahili/Arab	<i>Uvaria acrantha</i> Miq./U. <i>catocarpa</i> Diels/U. <i>kirkii</i> Oliv. ex Hook. f./U. <i>leptocladon</i> Oliv. (unresolved)/ <i>Uvariadendron kirkii</i> Verdc.	<i>Uvaria</i> sp. ^f	n	<i>Uvaria</i> sp.	Annonaceae	B, L, M
CP181	Msolo	–	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon/Burseraceae sp.	–	–	undecided	–	L
CP330	Msuhi	Swahili	–	^r <i>Grewia</i> sp. ^{i,m}	–	<i>Grewia</i> sp.	Malvaceae	B, M
MP 342	Msuhi pori	Swahili	<i>Bombax rhodognaphalon</i> K. Schum.	Leguminosae ^f	F	undecided	–	B, L
MP 642	Msuhi pori	Swahili	<i>Bombax rhodognaphalon</i> K. Schum.	Malvaceae ^f	n	<i>Bombax rhodognaphalon</i> K. Schum.	Malvaceae	B, L
MP 386	Msuhi pori/Mwale	Swahili/Kwere	<i>Bombax rhodognaphalon</i> K. Schum.	–	–	<i>Bombax rhodognaphalon</i> K. Schum.	Malvaceae	L
CP308	Msuhi/Msuhi pori	Swahili	cf. <i>Senna</i> sp.	Anacardiaceae ^{i,m,r}	F	undecided	–	B, L
CP90	Msuhi pori	Swahili/Kwere	–	–	–	indet.	–	–
MP 631	Msusula	Swahili	<i>Hyphaene petersiana</i> Klotzsch ex Mart.	^r <i>Afzelia quanzensis</i> ^m	F	undecided	–	B, L
MP 772	Mswagambuzi	–	–	<i>Allophylus</i> sp. ^{i,m,r}	–	<i>Allophylus</i> sp.	Sapindaceae	B
MP 640	Mtalawanda	Swahili	<i>Markhamia zanzibarica</i> (Bojer ex DC.) K.Schum./ <i>Clerodendrum hildebrandtii</i> Vatke	Leguminosae ^f	F	undecided	–	B, L
CP232	Mtama	Swahili	<i>Sorghum bicolor</i> (L.) Moench.	<i>Imperata cylindrica</i> ^f	G	undecided	–	B, L
CP98	Mtama	Swahili	<i>Sorghum bicolor</i> (L.) Moench.	–	–	<i>Sorghum bicolor</i> (L.) Moench.	Poaceae	L
CP250	Mtama/Mwekundu	Swahili	<i>Sorghum bicolor</i> (L.) Moench.	Poaceae ^f	n	<i>Sorghum bicolor</i> (L.) Moench.	Poaceae	B, L
CP84	Mtamba	Swahili	<i>Cissus integrifolia</i> (Baker) Planch.	–	–	<i>Cissus integrifolia</i> (Baker) Planch.	Vitaceae	L
CP177	Mtamba	Swahili	<i>Cissus integrifolia</i> (Baker) Planch.	–	–	<i>Cissus integrifolia</i> (Baker) Planch.	Vitaceae	L
CP320	Mtamba	Swahili	cf. <i>Rhoicissus</i> sp./ <i>Cissus integrifolia</i> (Baker) Planch.	<i>Vitis</i> sp.	–	<i>Vitaceae</i> sp.	Vitaceae	B, M
CP259.1	Mtende	Swahili	cf. <i>Phoenix reclinata</i> Jacq.	ⁱ <i>Phoenix dactylifera</i> ^{m,r}	n	<i>Phoenix dactylifera</i> L.	Arecaceae	B, M
CP259.2	Mtende	Swahili	cf. <i>Phoenix reclinata</i> Jacq.	<i>Phoenix dactylifera</i> ^{m,r}	n	<i>Phoenix dactylifera</i> L.	Arecaceae	B, M
MP 402	Mteyu	Swahili	–	–	–	indet.	–	–
MP 673	Mti mkuu	Swahili	–	–	G	indet.	–	–
CP292	Mti mkuu	Swahili	<i>Senna</i> cf. <i>afrofitula</i>	<i>Cassia</i> ^m <i>abbreviata</i> ⁱ	–	Leguminosae sp.	Leguminosae	B, M
MP 513	Mtimtim	Swahili	–	–	–	indet.	–	–
MP 775	Mtindi	Samba	<i>Cussonia zimmermannii</i> Harms	^r <i>Bridelia</i> sp. ^m	F	undecided	–	B, L
MP 401	Mtinginya	Swahili	–	<i>Afzelia</i> sp. ⁱ	–	<i>Afzelia</i> sp.	Leguminosae	B
MP 337	Mtogo	Swahili	<i>Dombeya rotundifolia</i> (Hochst.) Planch.	<i>Diplorhynchus condylocarpon</i> ⁱ	F	undecided	–	B, L
MP 741	Mtogo	Swahili	<i>Dombeya rotundifolia</i> (Hochst.) Planch.	–	–	<i>Dombeya rotundifolia</i> (Hochst.) Planch.	Malvaceae	L

MP 675	Mtogo	Swahili	<i>Dombeya rotundifolia</i> (Hochst.) Planch.	<i>Senna</i> sp. ^f	F	undecided	–	B, L
CP207	Mtonga	Swahili	cf. <i>Strychnos spinosa</i> Lam.	<i>Strychnos</i> sp. ^m	n	cf. <i>Strychnos spinosa</i> Lam.	Loganiaceae	B, L
CP136	Mtonga	Swahili	<i>Strychnos</i> sp.	–	n	<i>Strychnos</i> sp.	Loganiaceae	AP, L
CP229	Mtonga	Swahili	<i>Strychnos</i> sp.	<i>Strychnos</i> ^{m,r} <i>spinosa</i> ⁱ	n	<i>Strychnos spinosa</i> Lam.	Loganiaceae	AP, B, L
CP180	Mtonga	Swahili	<i>Strychnos</i> sp.	<i>Strychnos</i> ^{m,r} <i>innocua</i> ⁱ	–	<i>Strychnos innocua</i> Delile	Loganiaceae	B, M, L
MP 682	Mtonga	Swahili	<i>Strychnos spinosa</i> Lam.	–	–	<i>Strychnos spinosa</i> Lam.	Loganiaceae	L, M
CP31	Mtonge	Swahili	<i>Strychnos</i> sp.	–	–	<i>Strychnos</i> sp.	Loganiaceae	M
CP300	Mtopetope	Swahili	cf. <i>Annona acuminata</i> Saff.	^r <i>Albizia anthelmintica</i> ^m	F	undecided	–	B, M
CP170	Mtopetope	Swahili	cf. <i>Annona acuminata</i> Saff.	<i>Annona</i> sp. ^{m,r}	n	cf. <i>Annona acuminata</i> Saff.	Annonaceae	B, M
CP79	Mtopetope	Swahili	cf. <i>Annona acuminata</i> Saff.	<i>Annona</i> sp. ^r	n	cf. <i>Annona acuminata</i> Saff.	Annonaceae	B, M
CP268	Mtopetope	Swahili	cf. <i>Annona acuminata</i> Saff.	<i>Annona</i> sp. ^r	n	cf. <i>Annona acuminata</i> Saff.	Annonaceae	B, M
MP 380	Mtopetope	Swahili	<i>Annona acuminata</i> Saff./ <i>A. cherimola</i> Mill./ <i>A. senegalensis</i> Pers./ <i>A. squamosa</i> L.	–	–	<i>Annona</i> sp.	Annonaceae	L
MP 539	Mtopetope	Swahili	<i>Annona acuminata</i> Saff./ <i>A. cherimola</i> Mill./ <i>A. senegalensis</i> Pers./ <i>A. squamosa</i> L.	–	–	<i>Annona</i> sp.	Annonaceae	L
MP 462	Mtopetope	Swahili	<i>Annona acuminata</i> Saff./ <i>A. cherimola</i> Mill./ <i>A. senegalensis</i> Pers./ <i>A. squamosa</i> L.	–	–	<i>Annona</i> sp.	Annonaceae	L
CP21	Mtopetope pori	Swahili	cf. <i>Annona acuminata</i> Saff.	–	–	cf. <i>Annona acuminata</i> Saff.	Annonaceae	M
MP 648	Mtopetope pori	Swahili	–	–	–	indet.	–	–
MP 447	Mtula	Swahili	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	^m <i>Combretum</i> sp. ^r	F	<i>Combretum</i> sp.	Combretaceae	B, L
MP 551	Mtundwi	Samba/ Swahili	<i>Balanites aegyptiaca</i> (L.) Delile./ <i>Ximenia americana</i> L./ <i>X. caffra</i> Sond.	<i>Lannea</i> sp. ^f	F	undecided	–	–
CP236	Mtundwi/Mpingi	–	<i>Balanites aegyptiaca</i> (L.) Delile./ <i>Ximenia americana</i> L./ <i>X. caffra</i> Sond.	<i>Ximenia caffra</i> ^{m,r}	n	<i>Ximenia caffra</i> Sond.	Olcaceae	B, L
MP 785	Mtundwi/Itundwi	Samba	<i>Balanites aegyptiaca</i> (L.) Delile./ <i>Ximenia americana</i> L./ <i>X. caffra</i> Sond.	<i>Ximenia caffra</i> ⁱ	n	<i>Ximenia caffra</i> Sond.	Olcaceae	B, L
