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Research Article

Review of literature and phytochemistry screening of medicinal plants used in traditional treatment of brain diseases in Africa

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Abstract

Plants are large reservoir of active ingredients used to treat many pathologies including brain pathology. This research work aims first at reviewing the existing literature pertaining to those plants used in traditional African medicine to treat neurological and / or psychiatric diseases. In addition, it performs a phytochemical screening of twenty-eight of these plants. The literature review identified 511 plant species belonging to 113 families, 788 recipes treating convulsion, epilepsy, headache, migraine, hallucinations, insomnia, madness and mental disorders. 78% of the recipes are unique plants, while 22% are obtained by plant associations. The most used part of the plant in the ongoing study is the leaf. The recipes are usually administered as decoction and orally. Phytochemical screening reveals the presence of chemical families such as alkaloids, flavonoids, tannins, anthocyanins, mucilages, terpenes, steroids and coumarins, possessing various properties including antioxidant, anesthetic, anticonvulsant, myorelaxant, sedative and anxiolytics that may be involved in the treatment of convulsions, epilepsy and mental disorders. The findings of the study provide a database for biological screening in the search for new plant-based neuroprotective molecules.

Keywords: Medicinal plants, phytochemical screening, neurological diseases, psychiatric diseases.

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1. Introduction

The use of plants for therapeutic purposes is reported in ancient Arabic, Chinese, Egyptian, Hindu, Greek, and Roman literature [1]. In Africa, plants therapeutic power was empirically known to ancestors and parents [2].

In South Africa, for example, there is a ration of one traditional healer for 700-1,200 inhabitants, contrary to the ration of one trained medical doctor dedicated for nearly 18, 000 Inhabitants. The drugs used are considered as divine gift, appreciated for both its symbolic and spiritual significance as well as its medicinal effects. In addition to plants, healers can use incantations and spells in their healing methods (3; 4; 5). Healing in African context is an inextricable part of African religion [5].

This should to be taken into account while treating mental illnesses involving practices such as surrounding the patient's head with plants or the use of other less plausible pharmacologically forms of administration. As such, one may ignore the realities pertaining to the chemical composition of the herbal or plant medicine that the population uses on daily basis for healthcare purposes.

In order to enhance African medicine effeciency, several phytochemical and pharmacological investigations

are needed so as to scientifically substantiate the use of medicinal plants by the traditional healers As, it is a matter of common knowledge that the treatment through traditional medicine is the first solution patients resort to due to its cultural values and economic affordability. But in spite of its importance the commonly admitted reality is related to the poor documentation of its achievements.

It is in this context that the ongoing study envisages to identify the plants used in alternative medicine for the treatment of neurological pathologies in general and specifically convulsions, epilepsy, mental disorders with a view to highlighting and isolating the major chemical groups responsible for the properties of these plants.

2. Material and methods

The review of existing scholarships has enabled to carry out the inventory of the plants used in traditional African medicine for the treatment of neurological and / or psychiatric diseases. Those medicinal plants have been harvested and identified at the National Herbarium of Benin and subjected to phytochemical screening. Various organs of 28 plants made up of 14 medicinal plants mostly used in recipes and other 14 less used plants for medicinal purposes. The organs are dried at 16 °C in the laboratory and reduced to powder. The powder of each organ is collected for phytochemical screening according to Houghton and Amala [6] method and summarized in Table 1.

Table 1: Phytochemical Screening

Classes de principes actifs	Réactifs spécifiques et réactions
Alkaloids	Mayer (potassium iodomercurate): yellow precipitate or ladle in the tube
Catechism tannins	Stiasny reagent: pink precipitate
Gallic tannins	Saturation of Na acetate + a few drops of 1% FeCl3: blue or black tint
Flavonoids	Shinoda (cyanidin reaction): staining
	Flavones (Orange,)
	Flavonols (Red)
	Flavonones (Violet)
Anthocyanins	Red color of filtrate increased in acidic medium and purplish blue in alkaline medium
Leucoanthocyans	Shinoda (hydrochloric alcohol): cherry red coloring
Quinone derivatives	Born-Trager (reaction between quinone rings in NH3 medium): pink to purplish-red coloring
Saponosides	Determination of foam index (positive if IM> 100)
Triterpenoids	Lieberman-Buchard (acetic anhydride-sulfuric acid 50: 1): blue or green violet coloring
Kedde steroids	(2% dinitrobenzoic acid in ethanol + 1: 1 NaOH (1N)): red or purple color in wine
Cardenolides	Dinitrobenzene 1% in ethanol + 20% NaOH: blue color
Cyanogenic deratives	Guignard (paper soaked in 5% picric acid): orange to brown coloring
Mucilages	Study of the viscosity of infused and decocted. Flocculation in absolute ethanol
Reducing Compounds	Hot Fehling Liquor: Brick Red Precipitate
Coumarins	Ammonia 25%: intense fluorescence
Anthracene derivatives	Chloroform + ammonia: more or less intense red coloring

2.1 Statistical analyzes

The data collected following a literature review were processed using the Excel 2007 spreadsheet software. This has facilitated the establishment of frequencies of species use and their usual values (VU) according to the formula represented below.

$$VU = n/N$$

n = number of times the species is cited in recipes
N = total number of recipes

3. Findings

3.1 Diversity of families

The inventory has generated a directory of 511 plant species belonging to 113 families. As the result of the distribution operated, ione notes the predominance of the Asteraceae with 34 species, Leguminosae-Papilionadeae with 32 species, Euphorbiaceae with 27 species, Lamiaceae with 26 species, Rubiaceae with 25 species, Leguminosae-Mimosoideae with 17 species and Malvaceae with 18 species. Less predominance is observed for families like Leguminosae-Caesalpinoideae, Annonaceae, Solanaceae with respectively 15; 13; 12 species Poaceae, Rutaceae, Cucurbitaceae with 10 species each; Acanthaceae, and Combretaceae group 9 species each; Apocyanaceae, Zingiberaceae and Meliaceae contain 8 species each; Capparaceae with 7 species and Ebenaceae, Moraceae Loranthaceae which have 6 species each.

Six families are represented by 5 species each; eleven families per four species each; fifteen families by three species; twelve families per 2 species and 47 families per 1 species each (Figure 1).

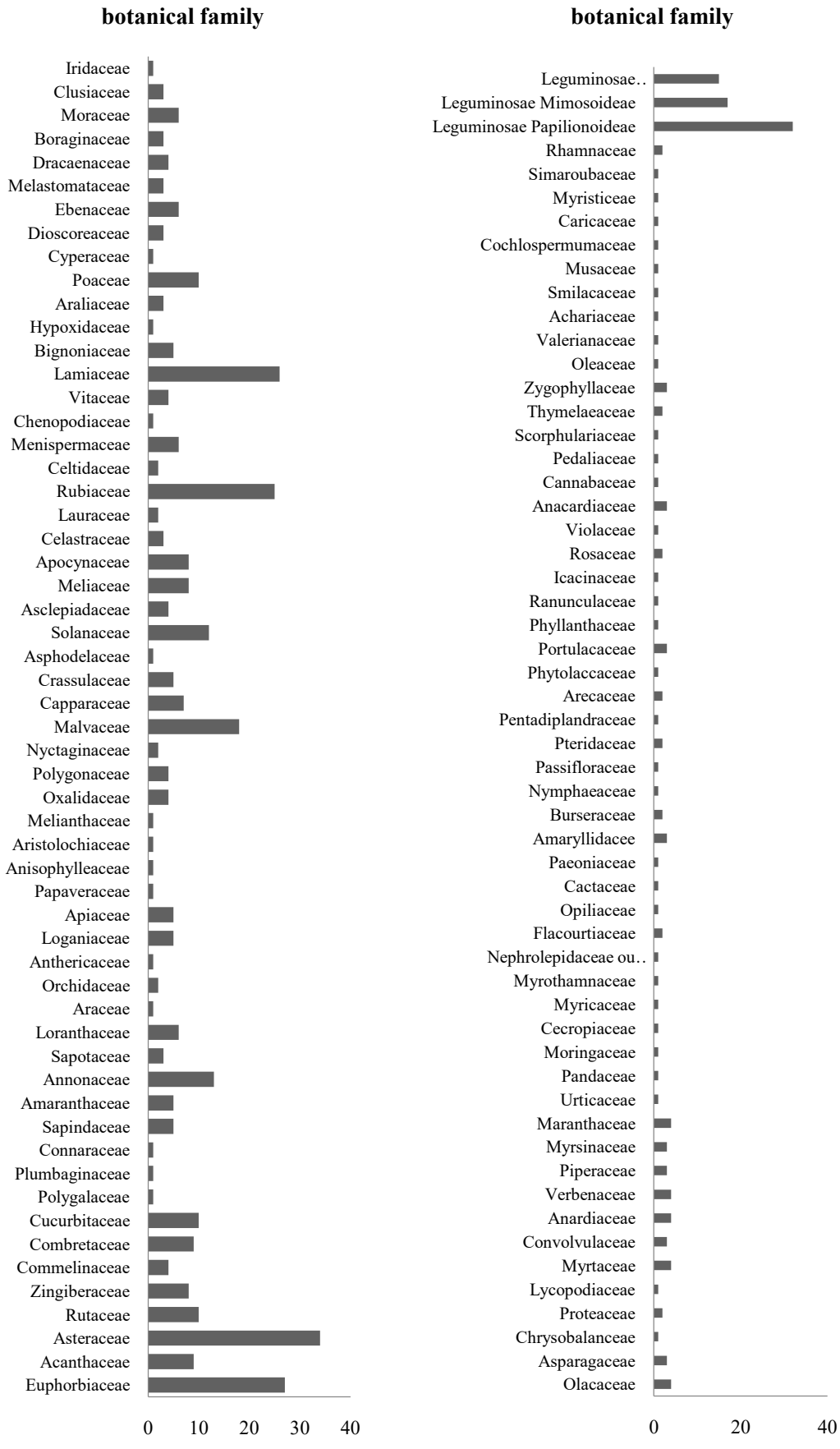

Figure 1: Distribution of plant species within families

3.2 Categories of Medicinal Recipes

788 recipes prepared from the 511 plant species have been identified. Among them, 616 recipes are mono-specific (single plant) (Table 2) while 172 recipes are plant associations (poly-specific) (Table 3), making respectively 78% and 22%v. The number of plants used in combination for poly-specific recipes varies between 2 and 9 (Table 3). As for the poly-specific recipes, 111 ie 14% are composed by two plants, 35 recipes ie, 5% are made up of three plants and 26 recipes ie, 3% are made up of over three plants (Figure 2). More than 5% of medicinal recipes are used with nineteen adjuvants ,namely honey, sugar, blue alum, kaolin, shea butter, black soap, lemon juice, sugar cane juice, palm oil, elephant faeces, yolk, meal of turtle, mother's urine, cow urine, meat, chiken, milk and petrolatum jelly**.**

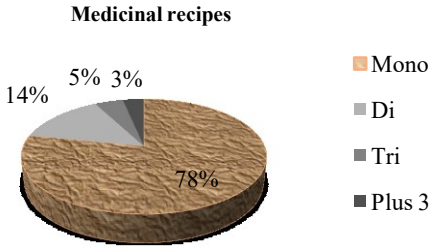

Figure 2: Types of medicinal recipes

3.3 Brain pathology

These plants are used to treat neurological diseases namely Convultions (35%), Epilepsy (31%), Headache (16%), Migraine (2%) and Psychiatric diseases which include madness (9%). hallucinations (0.35%), and mental disorders (5%). Some plants have sedative, tranquilizing, psychoactive effects, and treating insomnia. They each represent less than 1% of the frequencies (Figure 3).

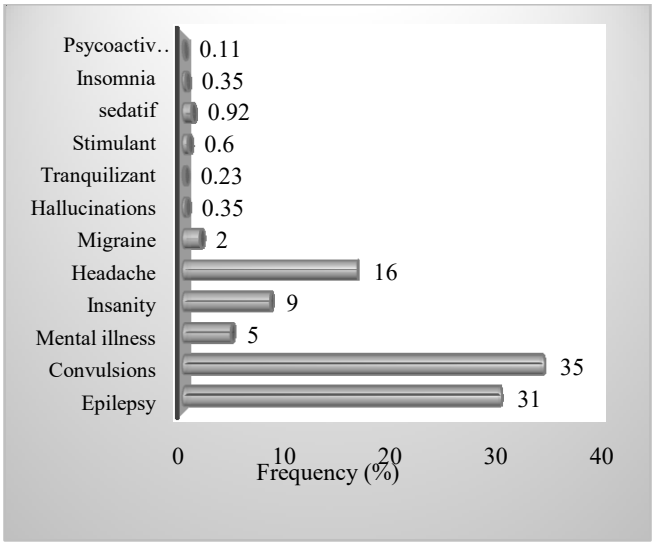

Figure 3: Pathologies treated by medicinal plants

3.4 Plants Organs Used

Several organs are involved in the preparation of recipes (Figure 4). The most used organ is the leaf (41%) followed by the root (27%), bark (7%), leafy stems (9%), and 6% for the whole plant. As for the other organs, namely fruits, seeds, root bark and flowers, they are respectively 4%; 3%; 2%; and 1%. The latex is used in less than 1% of the recipes.

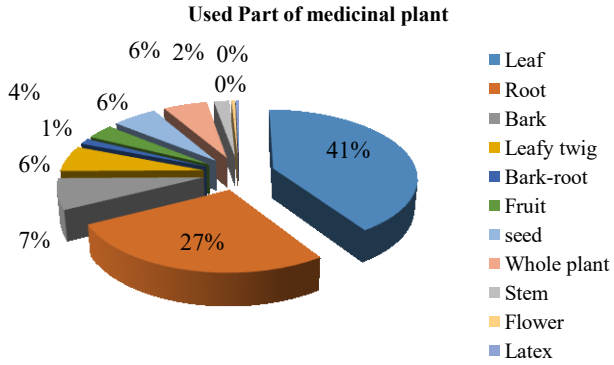

Figure 4: Vegetable organs used in recipes

3.5 Galenic Form of Recipes

Plant organs are used in the form of decoction (Dec), trituration (Tri), maceration (Mac), powder (Pou), infusion (Inf), fumigation (Fum), ash (Ash). The respective percentages of use of these galenic forms is 44%, 19%; 11%; 10%; 8%; 4% and 2 Alcoholics (Alc) or maceration with alcohol, and sauce are met in the proportions of 1%. Essential Oil (HE) is found in less than 1% of cases (fimure 5).

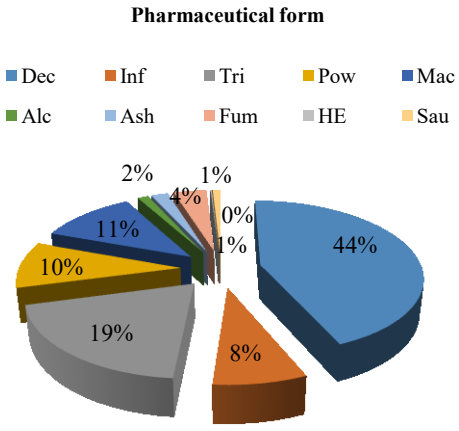

Figure 5: Types of Traditional Galenic Forms

3.6 Routes of Administration of Recipes and Dosage

Various routes are used for the administration of those herbal medicines. The main one is the oral route (54%) (Figure 6). Other routes are: the dermal route (24%); the nasal route (14%); the eye track (5%); Intra-dermal route (3%) and rectal route less than (1%). The per-lingual

route is used only once and represents less than 1% (0.19%). In most cases, oral route is used in combination with one of the other four routes (cutaneous, nasal, ocular and intradermal) (Table 2 and 3). The dosage applicable varies according to the route of administration of the recipes. However, very few recipes, that is, 2.78% are labeled with a dosage. For some recipes the frequency is specified as follows: once; twice; three times; seven times a day. For others the label specifies the volume to be administered as: one, two, three drops; one or two coffee spoons; one or two tablespoons; ½, 1 or 2 trumblers; 125 mL or 500 mL; 1 or 2 liquor glass. And eventually for other recipes, the quantity of plant material and / or water has been specified (Table 2 and 3).