CP26	Mtundwi/Mpingi	–	<i>Balanites aegyptiaca</i> (L.) Delile./ <i>Ximenia americana</i> L./ <i>X. caffra</i> Sond.	–	–	<i>Ximenia caffra</i> Sond.	Olcaceae	L
CP158	Mtutuma	Swahili	cf. <i>Catunaregam taylorii</i> (S.Moore) Bridson	<i>Ximenia caffra</i> ⁱ	F	undecided	–	–
CP234	Mtutuma	Swahili	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	<i>Catunaregam</i> sp. ^{m,r}	n	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	B, M, L
CP88	Mtutuma	Swahili	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	–	–	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	L
CP182	Mtutuma	Swahili	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	–	–	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	L
MP 505	Mtutuma	Swahili	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	–	–	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	L
CP24	Mtutuma/Mdashi	Swahili	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	–	–	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Rubiaceae	L
CP247	Mtwitwi	Swahili	<i>Commiphora africana</i> (A.Rich.) Endl.	–	–	<i>Commiphora africana</i> (A.Rich.) Endl.	Burseraceae	M, L
MP 506	Muadabisha	Swahili	–	–	–	indet.	–	–
MP 397	Muhagaga	Swahili	<i>Spirostachys africana</i> Sond.	^r <i>Afzelia</i> sp. ⁱ	F	<i>Afzelia</i> sp.	Leguminosae	B, L
CP309	Muhagaga	Swahili	<i>Pterocarpus angolensis</i> DC.	<i>Ocimum gratissimum</i> ⁱ	F	<i>Ocimum gratissimum</i> L.	Lamiaceae	B, L
MP 431	Muhangara	Swahili	–	–	–	indet.	–	–
MP 345	Muharaka	Swahili	<i>Spirostachys africana</i> Sond.	–	–	<i>Spirostachys africana</i> Sond.	Euphorbiaceae	L
MP 426	Muharaka	Swahili	<i>Spirostachys africana</i> Sond.	–	–	<i>Spirostachys africana</i> Sond.	Euphorbiaceae	L
MP 658	Muharaka	Swahili	<i>Spirostachys africana</i> Sond.	–	–	<i>Spirostachys africana</i> Sond.	Euphorbiaceae	L
CP35	Muharaka	Swahili	<i>Spirostachys africana</i> Sond.	–	–	<i>Spirostachys africana</i> Sond.	Euphorbiaceae	L
MP 477	Muharaka/ Mualakisha	Swahili	<i>Spirostachys africana</i> Sond.	ⁱ <i>Spirostachys</i> sp. ^r	n	<i>Spirostachys africana</i> Sond.	Euphorbiaceae	B, L
CP331	Muhogo	Swahili	–	–	–	Burseraceae sp.	Burseraceae	M
MP 735	Muhombe	Swahili	<i>Ozoroa insignis</i> Delile	^r <i>Sclerocarya birrea</i> ^m	G	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, L
MP 540	Muhombe	Swahili	<i>Ozoroa insignis</i> Delile	indet	y	undecided	–	B, L
MP 451	Muhongilo	Swahili	–	<i>Uvaria</i> sp. ^m	–	undecided	–	B, L
MP 580	Muhoza	Samba/ Swahili	–	–	–	indet.	–	–
MP 589	Muhumba	Samba/ Swahili	<i>Erythrococca kirkii</i> (Müll.Arg.) Prain	<i>Senna singueana</i> ^m	F	undecided	–	B, L
MP 649	Muhungilo	Swahili	–	<i>Sclerocarya birrea</i> ^f	–	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B
MP 436	Muhungungu	Swahili	–	^r <i>Afzelia quanzenis</i> ^m	–	<i>Afzelia quanzenis</i>	Leguminosae	B
CP73	Mumbu	Samba	cf. <i>Lannea</i> sp.	<i>Lannea</i> sp. ^r	n	<i>Lannea</i> sp.	Anacardiaceae	B, M
CP143	Mumbu	Swahili	<i>Hoslundia opposita</i> Vahl.	ⁱ <i>Lannea</i> sp. ^r	F	undecided	–	L, M
CP86	Mumbu	Samba	cf. <i>Lannea</i> sp.	–	–	cf. <i>Lannea</i> sp.	Anacardiaceae	M
MP 800	Mumbu	Samba	<i>Lannea welwitschii</i> (Hiern) Engl.	–	–	<i>Lannea welwitschii</i> (Hiern) Engl.	Anacardiaceae	L
CP168	Mumbu (Mhungiro)	Samba	<i>Lannea schweinfurthii</i> (Engl.) Engl.	–	–	<i>Lannea schweinfurthii</i> (Engl.) Engl.	Anacardiaceae	M

CP191	Mumbu/mhun- giro	Samba	cf. <i>Lannea</i> sp.	–	–	cf. <i>Lannea</i> sp.	Anacardiaceae	M
MP 757	Mumoze	–	–	<i>Allophylus</i> sp. ^{m,r}	–	<i>Allophylus</i> sp.	Sapindaceae	B
MP 518	Muoro	Swahili	–	–	–	indet.	–	–
MP 473	Muosha fedha	Swahili	–	<i>Ehretia</i> sp. ^{i,r}	–	<i>Ehretia</i> sp.	Boraginaceae	B
MP 685	Muosha fedha	–	–	–	–	indet.	–	–
MP 410	Muosha fedha	Swahili	<i>Chenopodium opulifolium</i> Schrad. ex W.D.J.Koch & Ziz	<i>Uvaria</i> sp. ^f	F	undecided	–	B, L
MP 308	Muosha ngoko	Swahili	–	Anacardiaceae ^f	–	Anacardiaceae sp.	Anacardiaceae	B
MP 625	Muosha nyota	Swahili	–	<i>Allophylus</i> sp. ^f	–	<i>Allophylus</i> sp.	Sapindaceae	B
MP 444	Musheke	Swahili	–	<i>Ozoroa</i> sp. ⁱ	–	<i>Ozoroa</i> sp.	Anacardiaceae	B
CP357	Mustaka	–	–	–	–	indet.	–	–
MP 377	Muyeye	Kwere	–	^r <i>Albizia</i> sp. ⁱ	–	<i>Albizia</i> sp.	Leguminosae	B
MP 313	Mvinye bahari	Swahili	–	–	–	indet.	–	–
CP222	Mvuje	Swahili	<i>Clausena anisata</i> (Willd.) Hook.f. ex Benth.	<i>Murraya koenigii</i> ^{l,m}	G	<i>Murraya koenigii</i>	Rutaceae	B, L
CP246	Mvulavula	Swahili	<i>Hoslundia opposita</i> Vahl.	–	–	<i>Hoslundia opposita</i> Vahl.	Lamiaceae	L
CP299	Mvule	–	<i>Milicia excelsa</i> (Welw.) C.C.Berg	<i>Pterocarpus</i> sp. ^{m,r}	F	<i>Pterocarpus</i> sp.	Leguminosae	B, L
MP 516	Mvule	Swahili	<i>Milicia excelsa</i> (Welw.) C.C.Berg	–	–	<i>Milicia excelsa</i> (Welw.) C.C.Berg	Moraceae	L
MP 761	Mvule	–	<i>Milicia excelsa</i> (Welw.) C.C.Berg	<i>Zanthoxylum</i> sp. ^{m,r}	F	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
CP289	Mvule/Mwifu	–	<i>Milicia excelsa</i> (Welw.) C.C.Berg	Rubiaceae ^{m,r}	F	undecided	–	B, L
CP333	Mvulu	–	<i>Milicia excelsa</i> (Welw.) C.C.Berg	<i>Flacourtia</i> sp. ^{m,r}	F	<i>Flacourtia</i> sp.	Salicaceae	B, L
CP249	Mvulwe	–	<i>Acalypha ornata</i> Hochst. ex A.Rich.	<i>Acalypha</i> sp. ^{i,r}	n	<i>Acalypha ornata</i> Hochst. ex A.Rich.	Euphorbiaceae	B, L
CP327	Mvulwe	–	<i>Acalypha ornata</i> Hochst. ex A.Rich.	indet	F	<i>Acalypha ornata</i> Hochst. ex A.Rich.	Euphorbiaceae	B, L
CP50	Mvuma myuki	Swahili	–	–	–	indet.	–	–
CP185	Mvuma nyuki	–	<i>Lawsonia inermis</i> L./ <i>Agathisanthemum bojeri</i> Klotzsch/ <i>Solanum</i> sp.	–	–	undecided	–	L, M
CP126	Mvuma nyuki	–	–	–	–	<i>Solanaceae</i> sp.	Solanaceae	M
CP72	Mvuma nyuki/ Mtulavuha	Swahili	<i>Gymnosporia putterlickioides</i> Loes.	ⁱ <i>Premna</i> sp. ^m	F	<i>Premna</i> sp.	Lamiaceae	B, L
MP 777	Mvumba	Samba	<i>Cassia</i> cf. <i>r. singueana</i> Del.	<i>Securidaca</i> sp. ^f	F	undecided	–	B, L
CP343	Mvumo	–	<i>Borassus aethiopicum</i> Mart.	–	–	<i>Borassus aethiopicum</i> Mart.	Arecaceae	M
CP337	Mvumo	–	<i>Ficus abelii</i> Miq.	–	–	<i>Ficus abelii</i> Miq.	Moraceae	L
MP 474	Mvumo	Swahili	<i>Ficus abelii</i> Miq.	–	–	<i>Ficus abelii</i> Miq.	Moraceae	L
MP 624	Mvumo	Swahili	<i>Ficus abelii</i> Miq.	<i>Rhodognaphalon schu-</i> <i>mannianum</i>	y	undecided	–	B, L
MP 484	Mvunia hukumu	Swahili	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	<i>Ehretia</i> sp. ^{i,r}	F	<i>Ehretia</i> sp.	Boraginaceae	B, L
MP 370	Mvunja hukumu	Swahili	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	<i>Ehretia</i> sp. ^{i,r}	F	<i>Ehretia</i> sp.	Boraginaceae	B, L
CP201	Mvunja hukumu	–	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	Rubiaceae ^{m,r}	F	Rubiaceae sp.	Rubiaceae	B, L
CP123	Mvunja hukumu	–	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	–	–	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	Anacardiaceae	L
MP 449	Mvunja ukumu	Swahili	<i>Ozoroa mucronata</i> (Bernh.) R. Fern. & A. Fern.	ⁱ <i>Holarrhena pubescens</i> ^f	F	<i>Holarrhena pubescens</i> Wall. ex G.Don	Apocynaceae	B, L
MP 400	Mvuta	Swahili	–	–	–	<i>Lamiaceae</i> sp.	Lamiaceae	M
CP75	Mvuti	–	<i>Myrothamnus flabellifolia</i> Welw.	<i>Myrothamnus flabellifolia</i> ^f	n	<i>Myrothamnus flabellifolia</i> Welw.	Myrothamnaceae	B, L
MP 694	Mvuto	Swahili	–	–	–	indet.	–	–
MP 395	Mvuto	Swahili	–	<i>Uvaria</i> sp. ^f	–	<i>Uvaria</i> sp.	Annonaceae	B
MP 476	Mvuto	Swahili	–	<i>Afzelia</i> sp. ^m	–	<i>Afzelia</i> sp.	Leguminosae	B
MP 315	Mvuye	Swahili	–	<i>Bonamia</i> sp. ^f	–	<i>Bonamia</i> sp.	Convolvulaceae	B
MP 515	Mwagata	Swahili	–	–	–	indet.	–	–
CP193	Mwale	Swahili	<i>Bombax rhodognaphalon</i> K. Schum.	<i>Rhodognaphalon schu-</i> <i>mannianum</i> ⁱ	G	Malvaceae sp.	Malvaceae	B, L
CP11	Mwale/Msufi pori	Swahili	<i>Afzelia quanzensis</i> Welw	–	–	<i>Afzelia quanzensis</i> Welw	Leguminosae	L
CP329	Mwamba	Swahili	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	<i>Grewia</i> sp. ^{i,m}	F	<i>Grewia</i> sp.	Malvaceae	B, L
MP 759	Mwambarasha	Swahili	–	<i>Boscia salicifolia</i> ^m	–	<i>Boscia salicifolia</i> Oliv.	Capparaceae	B
CP6	Mwangamia/ Mlangamia	Swahili	cf. <i>Cassytha filiformis</i> L./cf. <i>Cuscuta</i> sp.	<i>Cassytha</i> sp. ^f	n	cf. <i>Cassytha filiformis</i> L.	Lauraceae	B, M
MP 498	Mwavi (au Kiapa)	Swahili	cf. <i>Cassia</i> sp.	Anacardiaceae ^{m,r}	F	Anacardiaceae sp.	Anacardiaceae	B, L
CP196	Mwavi (Kiapo)	Swahili	<i>Erythrophleum suaveolens</i> (Guill. & Perr.) Brenan	–	–	<i>Erythrophleum suaveolens</i> (Guill. & Perr.) Brenan	Leguminosae	M
MP 687	Mwegea	Swahili	<i>Kigelia africana</i> (Lam.) Benth.	<i>Moringa oleifera</i> ^f	F	undecided	–	B, L
CP14	Mwegea	Swahili	<i>Kigelia africana</i> (Lam.) Benth.	–	–	<i>Kigelia africana</i> (Lam.) Benth.	Bignoniaceae	L
CP16	Mwegea	Swahili	<i>Kigelia africana</i> (Lam.) Benth.	–	–	<i>Kigelia africana</i> (Lam.) Benth.	Bignoniaceae	L
CP34	Mwegele	Swahili	<i>Cissus trifoliata</i> (L.) L.	–	–	<i>Cissus trifoliata</i> (L.) L.	Vitaceae	L
MP 753	Mwehungu	Swahili	–	^r <i>Afzelia quanzensis</i> ^m	–	<i>Afzelia quanzensis</i> Welw.	Leguminosae	B
CP276	Mwekei	Swahili	–	Meliaceae ^f	–	Meliaceae sp.	Meliaceae	B
MP 641	Mwembe pori	Swahili	–	–	–	indet.	–	–
CP23	Mwembe pori	Swahili	–	–	–	indet.	–	–
CP338	Mwenda	Swahili	<i>Deinbollia borbonica</i> Scheff.	<i>Ehretia</i> sp. ^f	F	undecided	–	B, L

CP220	Mwengele	Swahili	cf. Cucurbitaceae	^m <i>Cyphostemma</i> sp. ⁱ	F	<i>Cyphostemma</i> sp.	Vitaceae	B, M
CP152	Mwengele	Swahili	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	<i>Cyphostemma</i> ^f <i>adenocaulae</i> ⁱ	n	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	Vitaceae	B, M
CP131	Mwengele	Swahili	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	–	n	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	Vitaceae	M
CP321	Mwengele	Swahili	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	^m <i>Cyphostemma</i> sp. ^f	–	<i>Cyphostemma adenocaulae</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	Vitaceae	B, M
MP 488	Mwifu	Swahili	<i>Warburgia elongata</i> Verdc.	–	–	<i>Warburgia elongata</i> Verdc.	Canellaceae	L
MP 590	Mwifu	Samba/ Swahili	<i>Warburgia elongata</i> Verdc.	Rubiaceae ^f	F	undecided	–	B, L
MP 803	Mwifu	Samba	<i>Warburgia elongata</i> Verdc.	Rubiaceae ^f	F	undecided	–	B, L
MP 750	Mwifu	Swahili	<i>Warburgia elongata</i> Verdc.	^r <i>Nauclea officinalis</i> ^m	F	undecided	–	B, L
CP328	Mwifu	Samba	<i>Warburgia elongata</i> Verdc.	<i>Senegalia</i> ^m <i>laeta</i> ^f	F	<i>Senegalia laeta</i> (R.Br. ex Benth.) Seigler & Ebinger unresolved	Leguminosae	B, L
MP 546	Mwifu	Swahili	<i>Warburgia elongata</i> Verdc.	<i>Zanthoxylum</i> sp. ^{m,r}	–	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 465	Mwinama	Swahili	–	–	–	indet.	–	–
MP 769	Mwinamo	Swahili	–	<i>Allophylus</i> sp. ^{i,m,r}	–	<i>Allophylus</i> sp.	Sapindaceae	B
MP 322	Mwinamo	Swahili	–	Anacardiaceae ⁱ	–	Anacardiaceae sp.	Anacardiaceae	B
CP178	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	<i>Zanthoxylum</i> ^{i,f} <i>holtzia-num</i> ^m	F	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
CP85	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	Anacardiaceae ^m	F	undecided	–	B, L