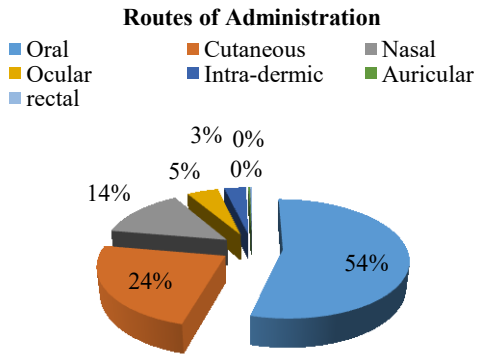

Figure 6: The Various Routes of Administration

Table 2: Mono-specific Medicinal Recipes

Species Plant	Usuel Value (UV)	Part of employer	Mode of preparation	Administration pathways	Disorders or pharmacology effects	Reference
Abrus precatorius L. (Leguminosae-Papilionoideae)	0.005	Leaf	Pow	Oral	Cc	[7]
Abrus precatorius L. (Leguminosae-Papilionoideae)	0.005	Root	Dec	Oral	E & C	[7, 8]
Abrus precatorius L. (Leguminosae-Papilionoideae)	0.005	Leaf	Tri	Oral	C	[8]
Acacia amechethophylla A.Rich (Leguminosae-Mimosoideae)	0.001	Root	Inf	Oral/ Cutaneous (bath)	C	[9]
Acacia ataxacanha DC (Leguminosae-Mimosoideae)	0.001	Leaf	Dec	Cutaneous (bath)	Cf	[10]
Acacia karroo Hayne (Leguminosae-Mimosoideae)	0.001	Root	Inf	Oral	C	[9]
Acacia sieberiana DC (Leguminosae-Mimosoideae)	0.002	Leafy twigs	Dec	Oral	Cc	[10]
Acalypha fruticosa Forssk (Euphorbiaceae)	0.001	Leaf	Dec	Oral	E	[8]
Afraegle paniculata Schumach et Thonn (Rutaceae)	0.001	Bark-Root	Dec	Oral	C	[11]
Aframomum melegueta (Zingiberaceae)	**0.013**	Fruit burned	Ash	Intra-dermic (scarifications)	E	[10]
Afzelia africana Smith (Leguminosae-Caesalpinoideae)	**0.007**	Root	Pow	Oral	C	[10]
Afzelia africana Smith (Leguminosae-Caesalpinoideae)	**0.007**	Leaf	Dec	Oral Cutaneous (head bath)	Mig	[12]
Afzelia africana Smith (Leguminosae-Caesalpinoideae)	**0.007**	Leaf	Dec	Oral	E	[10]
Agathosma gnidioides (Rutaceae)	0.001	Leaf	Dec	Oral	C	[13]
Agelanthus dodoneifolius (DC) Polhill et Wiens (Loranthaceae)	0.002	Leafy twigs	Dec	Oral Cutaneous (bath)	Ins	[10]
Albizia anthelmintica (A.Rich) Brongn (Leguminosae-Mimosoideae)	0.002	Bark & Leafy twigs	Dec	Oral	E	[14]
Albizia anthelmintica (A.Rich) Brongn (Leguminosae-Mimosoideae)	0.002	Root & Leaf	Dec	Oral	M il	[8]
Albizia ferruginea (Guill. et Perr.) Benth (Leguminosae-Mimosoideae)	0.001	Bark & Root and Leaf	Dec	Oral	Cc	[15]
Albizia harveyi E. Fourn (Leguminosae-Mimosoideae)	0.001	Root	Dec	Oral	E	[8]
Alchornea cordifolia (Schumach. Et Thonn.) Mull. (Euphorbiaceae)	0.003	Leaf	Dec	Oral	He	[16]
Alchornea cordifolia (Schumach. Et Thonn.) Mull. (Euphorbiaceae)	0.003	Leaf	Mac	Cutaneous (head bath)	He	[16]
Allium sativum L (Amaryllidaceae)	0.002	Root	Mac/ cow urine	Oral	**C**	[10]
Allophylus africanus (Sapindaceae)	0.003	Root & Leaf	Dec	Oral	E & Ins	[16]
Allophylus africanus (Sapindaceae)	0.003	Leaf (young)	Fum	Nasal (inhale fume)	He	[17;18; 20]
Amaranthus graecizans L.	0.001	Leaf	Mac	Oral	E	[21]

(Amaranthaceae)						
Amaranthus spinosus L (Amaranthaceae)	0.006	Whole Plant	Tri	Oral	E Ins Ce	[19]
Amaranthus spinosus L (Amaranthaceae)	0.006	Leaf	Ash + vaseline	Intra-dermic (scarification)	M il	[22]
Amaranthus spinosus L (Amaranthaceae)	0.006	Leaf	Fum	Nasal	He	[9]
Amaranthus spinosus L (Amaranthaceae)	0.006	Leaf (young)	Dec	Oral	M il	[10]
Amaranthus spinosus L. (Amaranthaceae)	0.006	Whole Plant	Tri	Ocular Oral	E Ce	[22;15]
Anchomanes giganteus (Araceae)	0.001	Root	Dec	Cutaneous (bath)	E Ins	[23]
Anisophyllea buettneri Engl. (Anisophylleaceae)	0.001	Root	Dec	Oral	E	[23]
Annona arenaria Thonn. (Annonaceae)	0.001	Leaf (young)	Dec	Oral	E	[23]
Annona senegalensis (Annonaceae)	**0.007**	Leaf (young)	Tri	Oral	E	[24; 25]
Annona senegalensis (Annonaceae)	**0.007**	Leafy twigs	Dec	Oral Cutaneous (bath)	C	[10]
Anonidium mannii (Oliv) (Annonaceae)	0.001	Bark	Pow	Oral	E	[23]
Ansellia africana Lindl. (Orchidaceae)	0.002	Root	Dec	Oral	C	[23]
Ansellia africana Lindl. (Orchidaceae)	0.002	Leaf & Bark	Dec	Oral	M il & Ins	[26]
Anthericum whytei Baker (Anthericaceae)	0.001	Root	Dec	Oral	C	[23]
Anthocleista grandiflora Gilg (Loganiaceae)	0.001	Root	Dec	Cutaneous (bath)	E	[27]
Anthocleista nobilis G. Don (Loganiaceae)	0.002	Leaf	Dec	Oral	E	[7]
Arctopus echinatus L. (Apiaceae)	0.001	Root	Dec	Oral	E	[28]
Aristolochia bracteola L. (Aristolochiaceae)	0.001	Seed	Dec	Oral	C	[29]
Asystasia gangetica (L.) (Acanthaceae)	0.002	Leaf	Dec	Oral	E	[23]
Asystasia gangetica (L.) (Acanthaceae)	0.002	Leaf	Dec	Oral	Mig	[7]
Baphia kirkii Baker (Leguminosae-Papilionoideae)	0.001	Root	Dec	Oral	E	[7]
Baphia nitida Lodd. (Leguminosae-Papilionoideae)	0.001	Bark (fresh)	Dec	Cutaneous (bath)	E	[10]
Bersama abyssinica Fresen (Melianthaceae)	0.001	Root	Dec	Oral	E	[30]
Bidens pilosa L. (Asteraceae)	0.002	Whole Plant	Mac	Cutaneous (bath) or Ocular	Ee	[31]
Bidens pilosa L. (Asteraceae)	0.002	Leaf	Dec	Oral	He	[32]
Biophytum abyssinicum Steud (Oxalidaceae)	0.001	Whole Plant	Tri	Oral	E	[23]
Biophytum petersianum Klotzsch (Oxalidaceae)	0.003	Leaf	Sau	Oral	E	[33]
Biophytum petersianum Klotzsch (Oxalidaceae)	0.003	Leaf	Tri	Cutaneous (head bath)	Mig	[7]
Biophytum sensitivum (L.) DC. (Oxalidaceae)	0.001	Whole Plant	Tri	Oral	E	[23]
Blumea crispata (Asteraceae)	0.002	Leaf	Inf	Oral / Cutaneous (face bath)	Ce	[9]
Blumea crispata (Asteraceae)	0.002	Leaf	Tri	Intra-dermic (scarification)	He	[9]
Boerhaavia repens L. (Nyctaginaceae)	0.001	Whole Plant	Inf	Oral	C	[34]
Bombax costatum Pellegr. & Vuillet (Malvaceae)	0.005	Leaf	Tri	Oral	C	[10]
Bombax costatum Pellegr. & Vuillet (Malvaceae)	0.005	Root	Mac	Oral Cutaneous (bath)	E	[35]
Boscia albitrunca Gilg (Capparaceae)	0.002	Fruit (green)	Mac	Oral	E	[13; 26]
Bridelia cathartica G. Bertol (Euphorbiaceae)	0.002	Root	Fum	Nasal (inhale fume)	E	[9]
Bridelia cathartica G. Bertol (Euphorbiaceae)	0.002	Root	Dec + meat	Oral	He	[9]
Bridelia ferruginea Benth. (Euphorbiaceae)	0.003	Leaf	Dec	Oral	E	[10]
Bridelia ferruginea Benth. (Euphorbiaceae)	0.003	Bark & Leafy twigs	Dec	Oral or Cutaneous (bath)	He	[16]

Bridelia scleroneura Mull. Arg. (Euphorbiaceae)	0.005	Root	Dec	Oral	E	[7]
Bridelia scleroneura Mull. Arg. (Euphorbiaceae)	0.005	Leaf	Tri	Cutaneous (rubbed head)	He	[7]
Bridelia scleroneura Mull. Arg (Euphorbiaceae)	0.005	Leaf	Dec	Oral Cutaneous (bath)	E	[10]
Brillantaisia patula T. Anderson (Acanthaceae)	0.003	Leaf	Tri	Ocular Nasal	E	[23]
Brillantaisia patula T. Anderson (Acanthaceae)	0.003	Root	Dec	Cutaneous (bath with vapor)	E	[23]
Bryophyllum pinnatum (Lam.) Oken (Crassulaceae)	0.003	Leaf	Dec	Oral	E	[28]
Bryophyllum pinnatum (Lam.) Oken (Crassulaceae)	0.003	Leaf	Tri	Cutaneous (rubbed head)	He	[28]
Bulbine latifolia (L.f.) Roem. Et Schult. (Asphodelaceae)	0.001	Root	Mac or Alc	Oral	C	[28]
Burkea africana Hook. (Leguminosae-Caesalpinoideae)	0.005	Leaf	Dec	Cutaneous (rubbed head)	He	[17]
Burkea africana Hook. (Leguminosae-Caesalpinoideae)	0.005	Leaf & Bark	Dec	Oral (1glass) Nasal (inhale vapor)	He	[10]
Cajanus cajan (L.) Millsp (Leguminosae- Papilionoideae)	0.001	Leaf	Tri	Ocular	E	[33]
Calliandra portoricensis (Jacq.) Benth. (Leguminosae-Mimosoideae)	0.005	Root	Dec	Oral (1liqueur glass)	Ce & Cf	[10]
*Calliandra portoricensis (*Jacq.) Benth. (Leguminosae-Mimosoideae)	0.005	Leaf	Pow	Nasal (snif)	He	[7]
Calytrochilum christyanum (Orchidaceae)	0.001	Whole Plant	Ash	Intra-dermic (scarification)	C	[11]
Capparis erythrocarpos Isert (Capparaceae)	0.002	Leaf	Tri	Oral	Ce & Cf	[36]
Capparis erythrocarpos Isert (Capparaceae)	0.002	Root	Tri	Cutaneous (rubbed head)	He	[7]
Capparis viminea Hook. f. et Thoms. (Capparaceae)	0.001	Leaf	Tri	Oral	E	[23]
Capsicum annum ou *frutescens L.* (Solanaceae)	0.006	Leaf	Tri	Ocular	C	[35]
Capsicum annum ou *frutescens L.* (Solanaceae)	0.006	Seed	Tri + meat	Oral	Sti	[37]
Caralluma decaisneana Lem (Asclepiadaceae)	0.001	Leafy twigs	Dec	Oral	E	[24; 25]
Carissa edulis (Forssk) (Apocynaceae)	0.005	Root	Dec	Oral	He	[38]
Carissa edulis (Forssk) (Apocynaceae)	0.005	Root	Fum	Nasal (inhale fume)	M il	[39]
Carissa edulis (Forssk) (Apocynaceae)	0.005	Root	Pow	Intra-dermic (scarification)	He	[39]
Cassine transvaalensis (Burtt Davy) (Celastraceae)	0.001	Bark	Mac	Oral	C	[40]
Catunaregam nilotica (Stapf) Tirveng (Rubiaceae)	0.002	Root	Dec or Inf	Oral	C	[8]
Catunaregam nilotica (Stapf) Tirveng (Rubiaceae)	0.002	Root	Pow	Nasal (Snif)	E & Ins	[36]
Catunaregam spinosa (Thunb) (Rubiaceae)	0.003	Seed	Dec	Oral	He	[13; 26]
Catunaregam spinosa (Thunb) (Rubiaceae)	0.003	Root	Inf	Oral	E	[9]
Chamaecrista mimosoides (Leguminosae-Caesalpinoideae)	0.003	Leafy twigs	Alc	Oral	E	[10]
Chamaecrista mimosoides (Leguminosae-Caesalpinoideae)	0.003	Leaf	Pow	Oral	E	[10]
Chasmanthera dependens Hochst (Menispermaceae)	0.001	Leaf	Ash + black soap	Cutaneous (rubbed head)	C	[10]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leaf	Dec	Cutaneous (face bath)	C	[9]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leaf	Dec	Cutaneous Nasal (inhale vapor)	He	[32]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leaf	Dec	Oral	Ins	[32]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leaf	Dec	Nasal	M. il	[21]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leafy twigs	Dec	Cutaneous (bath)	Insomnia	[13]
Chenopodium ambrosioides L. (Chenopodiaceae)	**0.012**	Leaf	Fum	Nasal (inhale fume)	Ins	[9]
Clausena anisata (Willd) (Rutaceae)	**0.007**	Root	Dec	Oral	C	[41]

very effective						
Clausena anisata (Willd) (Rutaceae) very effective	**0.007**	Leaf	Tri	Nasal	He	[16]
Clausena anisata (Willd) (Rutaceae) very effective	**0.007**	Root	Dec	Oral	He & Mig	[7]
Clausena anisata (Willd) (Rutaceae) very effective	**0.007**	Root	Dec	Oral	E	[8]
Clausena anisata (Willd) (Rutaceae) very effective	**0.007**	Leaf	Tri	Cutaneous (rubbed face)	Ce	[8]
Cleome gynandra L (Capparaceae)	**0.007**	Leaf	Tri	Ocular & Nasal	E	[30]
Cleome gynandra L (Capparaceae)	**0.007**	Leafy twigs	Dec	Nasal (Snif)	He	[19]
Cleome gynandra L (Capparaceae)	**0.007**	Leaf	Dec	Oral & Ocular & Nasal	He	[15]
Cleome gynandra L (Capparaceae)	**0.007**	Leaf	Pow	Nasal (Snif)	He	[32; 9]
Cleome gynandra L (Capparaceae)	**0.007**	Leaf	Tri	Cutaneous (rubbed forehead)	Mig	[37]
Clerodendrum capitatum (Lamiaceae)	0.001	Leaf	Tri	Cutaneous (rubbed forehead	E	[30]
Clerodendrum polycephalum (Lamiaceae)	0.001	Leaf	Tri	Cutaneous (rubbed forehead)	E	[15]
Clerodendrum ternatum (Lamiaceae)	0.001	Root	Alc	Oral	E	[9]
Combretum glutinosum Perr. exDC. (Combretaceae)	0.002	Leaf	Mac	Oral	He	[19]
Combretum molle (Combretaceae)	0.003	Root	Inf	Oral	C	[9]
Combretum molle (Combretaceae)	0.003	Leaf	Dec	Nasal (instil)	He	[9]
Combretum ternifolium Engl. et Diels (Combretaceae)	0.001	Root	Dec	Cutaneous (bath)	C	[42]
Commelina benghalensi L. (Commelinaceae)	0.003	Leaf	Dec	Cutaneous (bath) Nasal (inhale vapour)	E	[32]
Conyza scabrida DC. (Asteraceae)	0.002	Leaf	Dec	Oral	C	[13]
Conyza scabrida DC. (Asteraceae)	0.002	Leaf	Pow	Nasal (Snif)	He	[13]
Conyza sumatrensis (Retz) E. Walker (Asteraceae)	0.002	Leaf	Tri	Nasal	E	[23]
Conyza sumatrensis (Retz) E. Walker (Asteraceae)	0.002	Leaf	Tri	Intra-dermic (Scarification /forehead)	He	[27; 23]
Coriandrum sativum L. (coriander) (Apiaceae)	0.001	Fruit	Dec	Oral	C	[43]
Costus afer Ker Gawl (Zingiberaceae)	0.002	Leaf	Tri	Nasal	He	[44]
Costus lucanisianus Braun-Blanq. Et K.Schum (Zingiberaceae)	0.002	Leafy twigs	Tri	Oral	E	[44]
Costus lucanisianus Braun-Blanq. Et K.Schum (Zingiberaceae)	0.002	Leaf	Tri	Nasal	In	[32]
Costus spectabilis (Fenzl) K.Schum (Zingiberaceae)	0.001	Leaf	Tri	Ocular	C & E	[10]
Cotyledon orbiculata (Crassulaceae)	0.001	Leaf	Tri	Oral ½ glass	E	[13,26,28]
Crassocephalum crepidioides (Benth.) S. Moore (Asteraceae)	0.001	Whole Plant	Tri	Oral	E	[23]
Crassocephalum vitellinum (Asteraceae)	0.001	Leaf	Dec	Cutaneous (bath) Ocular	E	[32]
Crateva adonsonii DC. (Capparaceae)	0.001	Leafy twigs	Mac	Oral	E	[10]
Crescentia cujete L. (Bigoniaceae)	0.002	Fruit and Leaf	Mac	Oral Cutaneous (envelop body)	C	[35]
Crossoperyx febrifuga (afzel.) Benth. (Rubiaceae)	0.001	Leafy twigs	Dec	Cutaneous	C	[10]
Crotalaria incana Subsp. Purpurascens (Lam) (Leguminosae-Papilionoideae)	0.001	Leafy twigs	Dec	Oral	E	[45]
Croton gratissimus var gratissimus Burch. (Euphorbiaceae)	0.001	Leaf	Dec	Oral	C	[7]
Croton haumanianus J. Léonard (Euphorbiaceae)	0.001	Bark (one handful + 1L)	Dec	Oral (2 glass /twice a day)	E	[33]
Crytopcarya latifolia Sond (Lauraceae)	0.001	Bark	Mac	Oral (one cupful)	C	[26]
Cucurbita pepo L. (Curcubitaceae)	0.005	Root	Pow	Intra-dermic (Scarification)	E	[46]
Curculigo pilosa (Scumach. Et Thonn) (Hypoxidaceae)	0.001	Root	Sau	Oral	E	[10]
Cussonia arborea Hochst. Ex A. Rich (Araliaceae)	0.003	Leaf	Dec	Cutaneous (bath)	Ee	[7]
Cussonia arborea Hochst. Ex A. Rich (Araliaceae)	0.003	Leaf	Inf	Cutaneous (bath face)	C	[9]
Cymbopogon schoenanthus (L.) Spreng (Poaceae)	**0.008**	Leafy twigs	Dec	Oral	Ce	[35]