CP166	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	–	F	<i>Senna occidentalis</i> (L.) Link	Leguminosae	L
CP334	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	<i>Strychnos</i> sp. ^{m,r}	F	<i>Strychnos</i> sp.	Loganiaceae	B, L
CP290	Mwingajini	Swahili	–	^r <i>Volkameria</i> sp. ^m	F	<i>Volkameria</i> sp.	Lamiaceae	B
CP141	Mwingajini	Swahili	Rubiaceae sp.	<i>Volkameria</i> sp. ^m	F	undecided	–	B, M
MP 544	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	<i>Brackenridgea zanguebarica</i> ⁱ	F	undecided	–	B, L
MP 740	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	Leguminosae ^f	n	<i>Senna occidentalis</i> (L.) Link	Leguminosae	B, L
MP 668	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	^r <i>Vepris</i> sp. ^{i,m}	–	<i>Vepris</i> sp.	Rutaceae	B, L
MP 470	Mwingajini	Swahili	<i>Senna occidentalis</i> (L.) Link	<i>Zanthoxylum</i> sp. ^{i,m,r}	–	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
CP262	Mwinika ngulu	Swahili	cf. <i>Asparagus falcatus</i> L.	Lamiaceae ^{m,r}	F	Lamiaceae sp.	Lamiaceae	B, M
MP 789	Mwinu	Samba	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	<i>Senna</i> ^{i,f} <i>didymobotrya</i> ^m	F	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	Leguminosae	B, L
MP 550	Mwinu	Samba/ Swahili	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	<i>Senna didymobotrya</i> ^m	n	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	Leguminosae	B, L
MP 582	Mwinu/Muinu	Samba/ Swahili	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	<i>Senna</i> sp. ^{i,m,r}	n	<i>Senna didymobotrya</i> (Fresen.) H.S. Irwin & Bameby	Leguminosae	B, L
CP335	Mwinula	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	<i>Vachellia tortillis</i> ^f	F	undecided	–	B, L
MP 639	Mwinula	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	indet	F	undecided	–	B, L
MP 490	Mwinula	Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	<i>Linzia</i> ⁱ <i>melleri</i> ^m	y	<i>Linzia melleri</i> (Oliv. & Hiern) H.Rob.	Compositae	B, L
MP 391	Mwinula/kivumbasi	Kwere/ Swahili	<i>Ocimum americanum</i> L./ <i>O. basilicum</i> L./ <i>O. gratissimum</i> L.	–	–	<i>Ocimum</i> sp.	Lamiaceae	L
MP 392	Mwita	Swahili	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	Thymelaceae ^f	F	undecided	–	B, L
MP 393	Mwita	Swahili	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	Thymelaceae ^f	F	undecided	–	B, L
MP 661	Mwita	Swahili	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	Thymelaceae ^f	F	undecided	–	B, L
CP315	Mwita	Swahili	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	–	F	<i>Vachellia xanthophloea</i> (Benth.) P.J.H. Hurter	Leguminosae	L
CP273	Mwita	Swahili	<i>Uvaria</i> sp.	Thymelaceae ^f	–	undecided	–	B, L
CP305	Mzambarani	Swahili	cf. <i>Lannea</i> sp.	<i>Sclerocarya birrea</i> ^{m,r}	G	<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Anacardiaceae	B, M
MP 584	Mzanzazi	Samba/ Swahili	–	Leguminosae ^f	–	Leguminosae sp.	Leguminosae	B
MP 409	Mzima	Swahili	<i>Terminalia brownii</i> Fres; <i>T. kaiseriana</i> F. Hoffm.; <i>T. sericea</i> Burch. ex DC	^r <i>Afzelia</i> sp. ⁱ	F	<i>Afzelia</i> sp.	Leguminosae	B, L
MP 399	Mzima	Swahili	<i>Terminalia brownii</i> Fres; <i>T. kaiseriana</i> F. Hoffm.; <i>T. sericea</i> Burch. ex DC	<i>Annona</i> sp. ^f	F	undecided	–	B, L
CP313	Mzima	Swahili	<i>Terminalia brownii</i> Fres; <i>T. kaiseriana</i> F. Hoffm.; <i>T. sericea</i> Burch. ex DC	<i>Ehretia</i> sp. ^f	F	undecided	–	B, L
MP 351	Mzizi wa mlonge	Swahili	<i>Catha edulis</i> (Vahl) Endl./ <i>Moringa oleifera</i> Lam.	–	F	undecided	–	L
MP 469	Mzizima	Swahili	<i>Phyllanthus reticulatus</i> Poir.	–	–	<i>Phyllanthus reticulatus</i> Poir.	Euphorbiaceae	L
MP 767	Mzizima	Swahili	<i>Phyllanthus reticulatus</i> Poir.	–	–	<i>Phyllanthus reticulatus</i> Poir.	Euphorbiaceae	L
CP322	Mzizima	Swahili	<i>Tabernaemontana elegans</i> Stapf	–	–	<i>Tabernaemontana elegans</i> Stapf	Apocynaceae	L

MP 768	Mzizimia	Swahili	<i>Uvaria acuminata</i> Oliv./ <i>U. leptocladon</i> Oliv. (unresolved)	<i>Elaeodendron</i> sp. ⁱ	F	undecided	–	B, L
MP 677	Mzizimia	Swahili	<i>Uvaria acuminata</i> Oliv./ <i>U. leptocladon</i> Oliv. (unresolved)	–	–	<i>Uvaria</i> sp.	Annonaceae	L
MP 497	Mzoeya	Swahili	–	–	–	indet.	–	–
CP286	Mzoka zoka	Swahili	<i>Vanilla</i> sp.	<i>Vanilla</i> sp. ^r	n	<i>Vanilla</i> sp.	Orchidaceae	B, M
CP272	Mzoka zoka (Mjoe)	Swahili	<i>Vanilla</i> sp.	<i>Vanilla</i> ^{m,r} <i>roscheri</i> ⁱ	n	<i>Vanilla roscheri</i>	Orchidaceae	B, M
CP277	Mzombanya	Swahili	–	Meliaceae ^f	–	Meliaceae sp.	Meliaceae	B
MP 574	Mzugwa	Samba/Swahili	<i>Plectranthus barbatus</i> Andrews	–	–	<i>Plectranthus barbatus</i> Andrews	Lamiaceae	L
CP4	Mzukizuki	Zaramo	<i>Carpolobia goetzei</i> Gürke	–	–	<i>Carpolobia goetzei</i> Gürke	Polygalaceae	L
MP 778	Mzunbaghoze	Samba	<i>Helichrysum schimperii</i> (Sch. Bip. ex A. Rich) Moeser	<i>Cissampelos</i> sp. ^{m,r}	F	<i>Cissampelos</i> sp.	Menispermaceae	B, L
MP 794	Mzutwe	Samba	–	–	–	Flacourtiaceae sp.	Flacourtiaceae	L
CP209	Mzutwe	Samba	<i>Dodonaea viscosa</i> (L.) Jacq.	<i>Ochna</i> sp. ^r	F	undecided	–	B, L
MP 577	Mzutwi	Samba/Swahili	–	–	–	indet.	–	–
MP 585	Ndelengwe	Samba/Swahili	<i>Harrisonia abyssinica</i> Oliv.	–	–	<i>Harrisonia abyssinica</i> Oliv.	Rutaceae	L
MP 792	Ndenge	Samba	<i>Warburgia elongata</i> Verdc.	<i>Flueggea</i> ^r <i>virosa</i> ^{i,m}	F	<i>Flueggea virosa</i>	Euphorbiaceae	B, L
CP107	Ndula/Ndulele	Hehe	<i>Solanum</i> cf. <i>incanum</i> L.	–	–	<i>Solanum</i> cf. <i>incanum</i> L.	Solanaceae	M
MP 556	Nepirankashi	Maasai	–	<i>Crossopteryx febrifuga</i> ^{ga} ^{i,m}	–	<i>Crossopteryx febrifuga</i> (G. Don) Benth	Rubiaceae	B