Cymbopogon schoenanthus (L.) Spreng (Poaceae)	**0.008**	Leaf	Dec	Oral	Ce	[43]
Cyperus articulatus L. (Cyperaceae)	0.005	Root	Pow	Cutaneous (ointment)	He	[19]
Cyperus articulatus L. (Cyperaceae)	0.005	Root	Tri	Oral	He	[30]
Cyperus articulatus L. (Cyperaceae)	0.005	Root	Tri	Cutaneous (rubbed head)	Mig	[7]
Cyphostemma hildebrandtii (Vitaceae)	0.001	Root & Leaf	Tri	Oral Cutaneous (bath)	C	[8]
Dacryodes macrophylla H.J. (Burseraceae)	0.001	Bark	Dec	Cutaneous (bath)	Ce	[23]
Dactyloctenium aegyptium (L.) Willd (Poaceae)	0.001	Leafy twigs	Dec	Oral	C	[10]
Datura stramonim L. (Solanaceae)	0.005	Leaf	Alc	Oral (500 mL)	E	[21]
Datura stramonim L. (Solanaceae)	0.005	Leaf	Inf	Oral	Sed	[37]
Datura stramonim L. (Solanaceae)	0.005	Leaf	Tri	Cutaneous (rubbed head)	He	[13; 26]
Deinbollia borbonica Scheff (Sapindaceae)	**0.007**	Root	Dec	Oral	C	[8]
Deinbollia borbonica Scheff (Sapindaceae)	**0.007**	Root	Pow	Intra-dermic (Scarification)	He	[36]
Deinbollia borbonica Scheff (Sapindaceae)	**0.007**	Leaf	Sau / chicken	Oral	M il & He	[8]
Deinbollia borbonica Scheff (Sapindaceae)	**0.007**	Leaf	Ash	Cutaneous (head mask) Rectal	Ce	[8]
Deinbollia borbonica Scheff (Sapindaceae)	**0.007**	Leaf	Tri	Oral	C & E	[8]
Desmodium adscendens Sw. DC (Leguminosae-Papilionoideae)	0.006	Leaf	Dec	Cutaneous (bath)	E	[27]
Desmodium adscendens Sw. DC (Leguminosae-Papilionoideae)	0.006	Leaf	Mac	Cutaneous (bath)	C	[7]
Desmodium adscendens Sw. DC (Leguminosae-Papilionoideae)	0.006	Leaf, Bark & Root	Alc	Oral Cutaneous (face bath)	E	[23]
Desmodium adscendens Sw. DC (Leguminosae-Papilionoideae)	0.006	Leaf	Mac	Cutaneous (bath)	C et E	[39]
Desmodium asperum Desv. (Leguminosae-Papilionoideae)	0.001	Leaf, Bark & Root	Alc	Oral Cutaneous (bath)	E	[23]
Desmodium ramosissimum G.Don (Leguminosae-Papilionoideae)	0.001	Leaf, Bark & Root	Dec	Oral Cutaneous (bath)	E	[23]
Detarium microcarpum Guill. Et Perr (Leguminosae-Caesalpinioideae)	0.002	Root	Pow (in meal)	Oral	E	[35]
Dichrostachys cinerera (L.) wiight et Arn. (Leguminosae-Mimosoideae)	0.002	Root & Leafy twigs	Fum	Nasal	M. il	[19]
Diodia scandens Sw (Rubiaceae)	0.003	Leaf	Tri	Ocular	He	[24; 25]
Diodia scandens Sw (Rubiaceae)	0.003	Leafy twigs	Dec	Oral	Ins	[32]
Dioscorea dregeana (Kunth) (Dioscoreaceae)	0.002	Root	Dec	Oral	M.il	[13; 26]
Dioscorea dregeana (Kunth) (Dioscoreaceae)	0.002	Root	Dec	Oral	C	[13; 26]
Dioscorea sansibarensis Pax (Dioscoreaceae)	0.001	Root & Leaf	Inf	Oral	E	[23]
Dioscorea smilacifolia De wild (Dioscoreaceae)	0.001	Leaf	Tri	Intra-dermic (Scarification)	E	[16]
Dioscoreophyllum volkensii Engl (Menispermaceae)	0.001	Leaf or Root	Dec	Oral	C	[23]
Diospyros mespiliformis A. DC (Ebenaceae)	0.006	Seed	Dec	Oral	He	[47]
Diospyros mespiliformis A. DC (Ebenaceae)	0.006	Bark	Fum	Nasal (inhale fume)	He	[8]
Diospyros loureiriana G.Don subsp.loureirina (Ebenaceae)	0.002	Root	Dec	Oral	E	[8]
Diospyros loureiriana G.Don subsp.loureirina (Ebenaceae)	0.002	Root	Dec	Oral	M. il	[8]
Diospyros lycioides Desf. subsp.sericea (Benth.) De winter (Ebenaceae)	0.002	Root	Inf	Oral	E	[9]
Dissotis caloneura Gilg ex Engl. (Melastomataceae)	0.001	Leaf	Dec	Oral Nasal	E	[32]
Dissotis senegambiensis (Guill. Et Per.) (Melastomataceae)	0.002	Leafy twigs	Mac	Oral	E	[45]
Distemonanthus benthamianus Baill (Leguminosae-Caesalpinioideae)	0.001	Bark	Pow	Nasal (Snif / 2g)	E	[33[
Dombeya multiflora Mast (Malvaceae)	0.001	Bark	Mac	Oral	C	[29]
Dracaena arborea (willd.) Link	0.003	Leaf	Dec	Oral	E	[15]

(Dracaenaceae)					Ce	
Dracaena arborea (willd.) Link (Dracaenaceae)	0.003	Root	Dec	Oral	Ce	[15]
Dracaena arborea (willd.) Link (Dracaenaceae)	0.003	Leaf	Pow + black soap	Cutaneous (head bath)	He	[10]
Dracaena surculosa (Dracaenaceae)	0.001	Leaf	Tri	Oral Cutaneous (bath)	C	[15]
Dracaena usambarensis Engl. (Dracaenaceae)	0.001	Leaf & Root	Dec	Oral	E	[23]
Ehretia amoena Klotzsch (Boraginaceae)	0.001	Root	Dec	Oral	E & Cf	[8]
Ekebergia capensis Sparrm. (Meliaceae)	0.003	Bark	Inf	Oral	E	[7]
Ekebergia capensis Sparrm. (Meliaceae)	0.003	Root	Pow	Nasal	He	[16]
Ekebergia capensis Sparrm. (Meliaceae)	0.003	Bark	Pow	Nasal	He	[15]
Elettaria cardamomum Maton (Zingiberaceae)	0.001	Fruit and Seed	Dec	Oral	C	[48)
Eleusine indica (L.) Geartn. (Poaceae)	0.005	Leaf	Tri	Nasal	He	[15]
Emilia coccinea (Sims) G. Don (Asteraceae)	0.003	Leaf	Tri	Ocular	E	[18]
Endostemon gracilis benth.et Ashby (Lamiaceae)	0.001	Leaf	Dec	Nasal (inhale vapor)	C	[8]
Englerophytum magalismontamum Krause (Sapotaceae)	0.002	Root and Fruit	Mac	Oral	E	[13; 26]
Englerophytum magalismontamum Krause (Sapotaceae)	0.002	Root and Seed	Mac	Oral	He	[13; 26]
Entada abyssinica Steud. E A.Rich. (Leguminosae-Mimosoides)	0.002	Root	Dec	Oral (1 glass)	E	[20]
Entada abyssinica Steud. E A.Rich. (Leguminosae-Mimosoides)	0.002	Root	Dec	Ocular (1 drop/ eye)	He	[32]
Entada africana Guill. Et Perr. (Leguminosae-Papilionoides)	0.005	Seed	Dec or Mac	Nasal	He	[19]
Erythrina abyssinia Lam. Ex DC. (Leguminosae- Papilionoides)	0.002	Root	Dec	Nasal (inhale vapor)	He	[28]
Erythrophleum africanum (Leguminosae- Caesalpinioideae)	0.002	Root	Inf	Oral	Ins	[14]
Erythrophleum africanum (Leguminosae-Caesalpinioideae)	0.002	Bark	Mac	Oral Cutaneous (bath)	E	[49]
Euclea lanceolata E. Mey (Ebenaceae)	0.001	Root	Inf	Oral	E	[9]
Euclea divinorum Hiern (Ebenaceae)	0.002	Root	Pow	Oral	C	[9]
Euclea divinorum Hiern (Ebenaceae)	0.002	Root	Inf	Auricular	He	[9]
Euphorbia deightonii Croizat (Euphorbiaceae)	0.001	Whole Plant (burn)	Pow	Oral (1 tablespoon)	E	[10]
Euphorbia nyikae Pax (Euphorbiaceae)	0.001	Root or Latex	Dec or Tri	Oral	E	[8]
Euphorbia trigona Haw. (Euphorbiaceae)	0.001	Latex	Alc	Oral (some drop)	E	[23]
Exomis microphylla (Amaranthaceae)	0.001	Leaf	Dec + (milk)	Oral	E	[14]
Fadogia agrestis Schweinf. (Rubiaceae)	0.001	Whole Plant	Dec	Oral Cutaneous (bath)	Ce	[10]
Ficus mucuso Welw (Moraceae)	0.001	Latex	Tri	Oral	Ce	[23]
Ficus ovata Vahl (Moraceae)	0.001	Leaf	Dec	Oral	C	[10]
Ficus polita Vahl (Moraceae)	0.001	Leaf	Déc	Cutaneous (bath) 7 times/ day	Ce	[10]
Ficus sur Forssk. (Moraceae)	0.002	Bark-root	Dec	Oral	M. il	[10]
Flueggea virosa Baill (Euphorbiaceae)	**0.007**	Whole Plant	Dec	Nasal	He	[15]
Flueggea virosa Baill (Euphorbiaceae)	**0.007**	Leaf	Dec	Oral	M. il	[13,26]
Flueggea virosa Baill (Euphorbiaceae)	**0.007**	Root	Dec	Oral	E and C	[8]
Flueggea virosa Baill (Euphorbiaceae)	**0.007**	Leaf	Tri	Oral	E	[13,26]
Foeniculum vulgare Mill (Apiaceae)	0.002	Seed	Dec	Oral	C	[43, 48]
Foeniculum vulgare Mill (Apiaceae)	0.002	Whole Plant	Alc	Oral	Ce	[13,26]
Ganophyllum giganteum (A.Chev.) (Sapindaceae)	0.002	Bark	Mac	Oral Nasal	E and C	[23]
Ganophyllum giganteum (A.Chev.) (Sapindaceae)	0.002	Bark	Mac	Oral Nasal	In	[23]
Gardenia resiniflua Hiern (Rubiaceae)	0.005	Bark	Tri	Cutaneous (bath)	C	[9]
Gardenia resiniflua Hiern (Rubiaceae)	0.005	Root	Inf	Nasal	In	[9]
Gardenia resiniflua Hiern (Rubiaceae)	0.005	Leaf & Root	Inf	Ocular	He	[9]
Gardenia resiniflua Hiern (Rubiaceae)	0.005	Root	Dec	Oral	E	[9]

Gardenia ternifolia Schumach et Thonn. (Rubiaceae)	0.005	Root	Dec	Oral (2 cup + 2 spoon of millet meal	E	[23]
Gardenia ternifolia Schumach et Thonn. (Rubiaceae)	0.005	Root	Dec	Oral (2 cup + 2 spoon of millet meal)	M. il	[23]
Gardenia volkensii K. Schum. Susbp spatulifolia (Rubiaceae)	0.001	Bark	Dec	Cutaneous (bath)	C	[26]
Greenwaydendron suaveolens (Engl.et Diels) (Annonaceae)	0.002	Leaf or Bark	Tri	Nasal	E	[23]
Grewia bicolor Juss. (Malvaceae)	0.002	Root	Dec	Oral	C	[8]
Grewia bicolor Juss. (Malvaceae)	0.002	Bark	Mac	Oral	M.il Tra	[15]
Grewia forbesii Harv.ex Mast. (Malvaceae)	0.001	Root	Dec	Oral	Ce	[36]
Guarea laurentii De Wild (Meliaceae)	0.001	Root	Tri	Oral	Ce	[50]
Guizotia scabra (Visc.) (Asteraceae)	0.003	Whole Plant	Mac	Oral	C	[29]
Guizotia scabra (Visc.) (Asteraceae)	0.003	Leaf	Mac	Oral	Ins	[32]
Guizotia scabra (Visc.) (Asteraceae)	0.003	Leaf	Dec	Oral /Nasal	E	[32]
Gymnema sylvestre (Retz.) Schult (Apocynaceae)	0.001	Root	Pow in pooridge	Oral	E	[23]
Hallea stipulosa (DC.) J.-F. Levroy (Rubiaceae)	0.001	Root	Dec	Oral	Ce	[15]
Haplophyllum tuberculatum (Forssk.) A. Juss (Rutaceae)	0.001	Leafy twigs	Dec	Oral	C	[43; 48]
Harungana madagascariensis Lam. Ex Poir (Clusiaceae)	0.002	Leaf	Dec	Cutaneous (bath) / Nasal	E	[32]
Harungana madagascariensis Lam. Ex Poir (Clusiaceae)	0.002	Leaf	Tri	Cutaneous (head bath)	He	[30]
Heinsia crinta (Afzel) G.Taylor (« bush apple ») (Rubiaceae)	0.006	Leaf	Tri	Oral	E	[23]
Heinsia crinta (Afzel) G.Taylor (« bush apple ») (Rubiaceae)	0.006	Bark of root	Pow	Oral	E	[23]
Heinsia crinta (Afzel) G.Taylor (bush apple) subsp. parviflora (Rubiaceae)	0.006	Root	Dec	Oral	Cf	[36]
Heinsia crinta (Afzel) G.Taylor (bush apple) subsp. parviflora (Rubiaceae)	0.006	Leaf	Fum	Nasal (inhale fume)	Cf	[36]
Heinsia crinta (Afzel) G.Taylor (bush apple) subsp. parviflora (Rubiaceae)	0.006	Leaf	Tri	Cutaneous (rubbed head)	He	[11]
Heistera parvifolia Sm (Olacaceae)	0.002	Leaf	Dec	Cutaneous (bath)	Ce	[23]
Heistera parvifolia Sm (Olacaceae)	0.002	Leaf	Dec	Oral	He	[15]
Helichrysum odoratissimum (L.) Sweet (Asteraceae)	0.003	Leaf or Leafy twigs	Tri	Nasal	He	[26; 13]
Helichrysum odoratissimum (L.) Sweet (Asteraceae)	0.003	Leaf	Ash	Intra-dermic (scarifications)	Ins	[32]
Heisteria zimmereri Engl. (Olacaceae)	0.001	Leaf	Dec	Cutaneous (bath)	Ce	[23]
Helichrysum setosum Harv. (Asteraceae)	0.001	Leaf	Dec	Oral	E	[8]
Heliotropium indicum L. (Boraginaceae)	0.003	Bark	Dec	Oral	C	[51]
Heliotropium indicum L. (Boraginaceae)	0.003	Whole Plant	Dec	Oral	Ce	[52]
Hemizygia bracteosa (Benth) Briq (Lamiaceae)	0.001	Leaf	Pow + yolk	Oral	E	[9]
Hibiscus sabdariffa L. (Malvaceae)	0.001	Flowers (calices)	Dec	Oral	C	[48]
Hibiscus surattensis L. (Malvaceae)	0.002	Leafy twigs (fresh)	Dec	Oral (2 teaspoons)	C	[10]
Hibiscus surattensis L. (Malvaceae	0.002	Stem & Leaf	Dec	Oral	Mig	[45]
Hoslundia opposita Vahl. (Lamiaceae)	**0.010**	Leaf	Mac	Oral, Ocular	E	[16]
Hoslundia opposita Vahl. (Lamiaceae)	**0.010**	Root	Dec	Oral	Ee	[23]
Hoslundia opposita Vahl. (Lamiaceae)	**0.010**	Root	Inf	Cutaneous (bath)	E	[9]
Hygrophila auriculata (Schumach.) Heine (Acanthaceae)	0.005	Whole Plant	Dec	Oral	C	[29]
Hygrophila auriculata (Schumach.) Heine (Acanthaceae)	0.005	Whole Plant	Mac	Cutaneous (bath)	He	[30]
Hygrophila auriculata (Schumach.) Heine (Acanthaceae)	0.005	Leaf	Dec	Oral (2 teaspoons)	M. il	[21]
Hygrophila auriculata (Schumach.) Heine (Acanthaceae)	0.005	Leaf	Dec	Nasal (inhale vapor)	He	[30]
Hymenocardia acida Tul. (Euphorbiaceae)	**0.010**	Leaf	Dec	Cutaneous (bath)	C	[10]
Hymenocardia acida Tul. (Euphorbiaceae)	**0.010**	Bark	Dec	Cutaneous (bath) Per-lingual (mouth bath)	Mig	[23]