MP 571	Neshekuye	Maasai	<i>Tabernaemontana elegans</i> Stapf	Phyllanthaceae ^r	F	undecided	–	B, L
MP 602	Neshekuye	Maasai	<i>Tabernaemontana elegans</i> Stapf	Phyllanthaceae ^m	F	undecided	–	B, L
MP 558	Ngitaru	Maasai	–	<i>Zanthoxylum</i> sp. ^{m,r}	–	<i>Zanthoxylum</i> sp.	Rutaceae	B
MP 729	Ngoponi	Maasai	<i>Abrus precatorius</i> L.	<i>Abrus</i> ^r <i>precatorius</i> ^m	n	<i>Abrus precatorius</i> L.	Leguminosae	B, L
CP100	Ngulukila	–	–	–	–	indet.	–	–
MP 326	Nguvu za kiume	Swahili	–	<i>Albizia</i> ^r <i>anthelmintica</i> ^m	–	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B
MP 630	Nyahinga	Nyamwezi/Swahili	–	Convolvulaceae ^{i,r}	–	Convolvulaceae sp.	Convolvulaceae	B
MP 763	Nyambu	–	<i>Hugonia arborescens</i> Mildbr. (unresolved)	Celastraceae ^{m,r}	F	Celastraceae sp.	Celastraceae	B, L
CP111	Nyambu/pangaa ya arthi	–	<i>Pelargonium sidoides</i> DC./ <i>Hugonia arborescens</i> Mildbr. (unresolved)	–	–	undecided	–	L
MP 489.1	Nyonyo	Swahili	<i>Ricinus communis</i> L.	<i>Ricinus communis</i> ^m	n	<i>Ricinus communis</i> L.	Euphorbiaceae	B, M
MP 489.2	Nyonyo	Swahili	<i>Ricinus communis</i> L.	<i>Ricinus communis</i> ^m	n	<i>Ricinus communis</i> L.	Euphorbiaceae	B, M
MP 560	Olangoliroi	Maasai	–	<i>Strychnos</i> sp. ^{i,m}	–	<i>Strychnos</i> sp.	Loganiaceae	B
MP 564	Olapulases	Maasai	–	<i>Strychnos</i> sp. ⁱ	–	<i>Strychnos</i> sp.	Loganiaceae	B
MP 605	Olchani	Maasai	–	<i>Zanthoxylum</i> sp. ^{m,r}	–	<i>Zanthoxylum</i> sp.	Rutaceae	B
MP 561	Oldemwai	Maasai	<i>Commiphora swynnertonii</i> Burt	–	–	<i>Commiphora swynnertonii</i> Burt	Burseraceae	L
MP 745	Olangala	Samba	–	<i>Afzelia quanzenis</i> ^m	–	<i>Afzelia quanzenis</i> Welw.	Leguminosae	B
MP 608	Olmukutan	Maasai	<i>Albizia anthelmintica</i> Brongn	<i>Albizia</i> ^r <i>anthelmintica</i> ^m	n	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	B, L
MP 568	Olmukutan	Maasai	<i>Albizia anthelmintica</i> Brongn	–	–	<i>Albizia anthelmintica</i> Brongn.	Leguminosae	L
MP 555	Oloisuki	Maasai	<i>Zanthoxylum chabyleum</i> Engl.	<i>Zanthoxylum</i> sp. ^{m,r}	n	<i>Zanthoxylum chabyleum</i> Engl.	Rutaceae	B, L
MP 610	Olomi	Maasai	–	<i>Boscia salicifolia</i> ^m	–	<i>Boscia salicifolia</i> Oliv.	Capparaceae	B
MP 559	Onjani longera	Maasai	<i>Lannea schweinfurthii</i> (Engl.) Engl.	<i>Crossopteryx febrifuga</i> ^r	F	undecided	–	B, L
MP 344	Opoo	Swahili	–	–	–	indet.	–	–
MP 374	Opoo	Swahili	–	–	–	indet.	–	–
MP 405	Opoo	Swahili	–	–	–	indet.	–	–
MP 569	Orgilai	Maasai	<i>Ficus natalensis</i> Hochst.	<i>Zanthoxylum</i> sp. ^m	F	<i>Zanthoxylum</i> sp.	Rutaceae	B, L
MP 554	Oripilikwa	Maasai	–	<i>Strychnos</i> sp. ^{i,r}	–	<i>Strychnos</i> sp.	Loganiaceae	B
MP 557	Orubukoi	Maasai	–	Ochnaceae ^r	–	Ochnaceae sp.	Ochnaceae	B
MP 719	Pachori	–	–	–	–	indet.	–	–
MP 573	Paghasha	Samba/Swahili	–	<i>Senna</i> sp. ^{i,m,r}	–	<i>Senna</i> sp.	Leguminosae	B
CP61	Pangaa ya Hoza	Zaramo	–	–	–	indet.	–	–
CP94	Pangaa ya Kikula gembe (same as Mkula gembe)	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP60	Pangaa ya Kilemela tembo	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP95	Pangaa ya Mbula	Zaramo	–	–	–	indet.	–	–
CP253	Pangaa ya Mchekea	Zaramo	–	Loranthaceae ^r	n	Loranthaceae sp.	Loranthaceae	B, M
CP64	Pangaa ya Mheka nyoya	Zaramo	–	–	–	indet.	–	–
CP58	Pangaa ya Mkirika	Zaramo	–	Loranthaceae ^r	–	Loranthaceae sp.	Loranthaceae	B
CP198	Pangaa ya Mkirika	Zaramo	–	–	–	indet.	–	–
CP56	Pangaa ya Mkole	Zaramo	–	–	–	indet.	–	–
CP62	Pangaa ya Mkongo deka	Zaramo	–	Loranthaceae ^r	n	Loranthaceae sp.	Loranthaceae	B, M
CP63	Pangaa ya Mkula gembe	Zaramo	–	Loranthaceae ^r	–	Loranthaceae sp.	Loranthaceae	B

CP65	Pangaa ya Mkunde	Zaramo	–	–	–	indet.	–	–
CP200	Pangaa ya mluzi-gunga	Zaramo	–	<i>Erianthemum dregei</i> ⁱ	n	<i>Erianthemum dregei</i> (Eckl. & Zeyh.) Tiegh.	Loranthaceae	B, M
CP252.1	Pangaa ya Mpingo	Zaramo	–	Loranthaceae ^f	–	Loranthaceae sp.	Loranthaceae	B
CP55	Pangaa ya Mpingo	Zaramo	–	Loranthaceae ^f	n	Loranthaceae sp.	Loranthaceae	B, M
CP252.2	Pangaa ya Mpingo	Zaramo	–	–	–	indet.	–	–
CP93	Pangaa ya Mtogo	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP59	Pangaa ya Mtonga	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP92	Pangaa ya Muharaka	Zaramo	<i>Erianthemum sodenii</i> (Engl.) Balle	–	–	<i>Erianthemum sodenii</i> (Engl.) Balle	Loranthaceae	L
CP186	Pangaa ya mvuma nyuki	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP254	Pangaa ya Mwaraka (Muharaka)	Zaramo	–	–	–	Loranthaceae sp.	Loranthaceae	M
CP57	Pangaa ya Mwevumbulo	Zaramo	–	<i>Erianthemum</i> sp. ^{mm}	–	<i>Erianthemum</i> sp.	Loranthaceae	B, M
MP 697	Pilipili mtama/ Pilipili manga/ Fusho la watu	Swahili/ Zanzibar/-	–	<i>Piper</i> sp. ^f	–	<i>Piper</i> sp.	Piperaceae	B
MP 578	Pilipili mwitu	Samba/ Swahili	<i>Warburgia stuhlmannii</i> Engl.	<i>Warburgia</i> sp. ^f	n	<i>Warburgia stuhlmannii</i> Engl.	Canellaceae	B, L
MP 487	Poza	Swahili	<i>Cissus rotundifolia</i> Vahl	–	–	<i>Cissus rotundifolia</i> Vahl	Vitaceae	L
MP 314	Presha kushuka/ Mguruka	Swahili	<i>Boscia salicifolia</i> Oliv	<i>Pterocarpus</i> sp. ^f	F	undecided	–	B, L
MP 527	Qust	Arabic	–	–	–	indet.	–	–
MP 784	Saghamba	Samba	–	<i>Cissus integrifolia</i> ^f	–	<i>Cissus integrifolia</i> (Baker) Planch.	Vitaceae	B
MP 714	Saka banji	Arabic	–	–	–	indet.	–	–
MP 356	Salamaki	Swahili	<i>Senna alexandrina</i> Mill.	Leguminosae ^f	n	<i>Senna alexandrina</i> Mill.	Leguminosae	B, L
MP 521	Salamaki	Arabic	<i>Senna alexandrina</i> Mill.	<i>Senna</i> ^f <i>alexandrina</i> ⁱ	n	<i>Senna alexandrina</i> Mill.	Leguminosae	B, L
MP 707	Salamaki	–	<i>Senna alexandrina</i> Mill.	<i>Senna</i> ^f <i>alexandrina</i> ⁱ	n	<i>Senna alexandrina</i> Mill.	Leguminosae	B, L
MP 653	Samba/Kasera	Nyamwezi/ Swahili	–	Celastraceae ^f	–	Celastraceae sp.	Celastraceae	B
CP363	Sandalusi	–	–	–	–	indet.	–	–
MP 801	Sasambeghe	Samba	<i>Crossopteryx febrifuga</i> (G. Don) Benth	–	–	<i>Crossopteryx febrifuga</i> (G. Don) Benth	Rubiaceae	L
MP 765	Shubiri pori	–	<i>Aloe</i> sp.	<i>Allophylus</i> sp. ^{i,m,r}	F	<i>Allophylus</i> sp.	Sapindaceae	B, L
MP 599	Singwai	Maasai	<i>Cassia abbreviata</i> Oliv.	<i>Cassia</i> ^m <i>abbreviata</i> ⁱ	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 603	Singwai	Maasai	<i>Cassia abbreviata</i> Oliv.	<i>Cassia</i> sp. ^m	n	<i>Cassia abbreviata</i> Oliv.	Leguminosae	B, L
MP 562	Sokonoi	Maasai	<i>Warburgia stuhlmannii</i> Engl.	Leguminosae ^f	F	undecided	–	B, L
CP372	Solo	–	–	<i>Caesalpinia</i> sp. ^f	–	<i>Caesalpinia bonduc</i> (L.) Roxb.	Leguminosae	AP, B
CP355	Sufa	Arabic	–	<i>Lepidium</i> ⁱ <i>sativum</i> ⁱ	–	<i>Lepidium sativum</i> L.	Brassicaceae	B
MP 357	Sufa	Arabic	–	<i>Lepidium</i> ⁱ <i>sativum</i> ⁱ	–	<i>Lepidium sativum</i> L.	Brassicaceae	B
MP 520	Sufa	Arabic	–	<i>Lepidium</i> ⁱ <i>sativum</i> ⁱ	–	<i>Lepidium sativum</i> L.	Brassicaceae	B
CP108	Tamba	Swahili	–	–	–	Vitaceae sp.	Vitaceae	M
CP133	Tamba	Swahili	–	–	–	Vitaceae sp.	Vitaceae	M
CP25	Tamba	Swahili	–	–	–	indet.	–	–
CP349	Tofalijini	–	–	–	–	indet.	–	–
CP359	Ubani kawaida	Swahili	–	–	–	indet.	–	–
CP356	Ubani maka	Swahili	–	–	–	indet.	–	–
MP 703	Ubani sandalusi	Swahili	–	–	–	indet.	–	–
MP 702	Ubani zuhura	Arabic	–	–	–	indet.	–	–
MP 712	Udi karaha	Arabic	–	<i>Anacyclus</i> sp. ^f	–	<i>Anacyclus</i> sp.	Compositae	B
MP 686	Udinadi	Hindi/ Arabic	<i>Helicteres isora</i> L.	<i>Helicteres</i> sp.	n	<i>Helicteres isora</i> L.	Malvaceae	AP, B
CP70	Ufyambo	Swahili	<i>Abrus precatorius</i> L.	<i>Abrus</i> ⁱ <i>precatorius</i> ^{mm}	F	<i>Abrus precatorius</i> L.	Leguminosae	B, L
MP 329	Ufyambo	Swahili	<i>Abrus precatorius</i> L.	<i>Dombeya</i> sp. ⁱ	F	undecided	–	B, L
MP 312	Ufyambo	Swahili	<i>Abrus precatorius</i> L.	–	n	<i>Abrus precatorius</i> L.	Leguminosae	L
MP 442	Ufyambo	Swahili	<i>Abrus precatorius</i> L.	<i>Uvaria</i> sp. ^{mm,r}	–	<i>Uvaria</i> sp.	Annonaceae	B, L
CP5	Ufyambo	Swahili	cf. <i>Abrus precatorius</i> L.	–	–	cf. <i>Abrus precatorius</i> L.	Leguminosae	AP
CP109	Ufyambo	Swahili	cf. <i>Abrus precatorius</i> L.	–	–	cf. <i>Abrus precatorius</i> L.	Leguminosae	M
CP151	Ufyambo	Swahili	cf. <i>Abrus precatorius</i> L.	–	–	cf. <i>Abrus precatorius</i> L.	Leguminosae	M
CP137	Ufyambo	Swahili	cf. <i>Abrus precatorius</i> L.	–	–	cf. <i>Abrus precatorius</i> L.	Leguminosae	M
CP260	Ukwadu	Swahili	<i>Tamarindus indica</i> L.	–	–	<i>Tamarindus indica</i> L.	Leguminosae	L
MP 306	Unga wa mizizi ya katani	Swahili	<i>Agave sisalana</i> Perrine	–	–	<i>Agave sisalana</i> Perrine	Agavaceae	L
MP 508	Upendo	Swahili	–	Anacardiaceae ^f	–	Anacardiaceae sp.	Anacardiaceae	B
MP 307	Upendo wa ndoa	Swahili	–	–	–	indet.	–	–
MP 798	Urege	Samba	–	–	–	indet.	–	–
MP 549	Urege	Samba/ Swahili	–	–	–	indet.	–	–
MP 418	Usembe	Swahili	<i>Vachellia</i> sp.	–	–	indet.	–	–
CP251	Utumbo wa Kuku	Swahili	–	Apocynaceae ^f	–	Apocynaceae sp.	Apocynaceae	B
CP360	Uvumba	Swahili	–	–	–	indet.	–	–

MP 358	Uwatu	Swahili	<i>Foenum-graecum officinale</i> Moench.	<i>Trigonella foenum-graecum</i> ^{i,r}	G	<i>Trigonella foenum-graecum</i> L.	Leguminosae	B, L
CP352	Uwatu	Swahili	<i>Foenum-graecum officinale</i> Moench.	^r <i>Trigonella foenum-graecum</i> ^{i,m}	G	<i>Trigonella foenum-graecum</i> L.	Leguminosae	B, L
MP 725	Uzire	Swahili	–	^m <i>Cuminum cyminum</i> ^f	–	<i>Cuminum cyminum</i> L.	Apiaceae	B
MP 324	Vibuyu seeds	Swahili	Cucurbitaceae sp.	^{i,r} <i>Lagenaria siceraria</i> ^m	n	<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	B, M
CP294	Vuga	Swahili	<i>Plectranthus barbatus</i> Andrews	^{i,r} <i>Rhaphiodon echinus</i> ^m	G	<i>Rhaphiodon echinus</i> (Nees & Mart.) Schauer	Lamiaceae	B, L
CP224	Wege	Swahili	<i>Platycerium</i> sp.	<i>Platycerium aldicorne</i> ^f	n	<i>Platycerium aldicorne</i> Desv. unresolved	Polypodiaceae	B, M
MP 721	Zamda	Arabic	–	<i>Trachyspermum</i> ^f <i>ammi</i> ^m	–	<i>Trachyspermum ammi</i> (L.) Sprague	Apiaceae	B
MP 522	Zamda	Arabic	–	Apiaceae ^m	–	Apiaceae sp.	Apiaceae	B
MP 717	Zatari	Zanzibar	–	^{m,r} <i>Zataria multiflora</i> ⁱ	–	<i>Zataria multiflora</i> Boiss.	Lamiaceae	B
CP15	Zingiri	–	<i>Pyrenacantha kaurabassana</i> Baill.	<i>Pyrenacantha</i> sp. ^f	n	<i>Pyrenacantha kaurabassana</i> Baill.	Icacinaceae	B, L
CP358	Zukura	–	–	<i>Boswellia</i> sp. ^f	–	<i>Boswellia</i> sp.	Bursaceae	B

^aSuperscript indicates what markers identified the sample to what level: ITS (i), matK (m), rbcL (r).

^bLevel of conflict between conventional methods and DNA barcoding: genus (G), family (F), species (S), no conflict (n).

^cIdentification methods used to come to the species hypothesis. A posteriori (AP), DNA barcoding (B), literature (L), morphology (M) Bold indicates that these methods were the deciding factor.

References

- Abihudi, S., 2014. Documentation and Identification of Medicinal Plants Trade in Tanzania by Means of DNA Barcoding. MSc Thesis. Muhimbili University of Health and Allied Sciences, Dar-es-Salaam.
- Altschul, S.F., Gish, W., Miller, W., Myers, E.W., Lipman, D.J., 1990. Basic local alignment search tool. *J. Mol. Biol.* 215, 403–410.
- othersBaker, C.S., Steel, D., Choi, Y., Lee, H., Kim, K.S., Choi, S.K., Ma, Y.U., Hambleton, C., Psihoyos, L., Brownell, R.L., 2010. Genetic evidence of illegal trade in protected whales links Japan with the US and South Korea. *Biol. Lett.* 6, 647–650.