Hymenocardia acida Tul. (Euphorbiaceae)	**0.010**	Leaf	Dec	Oral or Nasal (Snif)	Ins	[32]
Hymenocardia acida Tul. (Euphorbiaceae)	**0.010**	Leaf	Pow	Nasal (Snif)	He	[7]
Hymenocardia acida Tul. (Euphorbiaceae)	**0.010**	Leaf	Dec	Nasal (inhale vapor)	He	[42]
Hymenocardia ulmonoides Oliv. (Euphorbiaceae)	0.002	Leaf	Inf	Oral	C	[53]
Hyptis pectinata (L.) Poit. (Lamiaceae)	0.003	Leaf	Inf	Oral	Sti	[11]
Hyptis pectinata (L.) Poit. (Lamiaceae)	0.003	Whole Plant	Dec	Oral + sugar	C	[54]
Hyptis suaveolens Poit (bush tea bush) (Lamiaceae)	0.005	Leaf (heating)	Tri	Nasal (instil) Cutaneous (Head bath)	He	[22]
Hyptis suaveolens Poit (bush tea bush) (Lamiaceae)	0.005	Leaf	Fum	Nasal (inhale fume)	He	[52]
Hyptis suaveolens Poit (bush tea bush) (Lamiaceae)	0.005	Leaf	Tri + urine mother	Cutaneous (bath)	Ce	[36]
Hyptis suaveolens Poit (« bush tea bush ») (Lamiaceae)	0.005	Stem and Leaf	Ash	Intra-dermic (scarifications)	E	[8]
Indigofera *arrecta* Hochst. Ex A. Rich (Leguminosae-Papilionoides)	0.002	Root	Pow	Intra-dermic (scarifications)	C	[9]
Indigofera arrecta Hochst. Ex A. Rich (Leguminosae-Papilionoides)	0.002	Bark- root	Dec	Oral	M. il	[8]
Indigofera atriceps Hook.f. (Leguminosae-Papilionoides)	0.001	Leaf	Dec	Cutaneous (bath) Nasal	E	[32]
Indigofera tinctoria L. (Leguminosae-Papilionoides)	0.001	Leaf	Tri + honey	Oral	E	[13]
Ipomoea asarifolia (Desr.) Roem. Et Schult. (Convolvulaceae)	0.003	Leaf	Tri + honey	Cutaneous (ointment)	C	[10]
Jatropa aethiopica (Euphorbiaceae)	0.001	Stem and Leaf	Dec	Oral	E	[10)
Jatropa curcas L. (Euphorbiaceae)	0.005	Leaf or Root	Inf	Oral	C	[24; 25]
Jatropa curcas L (Euphorbiaceae)	0.005	Root	Dec	Cutaneous (bath)	E	[32]
Jatropa curcas L. (Euphorbiaceae)	0.005	Leaf	Dec	Oral Cutaneous (bath)	Ce	[10]
Jatropa curcas L. (Euphorbiaceae)	0.005	Stem	Dec	Cutaneous (bath)	He	[10]
Jatropa gossypiifolia L. (Euphorbiaceae)	0.002	Stem	Tri	Nasal (Instil)	He	[11]
Justicia extensa T. Anderson (Acanthaceae)	0.001	Leaf	Tri	Cutaneous (rubbed in body)	Ce	[15]
Kalanchoe crenata (Andrews) Haw (Crassulaceae)	0.005	Leaf (heating)	Tri	Ocular Nasal	E	[55]
Kalanchoe crenata (Andrews) Haw (Crassulaceae)	0.005	Whole Plant	Tri	Nasal (Snif)	He	[50]
Kalanchoe laciniata (L.) DC. (Crassulaceae)	0.001	Root	Mac	Oral	E	[39]
Kalanchoe lateritia Engl Crassulaceae)	0.001	Leaf	Tri	Nasal	E Ce	[23]
Keetia gueinzii (Sond.) Bridson (Rubiaceae)	0.001	Leaf	Mac	Oral	E	[8]
Kigelia africana (Lam) Benth. (Bignoniaceae)	0.002	Bark	Dec	Oral	E	[8]
Kigelia africana (Lam) Benth. (Bignoniaceae)	0.002	Bark	Dec or Inf	Cutaneous (bath)	E	[9; 24; 25]
Landolphia owariensis P. Beauv. (Apocynaceae)	0.001	Leaf	Tri	Ocular Cutaneous (bath)	E	[23]
Lannea discolor (Sond.)Engl. (Anardiaceae)	0.001	Root	Inf or Mac	Cutaneous (bath)	C	[9; 13; 26]
Lannea nigritana (Scott-Elliot) Keay (Anardiaceae)	0.001	Bark	Dec	Oral	E	[15]
Lannea welwitschii (Hiern) Engl. (Anardiaceae)	0.001	Leaf	Pow	Cutaneous (ointment)	E	[23]
Lantana trifolia L. (Verbenaceae)	0.002	Leaf	Tri	Oral	Cf & Ce	[23]
Lantana trifolia L. (Verbenaceae)	0.002	Leaf	Tri	Nasal	He & Ins	[32]
Lantana viburnoides (Forssk.) Vahl (Verbenaceae)	0.001	Root	Dec	Oral	C	[8]
Launaea cornuta (Hochst. Ex Oliv et Hiern) C. Jeffrey (Asteraceae)	0.002	Leaf	Tri	Oral Cutaneous (rubbed residue body)	Ce	[8]
Launaea nana (Baker) (Asteraceae)	0.001	Root	Inf	Cutaneous (bath)	C	[9]
Leea guineensis G. Don (Vitaceae)	0.001	Leaf	Tri	Cutaneous (bath)	E	[16]
Leonotis leonurus (L.) R. Br (Lamiaceae)	0.002	Leaf	Fum	Nasal (Inhale fume)	E	[13; 28]

Leonotis leonurus (L.) R. Br (Lamiaceae)	0.002	Leaf	Tri	Nasal (Instil)	He	[13; 28]
Leptactina leopoldi secundi Buttner (Rubiaceae)	0.001	Leaf (1 handful/1L)	Dec	Oral (1 glass)	E	[33]
Limaciopsis loangensis Engl (Menispermaceae)	0.001	Root	Dec	Oral (1glass / 3times /day)	Ce	[33]
Lippia multiflora Moldenke (Verbenaceae)	0.002	Leaf	Dec	Oral	Sed & He	[10]
Lonchocarpus sericeus (Poir) H.B. et K. (Leguminosae-Papilionoides)	0.001	Bark	Tri	Cutaneous (bath) Ocular	C	[7]
Lonchocarpus bussei Harms (Leguminosae-Papilionoides)	0.001	Root	Dec	Oral	C	[23]
Lopholaena coriifolia (Sond) Phillips et C.A. Sm. (Asteraceae)	0.001	Root	Pow	Intra-dermic (scarification)	C	[9]
Loranthus sp. Parsite sur *Euphorbia matabelensis* (Loranthaceae)	0.001	Whole plant	Pow in porridge	Oral	E	[9]
Loranthus sp. Parasite sur *Vitex payos* (Loranthaceae)	0.001	Whole plant	Pow in porridge	Oral	C	[9]
Maerua angolensis DC. (Capparaceae)	**0.007**	Bark and Leaf	Fum	Nasal (fume)	Ce	[28]
Maerua angolensis DC (Capparaceae)	**0.007**	Root	Dec	Oral	E	[8]
Maerua angolensis DC (Capparaceae)	**0.007**	Leaf	Dec	Cutaneous (bath) or Oral	Ins	[10; 32]
Maerua angolensis DC (Capparaceae)	**0.007**	Leaf burned	Fum	Nasal (fume)	He	[28]
Maerua angolensis DC (Capparaceae)	**0.007**	Bark	Pow in porridge	Oral	E	[21]
Masea lanceolata Forssk. (Myrsinaceae)	0.003	Leaf	Mac (1tablespoon in water)	Oral (3 times/ day)	Ce Cf	[21]
Masea lanceolata Forssk. (Myrsinaceae)	0.003	Root	Dec	Oral	Ce	[30]
Mallotus oppositifolius (Geiseler) Mull. Arg (Euphorbiaceae)	0.006	Leaf (young)	Dec	Ocular or Nasal (inhale vapor)	He	[50; 7]
Mallotus oppositifolius (Geiseler) Mull. Arg (Euphorbiaceae)	0.006	Leaf	Tri	Nasal	He & M. il	[35]
Mallotus oppositifolius (Geiseler) Mull. Arg (Euphorbiaceae)	0.006	Leaf	Tri	Ocular	E	[23]
Mallotus oppositifolius (Geiseler) Mull. Arg (Euphorbiaceae)	0.006	Leaf (young)	Mac	Cutaneous (bandage head)	He & Sed	[17]
Mallotus oppositifolius (Geiseler) Mull. Arg (Euphorbiaceae)	0.006	Leaf and Root	Tri or Mac	Ocular or Oral Cutaneous (bandage)	C	[10]
Marantochloa leucantha (K.Schum) Mulne-Redh (Marantaceae)	0.001	Leaf	Tri or Pow	Oral	E	[15; 16]
Marantochloa purpurea (Ridl.)) Milne-Redh (Marantaceae)	0.001	Leaf	Dec	Oral	E	[15]
Markhamia obtusifolia (Baker) Sprague (Bignoniaceae)	0.001	Root	Tri	Oral	Ce	[56; 30]
Matricaria chamomilla (Asteraceae)	0.001	Flower	Dec	Oral	C and Ce & He	[43; 48]
Maytenus heteropylla (Eckl.et Zeyh.) N. Robson (Celastraceae)	0.001	Root	Dec	Oral	E	[13; 26]
Maytenus senegalensis (Lam). Exell (Celastraceae)	0.002	Root and Leaf	Inf	Oral Cutaneous (bandage)	E	[24; 25; 9]
Maytenus senegalensis (Lam). Exell (Celastraceae)	0.002	Leaf	Inf	Auricular or Nasal	Ins	[32]
Megaphrynium macrostachym (Benth.) Milne-Redh. (Marantaceae)	0.002	Leaf	Mac	Oral	E & Ins	[15]
Melaleuca leucadendron (L.) L. (Myrtaceae)	0.001	Leaf	Mac	Oral	C & Sti	[11]
Melia azedarach L. (Meliaceae)	0.002	Leaf (1 handful/ 2L)	Dec	Oral	E C & He	[26; 13]
Merremia xanthophylla Hallier f. (Convolvulaceae)	0.001	Root	Mac	Oral	C	[29]
Microdensmis keayana j. Léonard (Pandaceae)	0.002	Leaf	Tri	Nasal	E C	[15]
Microdensmis keayana j. Léonard (Pandaceae)	0.002	Leaf	Tri	Cutaneous (head bath)	Mig	[57]
Microglossa pyrifolia (Lam.) Kuntze (Asteraceae)	0.003	Root	Dec	Oral	E	[36]
Microglossa pyrifolia (Lam.) Kuntze (Asteraceae)	0.003	Leaf	Dec	Nasal (inhale vapor) or Oral Cutaneous (bath)	Ins	[32]
Microglossa pyrifolia (Lam.) Kuntze (Asteraceae)	0.003	Root	Mac or Pow	Oral or Nasal (Snif)	He	[30; 7]
Mikania cordata (Burm.)f. B.L. Rob.	**0.007**	Leaf	Tri	Ocular	E & He	[16; 50; 27]

(Asteraceae)						
Mikania cordata (Burm.)f. B.L. Rob. (Asteraceae)	**0.007**	Leaf (warm)	Tri	Cutaneous (rubbed head)	He	[33]
Mikania cordata (Burm.)f. B.L. Rob. (Asteraceae)	**0.007**	Leaf	Dec	Oral Nasal (inhale vapour)	He & Ins	[32; 30]
Mikania cordata (Burm.)f. B.L. Rob. (Asteraceae)	**0.007**	Leaf	Tri	Nasal (instil)	Mig	[24; 25]
Milicia excelsa (welw.) C.C. Berg (Moraceae)	0.001	Bark	Dec + milk	Oral	E	[10]
Millettia eetveldeana (Micheli) Hauman (Leguminosae-Papilionoideae)	0.001	Bark or Bark-root	Dec + kaolin	Oral (½ glass /threee times/day)	E	[33]
Millettia usaramensis Taub (Leguminosae-Papilionoideae)	0.001	Root	Dec	Oral	C	[8]
Mimosa pudica L. hispida Brenan (Leguminosae-Mimosoideae)	0.001	Leaf (young) and Stem	Dec	Oral	Ce & Insomnia	[26]
Mitracarpus hirtus (L.) DC (Rubiaceae)	0.002	Leaf (young)	Tri	Ocular	C	[10]
Mitragyna inermis (Willd.) Kuntze (Rubiaceae)	0.003	Leaf; Bark and Root	Dec	Oral Cutaneous (bath)	M. il	[58]
Mitragyna inermis (Willd.) Kuntze (Rubiaceae)	0.003	Bark	Dec	Oral	C	[51]
Momordica balsamina L. (Cucurbitaceae)	0.003	Stem and Leaf	Dec	Oral	C	[10]
Momordica balsamina L. (Cucurbitaceae)	0.003	Bark and Leaf	Dec	Oral	Tra	[19]
Momordica foetida Schumch. Et Thonn. (Cucurbitaceae)	0.003	Leaf	Mac	Cutaneous (bath)	C	[59]
Momordica foetida Schumch. Et Thonn. (Cucurbitaceae)	0.003	Leaf	Dec	Oral	Ins	[32]
Momordica foetida Schumch. Et Thonn (Cucurbitaceae)	0.003	Leaf	Mac	Oral	E	[45]
Monechma subsessile (Oliv.) C.B.Clarke (Acanthaceae)	0.001	Leaf	Mac	Oral	E	[45]
Monodora myristica (Gaertn.)Dunal (Annonaceae)	**0.007**	Seed	Tri	Cutaneous (rubbed forehead)	Mig	[18]
Monodora myristica (Gaertn.)Dunal (Annonaceae)	**0.007**	Seed	Inf	Cutaneous (rubbed forehead) Nasal (inhale vapour)	He & Mig	[23]
Moringa oleifera Lam (Moringaceae)	**0.008**	Root	Pow	Nasal (Snif)	He	[19]
Moringa oleifera Lam (Moringaceae)	**0.008**	Leaf and Root	Mac	Oral Cutaneous (bath)	He	[19]
Moringa oleifera Lam (Moringaceae)	**0.008**	Root	Dec	Oral	E	[11]
Moringa oleifera Lam (Moringaceae)	**0.008**	Root and Leaf	Dec	Oral Cutaneous (bath)	C	[10]
Moringa oleifera Lam (Moringaceae)	**0.008**	Leaf	Tri	Ocular	C	[10]
Moringa oleifera Lam (Moringaceae)	**0.008**	Leaf	Tri	Ocular	He & Hal	[10; 19]
Moringa oleifera Lam (Moringaceae)	**0.008**	Leaf	Tri	Cutaneous (rubbed temple)	He	[7; 10]
Mukia maderaspatana (L.) M. Roem. (Cucurbitaceae)	0.002	Semt and Leaf	Dec	Oral	Ce	[10]
Musanga cecropioides R.Br. ex Tedlie (Cecropiaceae)	0.001	Root	Mac	Oral	E & Ins	[23]
Myrica salicifolia Hochst. Ex A.Rich (Myricaceae)	0.002	Bark	Dec	Oral	C	[8]
Myrothamnus flabellifolia (Sond.) Welw (Myrothamnaceae)	0.006	Whole Plant	Pow in porridge	Oral Cutaneous (ointment)	E	[9]
Myrothamnus flabellifolia (Sond.) Welw (Myrothamnaceae)	0.006	Whole Plant	Ash	Cutaneous (rubbed head)	He	[30]
Myrothamnus flabellifolia (Sond.) Welw (Myrothamnaceae)	0.006	Whole Plant (burned)	Fum	Nasal (inhale fume)	Ins	[9]
Myrothamnus flabellifolia (Sond.) Welw (Myrothamnaceae)	0.006	Leaf	Dec	Oral	He	[9]
Myrothamnus flabellifolia (Sond.) Welw (Myrothamnaceae)	0.006	Whole Plant	Pow	Oral	Ins	[9]
Myrtus communis (Kloos) (Myrtaceae)	0.001	Leaf	Dec	Oral	C, He & Sed	[9]
Newbouldia laevis Seem. (Bignoniaceae)	0.006	Bark	Dec	Oral	Ce E	[16]
Nicotianum rustica L. (Solanaceae)	0.001	Leaf	Pow one teaspoon in porridge	Oral	E	[10]