- Benson, D.A., Cavanaugh, M., Clark, K., Karsch-Mizrachi, I., Lipman, D.J., Ostell, J., Sayers, E.W., 2012. GenBank. *Nucleic Acids Res.* gks1195.
- Berlin, B., 1992. Ethnobiological Classification: Principles of Categorization of Plants and Animals in Traditional Societies. Princeton University Press, Princeton, NJ.
- Berlin, B., 1973. Folk systematics in relation to biological classification and nomenclature. *Annu. Rev. Ecol. Systemat.* 259–271.
- Blaalid, R., Kumar, S., Nilsson, R.H., Abarenkov, K., Kirk, P.M., Kausserud, H., 2013. ITS1 versus ITS2 as DNA metabarcodes for fungi. *Mol. Ecol. Resour.* 13, 218–224. <https://doi.org/10.1111/1755-0998.12065>.
- Carlson, J.E., Tulsieram, L.K., Glaubitz, J.C., Luk, V.W.K., Kauffeldt, C., Rutledge, R., 1991. Segregation of random amplified DNA markers in F1 progeny of conifers. *Theor. Appl. Genet.* 83. <https://doi.org/10.1007/BF00226251>.
- CBOL Plant Working Group, 2009. A DNA barcode for land plants. *Proc. Natl. Acad. Sci.* 106, 12794–12797.
- Chen, S., Yao, H., Han, J., Liu, C., Song, J., Shi, L., Zhu, Y., Ma, X., Gao, T., Pang, X., Luo, K., Li, Y., Li, X., Jia, X., Lin, Y., Leon, C., 2010. Validation of the ITS2 region as a novel DNA barcode for identifying medicinal plant species. *PLoS One* 5, 1–8. <https://doi.org/10.1371/journal.pone.0008613>.
- Coghlan, M., Haile, J., Houston, J., Murray, D., White, N., Moolhuijzen, P., Bellgard, M., Bunce, M., 2012. Deep sequencing of plant and animal DNA contained within traditional Chinese medicines reveals legality issues and health safety concerns. *PLoS Genet.* 8, e1002657. <https://doi.org/10.1371/journal.pgen.1002657>.
- Collins, R., Armstrong, K.F., Meier, R., Yi, Y., Brown, S.D.J., Cruickshank, R.H., Keeling, S., Johnston, C., 2012. Barcoding and border biosecurity: identifying cyprinid fishes in the aquarium trade. *PLoS One* 7, e28381. <https://doi.org/10.1371/journal.pone.0028381>.
- Cunningham, A.B., 2001. *Applied Ethnobotany: People, Wild Plant Use and Conservation*. Earthscan, London.
- de Boer, H.J., Ghorbani, A., Manzanilla, V., Raclariu, A.-C., Kreziou, A., Ounjai, S., Osathanunkul, M., Gravendeel, B., 2017. DNA metabarcoding of orchid-derived products reveals widespread illegal orchid trade. *Proc. R. Soc. Biol.* <https://doi.org/10.1098/rspb.2017.1182>. 20171182.
- de Boer, H.J., Kool, A., Broberg, A., Mziray, W.R., Hedberg, I., Levenfors, J.J., 2005. Anti-fungal and anti-bacterial activity of some herbal remedies from Tanzania. *J. Ethnopharmacol.* 96, 461–469.
- de Boer, H.J., Ouarghidi, A., Martin, G., Abbad, A., Kool, A., 2014. DNA barcoding reveals limited accuracy of identifications based on folk taxonomy. *PLoS One* 9, e84291. <https://doi.org/10.1371/journal.pone.0084291>.
- Dunning, L.T., Savolainen, V., 2010. Broad-scale amplification of matK for DNA barcoding plants, a technical note: AMPLIFICATION OF matK FOR DNA BARCODING PLANTS. *Bot. J. Linn. Soc.* 164, 1–9. <https://doi.org/10.1111/j.1095-8339.2010.01071.x>.
- Fazekas, A.J., Burgess, K.S., Kesanakurti, P.R., Graham, S.W., Newmaster, S.G., Husband, B.C., Percy, D.M., Hajibabaei, M., Barrett, S.C.H., 2008. Multiple multilocus DNA barcodes from the plastid genome discriminate plant species equally well. *PLoS One* 3, e2802. <https://doi.org/10.1371/journal.pone.0002802>.
- Ford, C.S., Ayres, K.L., Toomey, N., Haider, N., Stahl, J.V.A.N.A., Kelly, L.J., Wikström, N., Hollingsworth, P.M., Duff, R.J., Hoot, S.B., Cowan, R.S., Chase, M.W., Wilkinson, M.J., 2009. Selection of candidate coding DNA barcoding regions for use on land plants. *Bot. J. Linn. Soc.* 1–11.
- Ghorbani, A., Gravendeel, B., Selliah, S., Zarre, S., de Boer, H.J., 2016. DNA barcoding of tuberous Orchidoideae: a resource for identification of orchids used in Salep. *Mol. Ecol. Resour.* <https://doi.org/10.1111/1755-0998.12615>.
- Ghorbani, A., Saeedi, Y., de Boer, H.J., 2017. Unidentifiable by morphology: DNA barcoding of plant material in local markets in Iran. *PLoS One* 12, e0175722. <https://doi.org/10.1371/journal.pone.0175722>.
- Hebert, P.D.N., Cywinska, A., Ball, S., de Waard, J., 2003. Biological identifications through DNA barcodes. *Proc. R. Soc. B* 270, 313–322.
- Hedberg, I., Hedberg, O., Madat, P.J., Mshigeni, K.E., Mshiu, E.N., Samuelsson, G., 1983a. Inventory of plants used in traditional medicine in Tanzania. II. Plants of the families Dilleniaceae—Opiliaceae. *J. Ethnopharmacol.* 9, 105–127.
- Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K.E., Mshiu, E.N., Samuelsson, G., 1983b. Inventory of plants used in traditional medicine in Tanzania. Part III. Plants of the families Papilionaceaevitaceae. *J. Ethnopharmacol.* 9, 237–260.
- Hedberg, I., Hedberg, O., Madati, P.J., Mshigeni, K.E., Mshiu, E.N., Samuelsson, G., 1982. Inventory of plants used in traditional medicine in Tanzania. I. Plants of the families Acanthaceae-Cucurbitaceae. *J. Ethnopharmacol.* 6, 29–60.
- Hollingsworth, P.M., 2011. Refining the DNA barcode for land plants. *Proc. Natl. Acad. Sci. U. S. A* 108, 19451–19452. <https://doi.org/10.1073/pnas.1116812108>.
- IUCN, 2018. *IUCN Red List of Threatened Species*. Version 2017-3.
- Kearse, M., Moir, R., Wilson, A., Stones-Havas, S., Cheung, M., Sturrock, S., Buxton, S., Cooper, A., Markowitz, S., Duran, C., Thierer, T., Ashton, B., Meintjes, P., Drummond, A., 2012. Geneious Basic: an integrated and extendable desktop software platform for the organization and analysis of sequence data. *Bioinformatics* 28, 1647–1649. <https://doi.org/10.1093/bioinformatics/bts199>.
- Kokwaro, J.O., 2009. *Medicinal Plants of East Africa*, third ed. University of Nairobi Press, Nairobi, Kenya.
- Kool, A., de Boer, H.J., Krüger, Å., Rydberg, A., Abbad, A., Björk, L., Martin, G., 2012. Molecular identification of commercialized medicinal plants in southern Morocco. *PLoS One* 7, e39459. <https://doi.org/10.1371/journal.pone.0039459>.
- Kress, W.J., Erickson, D.L., 2007. A two-locus global DNA barcode for land plants: the coding rbcL gene complements the non-coding trnH-psbA spacer region. *PLoS One* 2, e508. <https://doi.org/10.1371/journal.pone.0000508>.
- Kress, W.J., García-Robledo, C., Uriarte, M., Erickson, D.L., 2015. DNA barcodes for ecology, evolution, and conservation. *Trends Ecol. Evol.* 30, 25–35. <https://doi.org/10.1016/j.tree.2014.10.008>.
- Kress, W.J., Wurdack, K.J., Zimmer, E.A., Weigt, L.A., Janzen, D.H., 2005. Use of DNA barcodes to identify flowering plants. *Proc. Natl. Acad. Sci.* 102, 8369–8374.
- Levin, R.A., Wagner, W.L., Hoch, P.C., Nepokroeff, M., Pires, J.C., Zimmer, E.A., Sytsma, K.J., 2003. Family-level relationships of Onagraceae based on chloroplast rbcL and ndhF data. *Am. J. Bot.* 90, 107–115. <https://doi.org/10.3732/ajb.90.1.107>.