Nicotianum tabacum L. (Solanaceae)	0.005	Leaf	Pow one teaspoon in porridge	Oral	E & C	[10]
Nicotianum tabacum L. (Solanaceae)	0.005	Leaf	Pow	Nasal (inhale fume)	E	[23]
Ocimum canum Sims (Lamiaceae)	**0.007**	Leaf	Inf	Cutaneous (bath) Nasal (inhale fume)	C	[9]
Ocimum canum Sims (Lamiaceae)	**0.007**	Leaf	Dec	Oral Cutaneous (bath)	C	[35]
Ocimum canum Sims (Lamiaceae)	**0.007**	Leaf	Mac	Oral	Ins	[35]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Tri	Nasal	He	[10]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Tri	Oral	E	[8]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Root	Dec	Oral	C	[8]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Fum	Nasal	He	[60]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Inf	Nasal (inhale vapor)	Ins	[32]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Inf	Oral	Ins	[60]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf (burned)	Fum + elehant faeces	Nasal	C	[8]
Ocimum basilicum L. (Lamiaceae)	**0.012**	Leaf	Tri	Oral/ Ocular Rectal, Cutaneous (bath)	C	[60]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Tri	Oral Ocular Rectal/ Cutaneous (bath)	Ce	[60]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Root and Leaf	Dec	Oral Cutaneous (bath)	C et E	[8]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Inf	Cutaneous (bath) Nasal (inhale vapor)	C	[9]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Tri (masticate leaf)	Oral	He	[18]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Dec	Oral Cutaneous (bath)	He	[59; 32,59; 32]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Dec	Nasal (inhale vapor)	Ins	[32]
Ocimum gratissimum L. (Lamiaceae)	**0.010**	Leaf	Tri	Nasal (inhale sap) and Cutaneous (rubbed head)	He	[59, 7,59, 7]
Oldenlandia corymbosa L. (Rubiaceae)	0.001	Whole Plant	Tri	Ocular (during the crisis)	E	[33]
Oliverella hidebrandtii (Engl.) Van Tiegh (Loranthaceae)	0.001	Leaf	Mac	Cutaneous (bath)	Ee	[30]
Oncoba welwitschii Oliv (Flacourtiaceae)	0.002	Leaf	Tri	Ocular Nasal	Ins	[55]
Oncostemum botryoides Baker (Myrsinaceae)	0.001	Root and Leaf	Dec	Oral Cutaneous (bath)	Ce	[54]
Oncosiphon piluliferum (L.f.) Kallerjo (Asteraceae)	0.001	Whole Plant	Mac	Oral	C	[13; 26]
Opilia celtidifola (Guill. Et Perr) (Opiliaceae)	0.005	Leaf	Ash	Intra-dermic (Scarification / temple)	He	[23]
Opuntia tuna (L.) Mill (Cactaceae)	0.001	Leaf	Dec	Oral	C Ce	[10]
Ormocarpum kirkii S. Moore (Leguminosae-Papilionoideae)	0.001	Root	Dec	Oral	E	[8]
Oxygonoum alatum Burch.Var. alatum (Polygonaceae)	0.001	Whole Plant	Dec	Cutaneous (bath)	Ee	[61]
Oxygonoum spp. (Zimbabwe) (Polygonaceae)	0.001	Root	Inf	Oral	C	[9]
Pachytrophe pygmaeum (Moraceae)	0.001	Root	Fum	Nasal (inhale vapor)	C	[9]
Paeonia officinalis (Paeoniaceae)	0.001	Root	Dec + honey	Oral	C & Ee	[43]
Parkia biglobosa (Jacq) R. Br ex Don (Leguminosae-Mimosoideae)	**0.007**	Root and Fruit	Dec	Oral Cutaneous (bath)	Ce E	[10; 62;10; 62]
Parquetina nigrescens (Afzel.) Bullock (Asclepiadaceae)	0.001	Root	Pow	Intra-dermic (Scarifications)	Ce	[62]
Passiflora foetida L. (Passifloraceae)	0.001	Leaf	Tri	Nasal	E	[32]
Pauridiantha dewevrei (De Wild. Et T. Durand) Bremek. (Rubiaceae)	0.001	Fruit	Mac	Cutaneous (bath)	Ce	[50]
Pavetta crassipes K. Schum. (Rubiaceae)	0.002	Root	Sau	Oral	C	[8]
Pavetta crassipes K. Schum. (Rubiaceae)	0.002	Leaf	Pow	Oral	M. il	[8]
Pavetta ternifolia (Oliv) Hiern (Rubiaceae)	0.001	Bark	Mac	Oral	E	[45]
Pellaea calomelanos (Sw.) Link (Pteridaceae)	0.003	Whole Plant	Inf or Fum	Oral or Nasal (inhale fume)	C	[9]
Pellaea calomelanos (Sw.) Link	0.003	Leaf	Fum	Nasal (inhale fume)	He	[13 , 26]

(Pteridaceae)						
Pellaea calomelanos (Sw.) Link (Pteridaceae)	0.003	Leaf	Ash	Nasal (Snif)	He	[13; 26]
Pentaclethra macrophylla Benth. (Leguminosae-Mimosoideae)	0.001	Leaf	Ash	Nasal	Ee	[24; 25]
Peperomia pellucida (L.) Kunth (Piperaceae)	0.001	Whole Plant	Inf	Oral	C	[11]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Leafy twigs	Dec	Oral	Ce	[10)10]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Leaf	Dec	Oral (1 bamboo glass/three times/day) Cutaneous (bath)	Ins	[16]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Bark	Inf	Oral	M. il	[7]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Bark	Inf	Cutaneous (head bath)	He	[7]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Leaf	Dec + local soap	Cutaneous (head bath)	Mig & He	[24; 25]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Bark	Dec	Oral	Ins	[11]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Root	Pow	Oral	Ins	[16]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae)	**0.011**	Root	Dec	Oral	He	[7]
Phoenix reclinata Jacq.(Senegal ou Wild date palm) (Arecaceae)	0.001	Root	Dec	Oral	E	[8]
Phyllanthus urinaria L (Euphorbiaceae)	0.001	Leaf	Mac + kaolin	Oral	C	[22]
Piliostigma reticulatum (DC) Hochst. (Leguminosae-Caesalpinoideae)	0.001	Leaf	Dec	Oral Cutaneous (bath)	E	[19]
Piliostigma thonningii (K. Schum) Milne-Redh (Leguminosae-Caesalpinoideae)	0.002	Leaf	Dec	Oral Cutaneous (bath)	E	[58]
Pimpinella anisum L. (Apiaceae)	0.001	Fruit	Dec	Oral	Ce	[48]
Pleiocarpa mutica Benth. (Apocynaceae)	0.001	Root or Leaf	Mac	Oral or Cutaneous (bath)	C	[15]
Plumbago zeylanica L. (Plumbaginaceae)	0.003	Stem and Leaf	Inf	Oral	E	[42]
Polygala ruwenzoriensis Chodat (Polygalaceae)	0.003	Leaf	Dec	Oral	E & He	[32]
Polygala ruwenzoriensis Chodat (Polygalaceae)	0.003	Leaf	Ash	Intra-dermic (scarifications)	Ins	[32]
Polygala ruwenzoriensis Chodat (Polygalaceae)	0.003	Leaf	Dec	Oral Nasal (inhale vapor) or Cutaneous (bath)	Ins	[32]
Portulaca oleracea L. (Portulacaceae)	0.003	Whole Plant	Dec	Cutaneous (rubbed body)	He	[18]
Portulaca oleracea L. (Portulacaceae)	0.003	Leaf	Tri	Cutaneous (rubbed forehead)	Ins	[23]
Premna chrysoclada(Bojer) Gurke (Lamiaceae)	0.005	Root	Dec	Oral	C	[8]
Premna resinosa (Hochst.) Schaumer (Lamiaceae)	0.001	Root	Mac	Oral	C	[17]
Protasparagus cooperi (Baker) Oberm (Asparagaceae)	0.006	Root	Pow	Intra-dermic (scarification)	C	[24; 25]
Protasparagus cooperi (Baker) Oberm (Asparagaceae)	0.006	Root	Mac	Oral	M. il	[30]
Protasparagus cooperi (Baker) Oberm (Asparagaceae)	0.006	Stem and Leaf	Mac	Oral Cutaneous (bath)	M. il	[10; 30]
Protasparagus cooperi (Baker) Oberm (Asparagaceae)	0.006	Leaf and Root	Inf	Oral	M.il	[24; 25]
Protea madiensis Oliv. (Proteaceae)	0.001	Root	Sau	Oral	E	[35]
Pseudocedrela kotschyi (Schweinf.) Harms(Meliaceae)	0.003	Bark	Mac	Cutaneous (bath)	E	[24; 25]
Pseudocedrela kotschyi (Schweinf.) Harms(Meliaceae)	0.003	Bark and Leaf (fresh)	Tri	Cutaneous (head bath)	Mig & He	[16]

Pseudolachnostylis maprouneifolia Pax (Phyllanthaceae)	0.002	Leaf	Inf	Cutaneous (bath)	C	[9]
Pseudolachnostylis maprouneifolia Pax (Phyllanthaceae)	0.002	Root	Pow	Nasal (Snif)	He	[9]
Psidiium guajava L. (« guava ») (Myrtaceae)	0.003	Leaf	Tri + urine of rat	Oral	E	[10]
Psidiium guajava L. (« guava ») (Myrtaceae)	0.003	Leaf and Stem	Inf	Oral	Ins	[37]
Psidiium guajava L. (« guava ») (Myrtaceae)	0.003	Fruit	Mac	Oral	Sti	[19]
Pteleopsis aff. Hylodendron Mildbr.(Combretaceae)	0.001	Leaf	Dec	Cutaneous (bath)	E	[23]
Pteris atrovirens Wild (Pteridaceae)	0.001	Leaf	Tri	Nasal	C of kid	[15]
Pycnostachys urticifolia Hook (Lamiaceae)	0.002	Root	Dec	Cutaneous (bath)	C	[9]
Pycnostachys urticifolia Hook (Lamiaceae)	0.002	Root	Pow in porridge	Oral	Ins	[9]
Ranunculus multifidus Forssk (Ranunculaceae)	0.006	Leafy twigs	Mac	Cutaneous (bath)	E	[32]
Ranunculus multifidus Forssk(Ranunculaceae)	0.006	Whole Plant	Fum	Nasal (inhale fume)	He	[32]
Ranunculus multifidus Forssk(Ranunculaceae)	0.006	Stem and Leaf	Dec	Nasal (inhale vapour)	He	[32]
Ranunculus multifidus Forssk(Ranunculaceae)	0.006	Leaf	Ash in porridge	Oral	Ins	[32]
Ranunculus multifidus Forssk(Ranunculaceae)	0.006	Leaf and Root	Dec	Oral	Ins	[32]
Raphiostylis beninensis (Hook.f.) Olanch (Icacinaceae)	0.001	Leaf	Dec	Oral	C	[7]
Rauvolfia obscura K. Schum. (Apocynaceae)	0.001	Bark	Tri	Ocular	E	[23]
Rauvolfia vomitoria Afzel (Apocynaceae)	**0.008**	Bark	Tri	Ocular	E	[23]
Rauvolfia vomitoria Afzel (Apocynaceae)	**0.008**	Root	Alc	Oral	M. il	[42]
Rauvolfia vomitoria Afzel (Apocynaceae)	**0.008**	Leaf	Dec	Cutaneous (bath)	C of kid	[24; 25]
Rauvolfia vomitoria Afzel (Apocynaceae)	**0.008**	Root	Dec	Oral	Ins & M. il	[7; 51; 10]
Rauvolfia vomitoria Afzel (Apocynaceae)	**0.008**	Root	Dec	Oral	C of kid	[23]
Renealmia spp. (Zingiberaceae)	0.001	Leaf	Tri	Cutaneous (bath)	E	[23]
Rhoicissus tridentata (L.f.) Wild et R.B. Drumm (Vitaceae)	0.001	Root	Dec	Oral	E	[13; 26]
Rhus longipes Engl. (Anacardiaceae)	0.002	Leafy twigs	Dec	Oral	Ce	[10]
Ricinus communis L (Euphorbiaceae)	**0.008**	Leaf (fresh)	Mac	Cutaneous (head bath)	He	[43]
Ricinus communis L (Euphorbiaceae)	**0.008**	Leaf	Inf	Oral	Ins	[9]
Ricinus communis L (Euphorbiaceae)	**0.008**	Seed	Tri	Cutaneous (ointment)	C	[9]
Rubus pinnatus Willd. (Rosaceae)	0.001	Root	Dec	Oral	C	[13; 26]
Rubus rigidus Sm. (Rosaceae)	0.001	Root	Dec	Oral (1 tasse /daily)	E	[20]
Ruta graveolens L. (Rutaceae)	0.001	Leaf	Dec	Oral	E et Ce	[13; 28]
Salvia stenophylla Burch. Ex Benth. (Lamiaceae)	0.001	Leaf and Flow	Inf	Oral	C	[14]
Sansevieria bagamoyensis N.E.Br. (Asparagaceae)	0.001	Leaf	Tri	Oral Cutaneous (rubbed body)	Cf	[10]
Sansevieria liberica Gerard et Labr.	0.002	Leaf	Fum	Nasal (inhale fume)	He	[11]
Scinus molle L. (Anarcadiaceae)	0.002	Bark	Mac	Cutaneous (head bath)	C	[63]
Scinus molle L. (Anarcadiaceae)	0.002	Leaf	Mac	Oral or Nasal	He	[13; 26]
Schwenckia americana L. (Solanaceae)	0.002	Leafy twigs	Ash	Oral (during crisis)	Cf	[58]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Mac	Oral	C & Psycoactive effect	[35; 24; 25]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Tri	Cutaneous (rubbed forehead and nuck)	He	[30]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Pow in porridge	Oral	E & C	[9]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Pow	Intra-dermic (scarification)	He & Ins	[13]

Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Bark	Pow	Nasal (Snif)	Ce	[8]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Pow	Nasal (Snif)	He & Mig	[19,24,25,64]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Root	Tri or Dec	Nasal (Instil in nose) or Nasal (inhale vapor)	M. il	[21]
Securidaca longepedunculata Fresen. (Polygalaceae)	**0.020**	Bark	Fum	Nasal (inhale fume)	Ins	[24; 25]
Senecio cydoniifolius O. Hoffn (Asteraceae)	0.001	Leaf	Inf	Cutaneous (rubbed body)	C	[8]
Senna alexandrina Mill. (Leguminosae-Caesalpinoideae)	0.001	Leaf	Inf	Oral	C	[48]
Senna didymobotrya (Fresen.) H.S. Irwin et Barneby (Leguminosae-Caesalpinoideae)	0.005	Root	Fum	Nasal (inhale fume)	Ins	[32]
Senna didymobotrya (Fresen.) H.S. Irwin et Barneby (Leguminosae-Caesalpinoideae)	0.005	Bark	Inf	Oral	Ins	[32]
Senna didymobotrya (Fresen.) H.S. Irwin et Barneby (Leguminosae-Caesalpinoideae)	0.005	Root	Dec	Oral	C	[9]
Senna occidentalis (L.) (Leguminosae-Caesalpinoideae)	0.003	Leaf	Dec	Nasal (inhale vapor)	C	[10]
Senna occidentalis (L.) (Leguminosae-Caesalpinoideae)	0.003	Leaf	Tri	Ocular	He	[10]
Senna petersiana (Bolle) Lock (Leguminosae-Caesalpinoideae)	0.005	Leaf	Dec	Nasal (inhale vapor)	He	[8]
Senna petersiana (Bolle) Lock (Leguminosae-Caesalpinoideae)	0.005	Root	Dec	Oral	He	[8]
Sesamothamus lugardii N.E. Br. (Pedaliaceae)	0.001	Leaf	Tri & Fum	Cutaneous (face bath) Nasal (inhale fume)	C	[9]
Sesbania sesban (L.) Merr. Subsp. sesban. Var zambesiaca Gillett (Poaceae)	0.001	Leaf	Pow (2 tablespoon)	Oral	Ce & Cf	[21]
Setaria barbata (Lam.) Kunth (Poaceae)	0.001	Whole Plant	Tri	Cutaneous (rubbed head and body)	E	[23; 31]
Setaria megaphylla (Steud.) T. Durand et S. (Poaceae)	0.001	Leaf	Dec	Oral Cutaneous (bath)	Ce E	[15]
Solanum dasyphyllum Schumach. Et thonn (Solanaceae)	0.001	Root and Leaf	Mac (2 tablespoon)	Oral	E	[21]
Solanum lycopersicum Mill. (« Tamato ») (Solanaceae)	0.005	Leaf	Mac	Oral	He	[32]
Solanum lycopersicum L. (Tomato) (Solanaceae)	0.005	Laef (fresh)	Tri	Nasal (instil in nose)	He	[33]
Solanum incanum L. (Solanaceae)	0.002	Fruit	Tri	Cutaneous (bath)	E	23]
Solanum incanum L. (Solanaceae)	0.002	Leaf	Inf	Intra-dermic (Scarification)	He	[23]
Solanum scabrum (Solanaceae)	0.001	Leaf	Sau	Oral	C	[42]
Solanum torvum Sw. (Solanaceae)	0.002	Leaf	Tri	Ocular	E	[23]
Solanum torvum Sw. (Solanaceae)	0.002	Whole Plant	Tri	Oral	Sed	[24; 25]
Solenostemma oleifolium (Nect.) Bull. et Bruce (Asclepiadaceae)	0.001	Leafy twigs	Dec	Oral	C	[43; 48]
Solenostemon monostachyus (P. Beauv) (Lamiaceae)	0.003	Leafy twigs	Tri	Cutaneous (bath)	C	[10]
Solenostemon monostachyus (P. Beauv) (Lamiaceae)	0.003	Whole Plant	Dec	Oral Ocular	Ce	[23]
Solenostemon monostachyus (P. Beauv) (Lamiaceae)	0.003	Leaf	Dec	Oral	Ins	[33]
Sphenocentrum jollyanum Pierre (Menispermaceae)	0.001	Root	Pow	Oral Cutaneous (bath)	E	[15]
Spondias mombin L. (Anacardiaceae)	0.003	Leaf	Tri	Oral	He	[10]
Steganotaenia araliacea Hochst. (Apiaceae)	0.006	Root	Inf	Oral	E	[9]
Steganotaenia araliacea Hochst. (Apiaceae)	0.006	Leaf	Tri	Oral	C of kid	[7]
Steganotaenia araliacea Hochst. (Apiaceae)	0.006	Root and Leaf	Dec	Oral (250mL twice daily or every 4 hours)	E & M.il	[21; 7]
Steganotaenia araliacea Hochst. (Apiaceae)	0.006	Root and Leaf	Pow	Intra-dermic (scarification)	Ce & He	[7]
Steganotaenia araliacea Hochst. (Apiaceae)	0.006	Leaf; stem bark & Root	Dec	Oral Cutaneous (vapor bath or enema)	Ins	[32]
Sterculia africana (Lour.) (Malvaceae)	0.001	Root	Dec	Oral	C	[40]
Stereospermum kunthianum cham.	0.003	Root	Dec	Oral	He	[8]

(Bignoniaceae)				Cutaneous (bath)		
Stylosanthes erecta P. Beauv(Leguminosae-Papilionoideae)	0.005	Leafy twigs	Dec	Cutaneous (bath)	Ins	[35]
Stylosanthes erecta P. Beauv (Leguminosae-Papilionoideae)	0.005	Leafy twigs (fresh)	Tri	Cutaneous (rubbed head)	He	[35]
Sutera atropurpurea (Benth.) Hiern (Scrophulariaceae)	0.001	Flower	Mac	Oral	Ce	[14]
Swartzia madagascariensis Desv. (Leguminosae-Papilionoideae)	0.002	Root & Fruit	Inf	Oral Cutaneous (bath) Intra-dermic (scarification)	C	[9]
Swartzia madagascariensis Desv. (Leguminosae-Papilionoideae)	0.002	Fruit	Tri	Intra-dermic (scarification of fontanel)	He	[9]
Synaptolepis kirkii oliv. (Thymelaeaceae)	0.001	Root	Mac	Oral	E	[13]
Tapinanthus bangwensis (Engl. et Krause) (Loranthaceae)	0.001	Leafy twigs	Pow in porridge	Oral Intra-dermic (scarifications)	C	[35]
Terminalia stenostachya (Combretaceae)	0.001	Root	Dec	Oral	E	[9]
Tetrapleura tetraptera (Schumach. Et Thonn.) Taub (Leguminosae-Mimosoideae)	0.002	Fruit	Dec	Oral	Ce	[35]
Thaumatococcus danielii (Bennett) Benth. (Marantaceae)	0.003	Leaf	Dec	Oral	E & Sed	[15]
Thaumatococcus danielii (Bennett) Benth. (Marantaceae)	0.003	Root	Dec	Oral	Ins & Sed	[23]
Tinnea barteri Gurke (Lamiaceae)	0.001	Leaf	Dec	Oral	C	[10; 32]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leaf	Dec	Oral	E	[23]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leaf	Tri or Inf	Oral	Ins	[32]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leaf and Bark	Dec	Oral Cutaneous (bath)	C & Ins	[32][32]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leafy twigs	Dec	Oral	Ce	[10]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leaf	Tri	Oral Ocular Cutaneous (rubbed head)	He	[33]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leaf and Bark	Pow	Oral	He	[32]
Trema orientalis (L.,) Blurne (Celtidaceae)	**0.008**	Leafy twigs (2 handful)	Tri	Oral (1 liqueur glass)	E	[10]
Tribulus terrestris L. (Zygophyllaceae)	0.001	Leaf	Fum	Nasal	C	[10]
Trichilia emetica Vahl subsp. Suberosa J.J. De Wilde (Meliaceae)	**0.008**	Root	Dec	Oral	C	[10]
Trichilia emetica Vahl subsp. Suberosa J.J. De Wilde (Meliaceae)	**0.008**	Root& Leafy twigs	Dec	Cutaneous (bath)	Insomnia	[10]
Trichilia emetica Vahl subsp. Suberosa J.J. De Wilde (Meliaceae)	**0.008**	Leaf	Mac or Dec	Oral Cutaneous (bath)	Cf	[10]
Trichilia emetica Vahl subsp. Suberosa J.J. De Wilde (Meliaceae)	**0.008**	Bark of root	Dec	Cutaneous (bath)	C	[10]
Triclisia patens Oliv (Menispermaceae)	0.001	Leaf or Stem	Dec	Oral Cutaneous (bath)	E	[15; 24; 25]
Trigonella foenum-graecum L. (Leguminosae- Papilionoideae)	0.001	seed	Pow or Dec	Oral	C	[43; 48]
Triplotaxis stellulifera (Benth.)Hutch. (Asteraceae)	0.001	Leaf	Tri	Ocular Cutaneous (bath)	Ce	[23]
Triumfetta rhomboidea Jacq. (Malvaceae)	0.002	Root	Inf or Dec	Oral	C	[8]
Triumfetta rhomboidea Jacq. (Malvaceae)	0.002	Leafy twigs	Dec	Oral Cutaneous (head bath)	He	[32]
Trochomeria macrocarpa (Sond.) Hook. F (Cucurbitaceae)	0.001	Root	Mac	Oral	C	[29]
Turraea nilotica Kotschy et Peyr. (Meliaceae)	0.005	Root	Pou	Oral	E	[9]
Turraea nilotica Kotschy et Peyr. (Meliaceae)	0.005	Leaf	Inf	Oral	Ins & He	[9]
Turraea nilotica Kotschy et Peyr. (Meliaceae)	0.005	Leaf (burned)	Fum	Nasal (inhale fume)	Ins	[9]
Turraea nilotica Kotschy et Peyr. (Meliaceae)	0.005	Root	Pow	Intra-dermic (Scarification)	He	[9]
Turraeanthus africanus (C. DC.) Pellegr .(Meliaceae)	0.001	Bark	Mac	Oral	E	[15]

Uncaria letocladon Oliv. (Rubiaceae)	0.001	Leafy twig	Dec	Oral	E	[56]
Uvaria acuminata Oliv. (Annonaceae)	0.001	Root	Dec	Oral	Ce & M. il	[36]
Uvaria afzelii Scott-Ellot (Annonaceae)	0.001	Leaf	Tri	Ocular	E	[15]
Uvaria chamae P. Beauv (Annonaceae)	0.003	Root	Pow	Oral	He	[10]
)Uvaria chamae P. Beauv (Annonaceae)	0.003	Leaf (fresh)	Tri	Cutaneous (rubbed head)	He	[10]
Valeriana capensis Thumb.(« Cape valerian) (Valerianaceae)	0.003	Root	Inf	Oral	E	[28; 13]
Valeriana capensis Thumb.(« Cape valerian) (Valerianaceae)	0.003	Root	HE	Oral	C	[28; 13]
Vangueria madagascariensis F.F. Gmel (Rubiaceae)	0.001	Bark	Dec	Oral	C	[8]
Vernonia colorata (Wild.) Drake (Asteraceae)	0.001	Leaf and Flower	Dec	Nasal (inhale vapor)	E	[19]
Vernonia hildebrandtii Vatke (Asteraceae)	0.001	Root	Dec	Oral	Ce & M il	[8; 36]
Vernonia hochstetteri A. Rich. (Asteraceae)	0.001	Whole Plant	Dec	Oral	E	[30]
Vernonia lasipous O. Hoffm. (Asteraceae)	0.001	Whole Plant	Dec	Oral	E	[56]
Vernonia neocorymbosa Hilliard (Asteraceae)	0.001	Leaf	Mac	Oral	E	[26; 13]
Vigna unguiculata (L.) Walp. (Leguminosae-Papilionoideae)	0.002	Leaf	Pow	Nasal (Snif)	He	[26; 30]
Vigna unguiculata (L.) Walp. (Leguminosae-Papilionoideae)	0.002	Root	Inf	Oral	E	[9]
Vitex doniana Sweet (Lamiaceae)	0.005	Bark	Tri	Ocular (during flits)	E	[23]
Vitex doniana Sweet (Lamiaceae)	0.005	Leaf	Dec	Cutaneous (head bath)	He	[58]
Vitex rivularis Gurke (Lamiaceae)	0.002	Bark	Mac	Cutaneous (bath)	E	[23]
Vitex rivularis Gurke (Lamiaceae)	0.002	Leaf	Inf	Oral	E	[23]
Vitex thyrsiflora Baker (Lamiaceae)	0.002	Whole Plant	Tri	Cutaneous (bath)	E	[23]
Vitex thyrsiflora Baker (Lamiaceae)	0.002	Root	Pow	Intr-dermic (scarifications)	E	[23]
Voacanga africana Stapf (Apocynaceae)	0.003	Leaf	Tri	Cutaneous (applied as a salve)	Ce	[15]
Voacanga africana Stapf (Apocynaceae)	0.003	Root (10g)	Mac	Oral	E	[10]
Voacanga africana Stapf (Apocynaceae	0.003	Leaf	Tri	Nasal (instil /nostrils)	Ins	[10]
Waltheria indica L (Malvaceae)	0.002	Leaf	Dec	Nasal	Ce	[36]
Waltheria indica L (Malvaceae)	0.002	Twig Leafy	Dec	Oral (one glass) Nasal) (inhale vapor)	He	[10]
Withania somnifera (L.) Dunal (« Indian ginseng) (Solanaceae)	0.002	Root	Dec	Oral	E	[13; 26]
Withania somnifera (L.) Dunal (« Indian ginseng) (Solanaceae)	0.002	Leaf or Twig Leafy	Dec	Oral	Ins	[32]
Xeromphis obovata S. Moore (Rubiaceae)	0.005	Bark	Dec	Oral	E	[23]
Xeromphis obovata S. Moore (Rubiaceae)	0.005	Leaf and Root	Dec	Oral	E	[23]
Xeromphis obovata S. Moore (Rubiaceae)	0.005	Root or Stem Bark	Dec	Oral	Ins	[23]
Ximenia americana (Oleaceae)	0.006	Root	Dec	Oral	Ce	[8]
Ximenia americana (Oleaceae)	0.006	Root (fresh)	Tri	Cutaneous (rubbed forehead)	He	[11]
Xylopia arenaria Engl (Annonaceae)	0.001	Root	Dec + milk	Oral	Ce	[8]
Xylopia aethiopica (Dunal) A.Rich (Annonaceae)	**0.013**	Seed	Tri	Cutaneous (rubbed forehead)	He	[8.]
Xylopia aethiopica (Dunal) A.Rich (Annonaceae)	**0.013**	Seed	Dec	Oral	Sti	[58]
Xylopia aethiopica (Dunal) A.Rich (Annonaceae)	**0.013**	Leaf	Fum	Nasal (inhale /fume)	He	[23]
Xylotheca tettensis Gilg var. fissistyla (Warb.) (Achariaceae)	0.001	Root	Dec	Oral	Cf	[8]
Zanha africana (Radlk.) Exell (Sapindaceae)	0.006	Root	Mac	Oral	E	[20]
Zanha africana (Radlk.) Exell (Sapindaceae)	0.006	Root	Dec	Cutaneous (bath)	He	[9]

Zanha africana (Radlk.) Exell (Sapindaceae)	0.006	Root	Pow	Intra-dermic (scarification / temple)	He	[49; 9]
Zanthoxylum chalybeum Engl (Rutaceae)	0.001	Root	Inf	Cutaneous (bath)	C	[8]
Zanthoxylum holtzianum (Engl). P.G. Waterman (Rutaceae)	0.001	Bark	Pow	Oral	C	[8]
Ziziphus mucronata Lam. (Rhamnaceae)	0.002	Root	Dec	Oral	E	[11]
Ziziphus spina-christi (L.) Desf. (Rhamnaceae)	0.001	Seed	Tri	Oral	C	[65]
Zornia glochidiata Rchb. Ex DC. (Leguminosae-Papilionoideae)	0.001	Whole Plant	Tri	Ocular	E	[23]
Zornia latifolia Sm. (Leguminosae-Papilionoideae)	0.001	Whole Plant	Tri	Ocular	E	[23]
Zygophyllum morgsana L. (Zygophyllaceae)	0.001	Seed	Pow	Oral	C	[13]

Inf: Infusion; Dec: Decotion; Mac: Maceration with water; Alc: Alcolature (maceration with local liqueur); Pow: Powder; Trit: Trituration or pound or pulverize; Fum: Fumigation; Cc: Convulsions of children; E: Epilepsy; Cf: Convulsion of fever; He: Headache; Ins: Insanity; M.il: Mental illness or disorders; Hal: Hallucinations; Mig: Migraine; Sti: Stimulant; Tra: Tranquilisant; Sed: Sedatif

3.7 Most used medicinal plants

The importance of plants has been materialized by their usual value (Table 2 and 3). For this study we set the usual value threshold at 0.006 ie that these plants participate in at least five different recipes. On this basis, forty-one of these plants proved to be more important than others. It is *Xylopia aethiopica* Dunal A. Rich. (Annonaceae), *Hoslundia opposita* (Lamiaceae), *Aframomum melegueta* (Zingiberaceae), *Securidaca longepedunculata* Fresen (Polygalaceae), *Ocimum basilicum* (Lamiaceae), *Rauvolfia vomitoria* (Apocynaceae), *Clausena anisata* (Willd) (Rutaceae), *Trichilia emetica* Vahl subsp. Suberosa JJ De Wilde (Meliaceae), *Cymbopogon schoenanthus* (Poaceae), *Afzelia africana* Smith (Leguminosae-Caesalpinoideae), *Deinbollia borbonica* Scheff, *Chenopodium ambrosioides* L. (Chenopodiaceae), *Cleome gynandra* L (Capparaceae), *Amaranthus spinosus* L (Amaranthaceae), *Capsicum annum* (Solanaceae), *Desmodium adscendens* Sw. DC (Leguminosae-Papilionoideae), *Diospyros mespiliformis* A. DC (Ebenaceae), *Heinsia crinta* (Afzel) G.Taylor ("bush apple") (Rubiaceae), *Hymenocardia acida* Tul. (Euphorbiaceae), *Maerua angolensis* DC. (Capparaceae), *Mallotus oppositifolius* (Geiseler) Mull. Arg (Euphorbiaceae), *Monodora myristica* (Gaertn.) Dunal (Annonaceae), *Moringa oleifera* Lam (Moringaceae), *Allium cepa* (Amaryllidaceae), *Myrothamnus flabellifolia* (Sond.) Welw (Myrothamnaceae), *Newbouldia laevis* Seem. (Bignoniaceae), *Ocimum canum* Sims (Lamiaceae), *Ocimum gratissimum* L. (Lamiaceae), *Flueggea virosa* Baill (Euphorbiaceae), *Trema orientalis* (L.), Blurne (Celtidaceae), *Garcinia kola* (Clusiaceae), *Pericopsis laxiflora* (Benth. Baker) Meeuwen (Leguminosae-Papilionoideae), *Parkia biglobosa* (Jacq) R. Br ex Don (Leguminosae-Mimosoideae), *Protasparagus cooperi* (Baker) Oberm (Asparagaceae), *Ranunculus multifidus* Forssk (Ranunculaceae), *Ricinus communis* L (Euphorbiaceae), *Steganotaenia araliacea* Hochst. (Apiaceae), *Ximenia americana* (Oleaceae), *Zanha africana* (Radlk.) Exell (Sapindaceae), *Vitellaria paradoxa* (Sapotaceae), *Citrus lemon* (Rutaceae), *Argemone mexicana* L. (Papaveraceae), *Elaeis guineensis* (Arecaceae).