- Li, D.Z., Gao, L.M., Li, H.T., Wang, H., Ge, X.J., Liu, J.Q., Chen, Z.D., Zhou, S.L., Chen, S.L., Yang, J.B., others, 2011. Comparative analysis of a large dataset indicates that internal transcribed spacer (ITS) should be incorporated into the core barcode for seed plants. *Proc. Natl. Acad. Sci.* 108, 19641–19646.
- Mabberley, D.J., 2008. *Mabberley's Plant-Book: a Portable Dictionary of Plants, Their Classifications, and Uses*. Cambridge University Press.
- Martin, G.J., 2004. *Ethnobotany: a Methods Manual*. Earthscan, London, UK.
- McMillen, H.L., 2012. Ethnobotanical knowledge transmission and evolution: the case of medicinal markets in Tanga, Tanzania. *Econ. Bot.* 66, 121–131.
- McMillen, H.L., 2008. Conserving the roots of trade: local ecological knowledge of ethnomedicines from Tanga, Tanzania markets. Thesis (Ph.D.). <http://hdl.handle.net/10125/20404>.
- Meier, R., Shiyang, K., Vaidya, G., Ng, P.K.L., 2006. DNA barcoding and taxonomy in Diptera: a tale of high intraspecific variability and low identification success. *Syst.*

- Biol. 55, 715–728. <https://doi.org/10.1080/10635150600969864>.
- Nahashon, M., 2013. Conservation of Wild-Harvested Medicinal Plant Species in Tanzania: Chain and Consequence of Commercial Trade on Medicinal Plant Species. MSc thesis. Uppsala University, Uppsala, Sweden.
- Newmaster, S.G., Grgric, M., Shanmughanandhan, D., Ramalingam, S., Ragupathy, S., 2013. DNA barcoding detects contamination and substitution in North American herbal products. *BMC Med.* 11, 222.
- Otieno, J., Abihudi, S., Veldman, S., Nahashon, M., van Andel, T., de Boer, H.J., 2015. Vernacular dominance in folk taxonomy: a case study of ethnospecies in medicinal plant trade in Tanzania. *J. Ethnobiol. Ethnomedicine* 11. <https://doi.org/10.1186/1746-4269-11-10>.
- Ouarghidi, A., Powell, B., Martin, G.J., De Boer, H., Abbad, A., 2012. Species substitution in medicinal roots and possible implications for toxicity of herbal remedies in Morocco. *Econ. Bot.* 66, 370–382. <https://doi.org/10.1007/s12231-012-9215-2>.
- Posadzki, P., Watson, L., Ernst, E., 2013. Contamination and adulteration of herbal medicinal products (HMPs): an overview of systematic reviews. *Eur. J. Clin. Pharmacol.* 69, 295–307.
- Posthouwer, C., Veldman, S., Abihudi, S., Otieno, J.N., van Andel, T.R., de Boer, H.J., 2018. Quantitative market survey of non-woody plants sold at Kariakoo Market in Dar es Salaam, Tanzania. *J. Ethnopharmacol.* 222, 280–287. <https://doi.org/10.1016/j.jep.2018.04.039>.
- Quiroz, D., Towns, A., Legba, S.I., Swier, J., Brière, S., Sosef, M., van Andel, T., 2014. Quantifying the domestic market in herbal medicine in Benin, West Africa. *J. Ethnopharmacol.* 151, 1100–1108.
- Raclariu, A.C., Mocan, A., Popa, M.O., Vlase, L., Ichim, M.C., Crisan, G., Brysting, A.K., De Boer, H.J., 2017a. *Veronica officinalis* product authentication using DNA metabarcoding and HPLC-MS reveals widespread adulteration with *Veronica chamaedrys*. *Front. Pharmacol.* 8, 378.
- Raclariu, A.C., Paltinean, R., Vlase, L., Labarre, A., Manzanilla, V., Ichim, M.C., Crisan, G., Brysting, A.K., de Boer, H., 2017b. Comparative authentication of *Hypericum perforatum* herbal products using DNA metabarcoding, TLC and HPLC-MS. *Sci. Rep.* 7, 1291.
- Raclariu, A.C., Tebrenu, C.E., Ichim, M.C., Ciuperca, O.T., Brysting, A.K., de Boer, H.J., 2017c. What's in the Box? Authentication of *Echinacea* Herbal Products Using DNA Metabarcoding and HPTLC. [bioRxiv 202721](https://doi.org/10.1101/2017.07.27.181111).
- Richardson, R.T., Lin, C.-H., Sponsler, D.B., Quijia, J.O., Goodell, K., Johnson, R.M., 2015. Application of ITS2 metabarcoding to determine the provenance of pollen collected by honey bees in an agroecosystem. *Appl. Plant Sci.* 3. <https://doi.org/10.3732/apps.1400066>.
- Seethapathy, G.S., Ganesh, D., Kumar, J.U.S., Senthilkumar, U., Newmaster, S.G., Ragupathy, S., Shaanker, R.U., Ravikanth, G., 2014. Assessing product adulteration in natural health products for laxative yielding plants, Cassia, Senna, and Chamaecrista, in Southern India using DNA barcoding. *Int. J. Leg. Med.* 1–8.
- Sun, Y., Skinner, D.Z., Liang, G.H., Hulbert, S.H., 1994. Phylogenetic analysis of Sorghum and related taxa using internal transcribed spacers of nuclear ribosomal DNA. *Theor. Appl. Genet.* 89. <https://doi.org/10.1007/BF00226978>.
- Towns, A.M., Quiroz, D., Guinee, L., de Boer, H.J., van Andel, T.R., 2014. Volume, value and floristic diversity of Gabon's medicinal plant markets. *J. Ethnopharmacol.* 155, 1184–1193.
- Valentini, A., Pompanon, F., Taberlet, P., 2009. DNA barcoding for ecologists. *Trends Ecol. Evol.* 24, 110–117. <https://doi.org/10.1016/j.tree.2008.09.011>.
- van Andel, T., Myren, B., van Onselen, S., 2012. Ghana's herbal market. *J. Ethnopharmacol.* 140, 368–378.
- van Andel, T.R., Croft, S., van Loon, E.E., Quiroz, D., Towns, A.M., Raes, N., 2015. Prioritizing West African medicinal plants for conservation and sustainable extraction studies based on market surveys and species distribution models. *Biol. Conserv.* 181, 173–181. <https://doi.org/10.1016/j.biocon.2014.11.015>.
- Van Andel, T.R., Van 't Klooster, C., Quiroz, D., Towns, A.M., Ruysschaert, S., Van den Berg, M., 2014. Local plant names reveal that enslaved Africans recognized substantial parts of the New World flora. *Proc. Natl. Acad. Sci.* 111 (50), E5346–E5353. <https://doi.org/10.1073/pnas.1418836111>.
- Van't Klooster, C., Lindeman, J.C., Jansen-Jacobs, M.J., 2003. *Index of Vernacular Plant Names of Suriname*. Leiden. Nationaal Herbarium Nederland, Universiteit Leiden branch.
- Veldman, S., Gravendeel, B., Otieno, J.N., Lammers, Y., Duijm, E., Nieman, A., Bytebier, B., Ngugi, G., Martos, F., van Andel, T.R., others, 2017. High-throughput sequencing of African chikanda cake highlights conservation challenges in orchids. *Biodivers. Conserv.* 1–18.
- Veldman, S., Otieno, J., Gravendeel, B., Andel, T. van, de Boer, H.J., 2014. Conservation of endangered wild harvested medicinal plants: use of DNA barcoding. *Nov. Plant Bioresour. Appl. Food Med. Cosmet.* 81–88.
- Wasser, S.K., Mailand, C., Booth, R., Mutayoba, B., Kisamo, E., Clark, B., Stephens, M., 2007. Using DNA to track the origin of the largest ivory seizure since the 1989 trade ban. *Proc. Natl. Acad. Sci.* 104, 4228.
- Weckerle, C.S., de Boer, H.J., Puri, R.K., van Andel, T., Bussmann, R.W., Leonti, M., 2018. Recommended standards for conducting and reporting ethnopharmacological field studies. *J. Ethnopharmacol.* 210, 125–132. <https://doi.org/10.1016/j.jep.2017.08.018>.
- Williams, V.L., Balkwill, K., Witkowski, E.T.F., 2000. Unraveling the commercial market for medicinal plants and plant parts on the Witwatersrand, South Africa. *Econ. Bot.* 54, 310–327. <https://doi.org/10.1007/BF02864784>.