Table 3: Poly-specific Medicinal Recipes

Vegetal Species	Usuel Value (UV)	Part of employer	Mode of preparation	Administration pathways	Disorders or pharmacology effects	Reference
Abrus precatorius L. (Leguminosae-Papilionoideae) *Zingiber officinale* (Zingiberaceae)	0.005 0.001	Leaf Root	Tri	Oral	He	[7]
Acacia kamerunensis Gand (Leguminosae-Mimosoideae) *Garcinia kola* (Clusiaceae)	0.001 **0.007**	Leaf Seed	Mac	Oral	**E**	[23]
Acacia nigrescens Oliv. (Leguminosae-Mimosoideae) *Elaeis guineensis* (Arecaceae)	0.001 **0.017**	Root Vegetal oil	Pow + palm oil	Cutaneous (Ointment)	C	[9]
Acacia polyacantha Willd.Subsp campylacantha Leguminosae-Mimosoideae) *Erythrina abyssinica* (Leguminosae-Papilionoideae)	0.001 0.002	Root Root	Dec	Intra-dermic (scarifications) Oral (during crisis)	E	[21]
Acacia sieberiana DC (Leguminosae-Mimosoideae) *Securidaca longepedunculata* (Polygalaceae)	0.002 **0.020**	Leafy twigs Root	Dec	Cutaneous (bath)	C	[10]
Acalypha vilicaulis Hochst (Euphorbiaceae) *Plumbago zeylanica* (Plumbaginaceae)	0.001 0.003	Leaf Root	Mac	Oral	E	[21]
Acanthospermum hispidum DC (Asteraceae) *Combretun glutinosum* (Combretaceae)	0.003 0.002	Leafy twigs Leafy twigs	Dec	Oral Cutaneous (bath)	E	[10]

Acanthospermum hispidum DC (Asteraceae) *Aframomum melegueta* (Zingiberaceae)	0.003 **0.013**	Leaf Fruit	Tri	Ocular	C	[10]
Aframomum melegueta (Zingiberaceae) *Erythrina senegalensis* (Leguminosae-Papilionoideae)	**0.013** 0.001	Leaf Leaf	Tri	Ocular	Hal	[10]
Acanthus arboreus (Acanthaceae) *Cucumis aculeatus* (Cucurbitaceae)	0.002 0.002	Leaf Leaf	Mac	Oral	M.il	[21]
Acanthus arboreus (Acanthaceae) *Cucumis aculeatus* (Cucurbitaceae) *Dichrostachys integriffolia* (Asteraceae)	0.002 0.002 0.002	Leaf Leaf Leaf	Mac	Oral (125 mL)	E	[45]
Afzelia africana Smith (Leguminosae-Caesalpinoideae) *Lepidagathis anobrya* (Acanthaceae)	**0.007** 0.001	Root Root	Pow	Oral	C	[10]
Afzelia africana Smith (Leguminosae-Caesalpinoideae) *Securidaca longepedunculata* (Polygalaceae) *Vitex doniana* Sweet (Lamiaceae) *Smilax anceps*(Smilacaceae)	**0.007** **0.020** 0.005 0.001	Stem & Leaf Root Bark Stem & Leaf	Dec	Oral Cutaneous (bath)	Ins	[10]
Afzelia africana Smith (Leguminosae-Caesalpinoideae) *Burkea africana* (Leguminosae-Caesalpinoideae) *Cyanotis lanata* (Commelinaceae)	**0.007** 0.005 0.001	Leaf Leaf Leaf	Dec	Oral	E	[10]
Agelaea pentagyna (Connaraceae) *Vitellaria paradoxa* (Sapotaceae)	0.001 0.006	Leafy twigs Shea butter	Dec	Oral	C	[10]
Agelanthus dodoneifolius (DC) Polhill (Loranthaceae) *Cienfuegosia heteroclada* (Malvaceae) *Piliostigma thonningii* (Leguminosae-Caesalpinoideae)	0.002 0.001 0.002	Leafy twigs Leafy twigs Leaf	Dec	Oral Cutaneous (bath)	Cf Ins	[10]
Alchornea cordifolia (Schumach. &Thonn.) (Euphorbiaceae) *Rauvolfia vomitoria* (Apocynaceae) *Tristemma mauritianum* (Melastomataceae)	0.003 **0.008** 0.001	Leaf Root Leaf	Dec	Oral Nasal	E	[57]
Allium sativum L. (Amaryllidaceae) *Canthium glabriflorum Lam* (Rubiaceae)	0.003 0.001	Root Leaf	Inf	Oral	Sed	[37]
Allophylus africanus (Sapindaceae) *Ocimum basilicum* (Lamiaceae)	0.003 **0.012**	Leaf Leaf	Dec	Oral	C	[8]
Alternanthera sessilis (Amaranthaceae) *Cola nitida,* (Malvaceae) *Clausena anisata* (Rutaceae)	0.001 0.001 **0.007**	Whole Plant Seed Root	Dec + meal of turtle	Oral	C	[66]
Annona muricata (Annonaceae) *Xylopia aethiopica* (Annonaceae) *Elaeis guineensis* (Arecaceae)	0.001 **0.013** **0.017**	Leaf Fruit Vegetal oil	Dec	Oral Cutaneous (bath)	C	[10]
Annona senegalensis (Annonaceae) *Trichilia emetica* (Meliaceae)	**0.007** **0.008**	Leafy twigs Leaf or Root	Dec	Oral Cutaneous(bath)	C	[10]
Aporrhiza nitida Gilg (Sapindaceae) *Nidorella microcephala* (Asteraceae)	0.002 0.002	Leaf Bark	Tri	Oral	E	[23]
Anthocleista nobilis G. Don (Loganiaceae) *Thecamatococcus daniellii* (Marantaceae)	0.002 0.003	Bark Leaf	Mac	Oral	He	[7]
Argemone mexicana L. (Papaveraceae) *Entada africana* (Leguminosae-Mimosoideae) *Momordica balsamina* (Cucurbitaceae) *Citrullus lanata* (Cucurbitaceae) *Elaeis guineensis* (Arecaceae)	0.006 0.005 0.003 0.002 **0.017**	Leaf (young) Leaf Whole Plant Root Vegetal oil	Dec	Oral	C	[10]
Argemone mexicana L. (Papaveraceae) *Citrullus lanata* (Cucurbitaceae)	0.006 0.002	Seed Root	Dec	Oral	C	[10]
Argemone mexicana L. (Papaveraceae) *Brillantaisia kirungae* (Acanthaceae) *Brillantaisia patula* T.Anderson (Acanthaceae) *Hyptis pectinata* (Lamiaceae) *Chenopodium ambrosioides* (Chenopodiaceae)	0.006 0.001 0.003 0.003 **0.012**	Seed Leaf Leaf Leaf Leaf	Dec	Oral Nasal	M .il	[21]
Argemone mexicana L. (Papaveraceae) *Gossypium hirsutum* (Malvaceae)	0.006 0.002	Seed Root	Dec	Oral	C	[10]
Argemone mexicana L. (Papaveraceae) *Rauvolfia vomitoria* (Apocynaceae) *Garcinia kola* (Clusiaceae)	0.006 **0.008** **0.007**	Leaf Leafy twig Seed	Dec	Oral	C	[10]
Biophytum petersianum Klotzsch (Oxalidaceae) *Micrococoa mercuralis*(Euphorbiaceae) *Aframomum melegueta* (Zingiberaceae) *Elaeis guineensis* (Arecaceae)	0.003 0.001 **0.013** **0.017**	Whole Plant Whole Plant Seed Vegetal oil	Tri	Ocular	E	[23]
Artemisia herba-alba Asso (Asteraceae) *Saccharum officinarum* (Poaceae)	0.001 0.003	Whole Plant Stem	Pow + cane juice	Oral	C	[43]
Boerhaavia erecta L. (Nyctaginaceae) *Ziziphus mucronata* (Rhamnaceae) *Rhus longipes* (Anacardiaceae) *Phyllanthus muellerianus* (Euphorbiaceae) *Eleusine indica* (Poaceae)	0.001 0.002 0.002 0.001 0.005	Whole Plant Leafy twig Leafy twig Leafy twig Whole Plant	Dec	Oral (2 tablespon)	Ce	[10]
Bridelia ferruginea Benth. (Euphorbiaceae)	0.003	Bark	Mac	Oral	E	[10]

Monodora myristica (Annonaceae) *Xylopia aethiopica* (Annonaceae) *Citrus lemon* (Rutaceae)	**0.008** **0.013** **0.007**	Fruit Fruit Fruit				
Bridelia scleroneura Mull. (Euphobiaceae) *Maesa lanceolata* (Myrsinaceae)	0.005 0.003	Leaf Root	Dec	Oral	M.il	[21]
Baillonella toxisperma Pierre (Sapotaceae) *Garcinia kola* (Clusiaceae) *Elaeis guineensis* (Arecaceae)	0.001 **0.007** **0.017**	Bark Seed Vegetal oil	Pow	Cutaneous (ointment)	E	[23]
Bryophyllum pinnatum (Lam.) Oken (Crassulaceae) *Citrus lemon* (Rutaceae)	0.003 **0.007**	Leaf Fruit	Tri	Oral Cutaneous(bath)	C	[10]
Burkea africana Hook.(Leguminosae-Ceasalpinioideae) *Parinari curatellifolia* (Chrysobalanaceae)	0.005 0.001	Leaf & Root Leaf	Dec	Oral	E	[35]
Boscia albitrunca (Burch). Gilg et Benedict(Capparaceae) *Clerodendrum uncinatum* (Lamiaceae)	0.002 0.001	Leaf Leaf	Dec	Nasal Cutaneous (salve of forhead)	He	[14]
Calliandra portoricensis (Jacq.) (Leguminosae-Mimosoideae) *Securidaca longepedunculata* (Polygalaceae) *Gladiolus dalenii* (Iridaceae)	0.005 **0.020** 0.003	Root Root Root	Alc	Oral	Ce & Cf	[10]
Calliandra portoricensis (Jacq.) (Leguminosae-Mimosoideae) *Citrus aurantifolia* (Rutaceae)	0.005 0.002	Root Seed	Dec	Oral	E	[35]
Capsicum frutescens L. (Solanaceae) *Bombax costatum* (Malvaceae)	0.006 0.005	Seed Root	Fum	Nasal	He	[10]
Diodia scandens Sw (Rubiaceae) *Elaeis guineensis* (Arecaceae)	0.003 **0.017**	Whole Plant Vegetal oil	Tri	Cutaneous (ointment)	C et E	[23]
Capsicum frutescens L. (Solanaceae) *Flueggea virosa* (Euphorbiaceae) *Harrisonia abyssinica* (Rutaceae) *Lantana viburnoides*(Verbenaceae)	0.006 **0.007** 0.001 0.001	Root Root Root Root	Dec	Oral	Ce	[8]
Capsicum frutescens L. (Solanaceae) *Costus afer* (Zingiberaceae)	0.006 0.002	Fruit Whole Plant	Dec	Oral Cutaneous (ointment)	C	[10]
Cassytha filiforms L (Lauraceae) *Strychnos innocua* (Loganiaceae) *Bombax costatum* (Malvaceae)	0.002 0.001 0.005	Whole Plant Whole Plant Bark	Dec	Oral Cutaneous (bath)	In	[10]
Carapa procera DC (Meliaceae) *Tetrapleura tetraptera* (Leguminosae-Mimosoideae)	0.001 0.002	Root Fruit & Root	Mac	Cutaneous (bath)	E	[58]
Carissa edulis Forssk (Apocynaceae) *Securidaca longepedunculata* (Polygalaceae)	0.005 **0.020**	Root Root	Dec	Cutaneous (bath)	E	[8]
Cassytha filiformis L (Lauraceae) *Chamaecrista mimosoides* (Leguminosae-Caesalpinioideae)	0.002 0.003	Root Leafy twigs	Dec	Oral	E	[35]
Chenopodium ambrosioides L. (Chenopodiaceae) *Allium cepa* (Amaryllidaceae)	**0.012** 0.006	Leaf Root	Dec	Oral	E	[35]
Cleome gynandra L (Capparaceae) *Elaeis guineensis* (Arecaceae)	**0.007** **0.017**	Whole Plant Vegetal oil	Ash + palm oil	Cutaneous (ointment)	He	[7]
Cissus integrifolia Baker (Vitaceae) *Protasparagus setaceus* (Asparagaceae)	0.001 0.001	Root Root	Dec	Oral	E	[8]
Combretum molle (Combretaceae) *Cochlospermum tinctorium* (Cochlospermumaceae)	0.003 0.001	Leaf Root	Dec	Oral	He	[10]
Combretum paniculatum (Combretaceae) *Fluegga virosa* (Euphorbiaceae) *Xylopia aethiopica* (Annonaceae)	0.001 **0.007** **0.013**	Bark of root Leafy twig Fruit	Dec	Intra-dermic (scarification)	Ce	[35]
Commelina benghalensi L. (Commelinaceae) *Spondias mombin* (Anacardiaceae)	0.003 0.003	6 Leaf 20 Leaf	Mac	Oral Cutaneous (ointment)	C	[35]
Celtis zenkeri Engl (Celtidaceae) *Eleais guineensis* (Arecaceae)	0.001 **0.017**	Bark Vegetal oil	Pow + palm oil	Cutaneous (ointment)	E	[65]
Commelina benghalensi L. (Commelinaceae) *Dichrocephala integrifolia* (Asteraceae) *Tagetes minuta* (Asteraceae) *Talinum portulacifolium* (Portulaceae)	0.003 0.002 0.001 0.001	Root Leaf Leaf Leaf	Tri	Oral (1 tablespoon) Cutaneous (ointment)	M.il	[21]
Conyza pyrrhopappa A.Rich (Asteraceae) 8 autres plantes	0.005	Root	Dec	Oral	Ce	[35]
Crescentia cujete L. (Bignoniaceae) *Ipomoea asarifolia* (Convolvulaceae)	0.002 0.003	Fruit Leaf	Tri	Oral	C	[35]
Cussonia arborea Hochst.Ex A.Rich *Ipomoea batatas* *Musa spp*	0.003 0.001 0.001	Leaf Leaf Leaf	Inf	Oral	Ins	[9]
Cucumis hirsutus Sond (Cucurbitaceae)	0,001	Root	Dec	Oral	C	[9]

Ricinus communis(Euphorbiaceae)	**0.008**	Seed				
Desmodium adscendens Sw. DC (Leguminosae-Papilionoideae)	0.006	Leaf	Mac	Cutaneous (bath)	E	[33]
Saccharum officinarum (Poaceae)	0.003	Stem				
Cyperus articulatus L. (Cyperaceae)	0.005	Root	Fum	Nasal	C	[10]
Diospyros mespiliformis (Ebenaceae)	0.006	Root				
Cymbopogon schoenanthus (L.) Spreng (Poaceae)	**0.008**	Root	Dec	Cutaneous (bath)	C M.il	[10]
Citrullus colocynthis (Cucurbitaceae)	0.001	Root				
Cymbopogon schoenanthus (L.) Spreng (Poaceae)	**0.008**	Whole Plant	Dec	Oral Cutaneous (bath)	Ins	[10]
Hymenocardia acida (Euphorbiaceae)	**0.010**	Whole Plant				
Vitex simplicifolia (Lamiaceae)	0.002	Leaf				
Lonchocarpus laxiflorus (Leguminosae-Papilionoideae)	0.003	Root				
Datura stramonim L. (Solanaceae)	0.005	Leaf	Tri	Oral	M.il	[21]
Hibiscus acetosella (Malvaceae)	0.001	Leaf				
Desmodium barbatum (L).Benth (Leguminosae-Papilionoideae)	0.001	Root	Mac	Oral	E	[9]
Faurea saligna (Proteaceae)	0.001	Root				
Desmodium hirtum Guill. Et Perr. (Leguminosae-Papilionoideae)	0.001	Leaf	Dec	Oral	Ee	[11]
Cucurbita pepo (Cucurbitaceae)	0.005	Seed				
Detarium microcarpum Guill. Et Perr (Leguminosae-Caesalpinioideae)	0.002	Leaf	Dec	Oral Cutaneous (bath)	C	[10]
Isoberlinia doka (Leguminosae-Caesalpinioideae)	0.002	Leaf				
Dichrostachys cinerera (L.) wiight et Arn. (Leguminosae-Mimosoideae)	0.002	Leaf	Dec	Oral Cutaneous (bath)	E	[21]
Solanum lycopersicum L.(Tomato) (Solanaceae)	0.005	Root				
Dicoma tomentosa Cass (Asteraceae)	0.001	Leafy twigs	Pow + honey	Oral	Ce	[35]
Newbouldia laevis (Bignoniaceae)	0.006	Leafy twigs				
Lycopodium cernum (Lycopodiaceae)	0.001	Leafy twigs				
Citrus lemon (Rutaceae)	**0.007**	Fruit				
Diospyros lycioides Desf. (Ebenaceae)	0.002	Root	Dec (meat of goat or mutton)	Oral	E	[47]
Euclea natalensis (Ebenaceae)	0.001	Root				
Senna petersiana (Leguminosae-Caesalpinioideae)	0.005	Root				
Diospyros mespiliformis A.DC (Ebenaceae)	0.006	Leafy twigs	Dec	Cutaneous (bath)	C	[10]
Protasparagus cooperi (Asparagaceae)	0.006	Leafy twigs				
Dissotis senegambiensis (Guill. Et Per.) (Melastomataceae) +8 autres plantes	0.002	Leaf	Dec	Oral	Cf	[21]
Eleusine indica (L.) Geartn. (Poaceae)	0.005	Root	Pow	Oral	Ce Cf	[35]
Aframomum melegueta (Zingiberaceae)	**0.013**	Seed				
Eleusine indica (L.) Geartn. (Poaceae)	0.005	Root	Pow	Nasal (Snif)	He	[10]
Aframomum melegueta (Zingiberaceae)	**0.013**	Seed				
Elytraria marginata Vahl (Acanthaceae)	0.001	Leaf	Dec	Oral	E	[10]
Eugenia aromatica (Myrtaceae)	0.001	Fruit				
Emilia coccinea (Sims) G. Don (Asteraceae)	0.003	Leaf	Tri	Cutaneous (bath)	Ce	[23]
Aframomum melegueta (Zingiberaceae)	**0.013**	Seed				
Emilia coccinea (Sims) G. Don (Asteraceae)	0.003	Leaf	Tri	Cutaneous (bath)	Ce	[23]
Monodora myristica (Annonaceae)	**0.007**	Seed				
Entada africana Guill. Et Perr. (Leguminosae-Mimosoideae)	0.005	Bark	Fum	Nasal (inhale fume)	Ce	[35]
Parkia biglobosa (Leguminosae-Mimosoideae)	**0.007**	Bark				
Annona senegalensis(Annonaceae)	**0.007**	Bark				
Entada africana Guill. Et Perr. (Leguminosae-Mimosoideae)	0.005	Leaf	Dec	Cutaneous (bath)	Ce	[35]
Parkia biglobosa (Leguminosae-Mimosoideae)	**0.007**	Leaf				
Annona senegalensis(Annonaceae)	**0.007**	Leaf				
Euphorbia tirucalli L. (Euphorbiaceae)	0.001	Latex	Tri + palm oil (1 tablespoon)	Oral	E	[33]
Elaeis guineensis(Arecaceae)	**0.017**	Vegetal oil				
Ficus sur Forssk. (Moraceae)	0.002	Bark of root	Dec	Oral	C	[33]
Strychnos madagascariensis (Loganiaceae)	0.001	Root				
Gardenia sokotensis Hutch (Rubiaceae) + 8 autres plantes	0.001	Leaf	Dec	Oral	Ce & Cf	[21]
Gardenia ternifolia Schumach& Thonn. (Rubiaceae)	0.005	Root	Dec + 1 teaspoon of honey	Oral (1 bamboo glass)	E	[20]
Securicadaca longepedunculata (Polygalaceae)	**0.020**	Root				
Catunaregam spinosa. (Rubiaceae)	0.003	Root				
Gladiolus daleni Van Geel (Iridaceae)	0.003	Root	Pow + eggshell	Oral	C	[10]
Allium cepa (Liliaceae)	0.006	Root				
Gladiolus daleni Van Geel (Iridaceae)	0.003	Root	Tri	Oral	E	[10]
Aframomum melegueta (Zingiberaceae)	**0.013**	Seed				
Vitellaria paradoxa (Sapotaceae)	0.006	Kernel				
Gossypium barbadense L. (Malvaceae)	0.001	Leaf	Mac + palm oil	Oral	C	[10]
Pergularia daemia (Asclepiadaceae)	0.001	Leafy twigs				

Elaeis guineensis (Arecaceae) *Citrus lemon* (Rutaceae)	**0.017** **0.007**	Vegetal oil Fruit (3)				
Gossypium hirsutum L. (Malvaceae) *Olax subscorpioides*(Olacaceae) *Ocimum basilicum* (Lamiaceae)	0.002 0.003 **0.012**	Leaf Root Leaf	Pow	Oral	C	[35]
Hoslundia opposita Vahl (Lamiaceae) *Conyza pyrrhopappa* (Asteraceae)	**0.010** 0.005	Root Root	Dec	Oral	Ce	[36]
Hoslundia opposita Vahl (Lamiaceae) *Deinbollia borbonica* (Sapindaceae)	**0.010** **0.007**	Leaf Leaf	Mac	Cutaneous (bath)	C	[8]
Hoslundia opposita Vahl (Lamiaceae) *Senna petersiana* (Leguminosae-Ceasalpinoideae)	**0.010** 0.005	Root Root	Dec	Oral	C & E	[8]
Hoslundia opposita Vahl (Lamiaceae) *Grewia stuhlmannii* (Malvaceae)	**0.010** 0.001	Whole Plant Whole Plant	Dec	Oral	C	[8]
Helichrysum odoratissimum (L.) Sweet (Asteraceae) + 8 autres plantes	0.003	Leaf	Dec	Oral	Ce & Cf	[21]
Helichrysum panduratum O.Hoffm (Asteraceae) + 8 autres plantes	0.001	Leaf	Dec	Oral	Ce & Cf	[21]
Heliotropium indicum L. (Boraginaceae) *Strophanthus hispidus* (Apocynaceae)	0.003 0.001	Leaf & Root Root	Mac	Cutaneous (bath)	Ins	[10]
Hymenocardia ulmonoides Oliv. (Euphorbiaceae) *Maprouenea africana* (Euphorbiaceae) *Palisota ambigua* (Commelinaceae)	0.002 0.001 0.001	Leaf (4) Leaf (4) Leaf	Dec	Oral (3 tablespoons)	E	[33]
Ipomoea asarifolia (Desr.) Roem. Et Schult. (Convolvulaceae) *Elaeis guineensis* (Arecaceae)	0.003 **0.017**	Leafy twig or Leaf Vegetal oil	Dec + palm oil	Cutaneous (ointment)	C	[10]
Indigofera emarginella Steud. Ex A.Rich (Leguminosae- Papilionoideae) *Hoslundia opposita* (Lamiaceae)	0.001 **0.010**	Root Root	Inf	Oral	Ce	[30]
Jatropa gossypiifolia L. (Euphorbiaceae) *Senna occidentalis* (Leguminosae-Ceasalpinoideae)	0.002 0.003	Leaf & Root Leaf & Root	Dec	Oral	C	[35]
Kalanchoe crenata (Andrews) Haw. (Crassulaceae) + 8 autres plantes	0.005	Leaf	Tri	Ocular Nasal	Ce & Cf	[21]
Kalanchoe crenata (Andrews) Haw. (Crassulaceae) *Aframomum melegueta* (Zingiberaceae)	0.005 **0.013**	Leaf Seed	Tri	Ocular	He	[10]
Keetia zanzibarica (Klotzsch) Bridson subsp. Zanzibarica (Rubiaceae) *Phaseolus vulgaris* (Leguminosae- Papilionoideae)	0.001 0.001	Root Seed	Dec	Oral	Ce & Cf	[8]
Maerua angolensis DC (Capparaceae) *Ximenia americana* (Oleaceae)	**0.007** 0.006	Bark & Leaf Whole Plant	Pow	Nasal (Snif)	He	[19]
Microdensmis keayana j. Léonard (Pandceae) *Newboulia laevis* (Bignoniaceae)	0.002 0.006	Leaf & Root Leaf & Root	Dec	Oral	Ins	[35]
Mikania cordata (Burm.)f. B.L. Rob. (Asteraceae) *Carica papaya* (Caricaceae)	**0.007** 0.001	Leaf Leaf	Dec	Oral (twice/day)	Ins & M. il	[24; 25]
Launaea cornuta C. Jeffrey (Asteraceae) *Cissampelos pareira* var. orbiculata (Menispermaceae)	0.002 0.001	Leaf & Root Root	Inf	Oral	E	[36]
Lippia multiflora Moldenke (Verbenaceae) *Piper guineense* (Piperaceae) *Sansevieria liberica* (Dracaenaeae)	0.002 0.001 0.002	Leaf Fruit Leaf	Sau or Dec	Oral	E	[10]
Lonchocarpus laxiflorus Guill. Et Perr. (Leguminosae-Papilionoideae) *Stereospermum kunthianum* (Bignoniaceae)	0.003 0.003	Bark of root Bark of root	Fum with elephant faeces	Nasal	E	[35]
Lonchocarpus laxiflorus Guill. Et Perr. (Leguminosae-Papilionoideae) *Parkia biglobosa* (Leguminosae-Mimosoideae) *Vitellaria paradoxa* (Sapotaceae) *Vitex simplicifolia* (Lamiaceae) *Cymbopogon schoenanthus* (Poaceae) *Hymenocardia acida* (Euphorbiaceae)	0.003 **0.007** 0.006 0.002 **0.008** **0.010**	Bark of root Root Seed Leaf Leaf Whole Plant	Dec	Oral Cutaneous (Headache rubbed head)	E & Ins He	[35]
Melia azedarach L. (Meliaceae) *Elaeis guineensis* (Arecaceae)	0.002 **0.017**	Leaf & Seed Vegetal oil	Pow + palm oil	Cutaneous (ointment)	C & He	[11]
Manniophyton fulvum ou africanum Mull. Arg (Euphorbiaceae) *Saccharum officinarum* (Poaceae)	0.001 0.003	Leaf & Bark Stem	Pow + juice cane	Oral	E & Ins	[23]
Melochia corchorifolia L. (Malvaceae) *Urera obovata* (Urticaceae) *Aframomum melegueta* (Zingiberaceae) 1 male Agama agama	0.001 0.001 **0.013**	Leaf Root Fruit	Inf	Oral	E	[10]
Mikania cordata (Burm.)f. B.L. Rob (Astearceae) *Polyscias ferruginea* (Araliaceae)	**0.007** 0.001	Leaf Bark	Tri	Nasal	E	[16]
Mitracarpus hirtus (L.) DC (Rubiaceae) *Pupalia lappacea* (Amaranthaceae)	0.002 0.001	Whole Plant Whole Plant	Tri	Cutaneous (head massage)	He	[10]
*Mitragyna inermis (*Willd.) Kuntze (Rubiaceae) *Balanites aegyptiaca* (Zygophyllaceae)	0.003 0.001	Leaf Root	Dec	Oral Cutaneous	M.il	[19]

Tamaraindus indica (Leguminosae- Caesalpinioideae) *Diospyros mespiliformis*(Ebenaceae) *Guiera senegalensis* (Combretaceae)	0.001 0.006 0.001	Stem & Leaf Leaf Leaf		(head bath)		
Monodora myristica (Gaertn.)Dunal (Annonaceae) *Xylopia aethopica* (Annonaceae) *Nicotina tabacum* (Solanaceae) *Allium cepa* (Amaryllidaceae)	**0.007** **0.013** 0.005 0.006	Fruit Fruit Leaf Root	Mac + urine/ bleu alun	Orale (1 liqueur glass)	C	[10]
Monodora myristica (Gaertn.)Dunal (Annonaceae) *Coelocaryon preussli* (Myristiceae) *Greenwayodendon suaveolens* (Annonaceaee) *Dicranolepis laciniata* (Thymelaceae)	**0.007** 0.001 0.002 0.001	Seed Seed Leaf Leaf	Tri	Cutaneous (rubbed/head/ everyday)	Ins	[10]
Mukia maderaspatana (L.) M. Roem. (Cucurbiaceae) *Elaeis guineensis* (Arecaceae)	0.002 **0.017**	Stem& Leaf Vegetal oil	Ash + Palm oil	Intra-dermic (scarification)	He	[23]
Newbouldia laevis Seem. (Bignoniaceae) *Aframomum melegueta* (Zingiberaceae)	0.006 **0.013**	Leaf Seed (one)	Tri	Cutaneous (bath)	He	[10]
Newbouldia laevis Seem. (Bignoniaceae) *Microdensmis keayana* j. Léonard (Pandaceae)	0.006 0.002	Leaf & Root Leaf & Root	Dec	Oral	Ins	[35]
Nidorella microcephala Steetz (Asteraceae) *Apporrhiza nitida,* (Sapindaceae) *Commiphora sp* (Burseraceae)	0.002 0.002 0.001	Leaf Leaf Leaf	Dec	Oral	E & C	[23]
Nymphaea micrantha Guill. Et Perrr. (Nymphaeaceae) *Cymbopogon schoenanthus* (Poaceae) *Setaria pallidae-fusca* (Poaceae)	0.001 **0.008** 0.001	Leafy twig Leafy twig Leafy twig	Dec	Cutaneous (bath)	Ce	[35]
Nephrolepis undulata (Afzel.ex Sw) JSm (Oleandraceae ou Nephrolepidaceae) *Elaeis guineensis* (Arecaceae)	0.001 **0.017**	Leafy twig Vegetal oil	Dec + palm oil	Oral	E	[35]
Ocimum canum Sims (Lamiaceae) *Ricinus communis* (Euphorbiaceae) *Chenopodium ambrosoides* (Chenopodiaceae)	**0.007** **0.008** **0.012**	Whole Plant Seed Seed	Pow	Nasal (Snif)	Ins	[9]
Ocimum canum Sims (Lamiaceae) *Breonadia sylicina* (Rubiaceae)	**0.007** 0.001	Leaf Leaf	Mac or Fum	Oral or Nasal	He	[65]
Ocimum gratissimum L. (Lamiaceae) *Ricinus communis* (Euphorbiaceae) *Chenopodium ambrosoides* (Chenopodiaceae)	**0.010** **0.008** **0.012**	Whole Plant Seed Seed	Pow	Nasal (Snif)	Ins	[9]
Olax subscorpiodea Oliv. (Olacaceae) *Allium cepa* (Amaryllidaceae)	0.003 0.006	Root Leaf	Dec + local soap	Cutaneous (bath)	C	[42]
Olax subscorpiodea Oliv. (Olacaceae) *Uvaria chamae* (Annonaceae)	0.003 0.003	Root Root	Mac + urine of cow	Cutaneous (bath)	C	[10]
Oncoba welwitschii (Flacourtiaceae) *Cucurbita pepo* (Cucurbitaceae)	0.002 0.005	Root Seed	Mac	Oral	E	[23]
Opilia celtidifolia (Guill. Et Perr) (Opiliaceae) *Cymbopogon giganteus* (Poaceae)	0.005 0.001	Leafy twigs Leaf	Dec	Oral Cutaneous (bath)	C E	[10]
Opilia celtidifolia (Guill. Et Perr) (Opiliaceae) *Premna chrysoclada* (Lamiaceae) *Grewia goetzeana* (Lamiaceae)	0.005 0.005 0.001	Root Root Root	Dec	Oral	M.il	[36]
Opilia celtidifolia (Guill. Et Perr) (Opiliaceae) *Piper nigrum* (Piperaceae)	0.005 0.002	Leaf Fruit	Dec	Oral	He	[10]
Parkia biglobosa (Jacq) R. Br ex Don (Leguminosae- Mimosoideae) *Ocimum canum* (Lamiaceae) *Securidaca longepedunculata* (Polygalaceae) *Hymenocardia acida* (Euphorbiaceae)	**0.007** **0.007** **0.020** **0.010**	Leaf Leaf Leaf Leaf	Dec	Oral	Ins	[10]
Parkia biglobosa (Jacq) R. Br ex Don (Leguminosae- Mimosoideae) *Schwenckia americana* (Solanaceae)	**0.007** 0.002	Leaf Leaf	Dec	Cutaneous (head bath)	He	[10]
Pancratium trianthum Herb. (Amaryllidaceae) *Acanthospermum hispidum* (Asteraceae)	0.001 0.003	Root Stem	Dec	Oral	Cf	[10]
Pentadiplandra brazzaena Baill (Pentadiplandraceae) *Kalanchoe crenata* (Crassulaceae)	0.001 0.005	Root Leaf	Tri	Nasal	E	[33]
Premna chrysoclada (Bojer) Gurke (Lamiaceae) *Grewia goeizeana* (Malvaceae)	0.005 0.001	Root Root	Inf	Cutaneous (bath)	Mil	[36]
Uvaria lucida (Annonaceae) *Premna chrysoclada* (Lamiaceae)	0.001 0.005	Leaf Root	Inf	Cutaneous (bath)	Mil	[36]
Pericopsis laxiflora (Benth. Ex Baker) Meeuwen (Leguminosae-Papilionoideae) *Vitellaria paradoxa* (Sapotaceae) *Citrus lemon* (Rutaceae) *Piper nigrum* (Piperaceae)	**0.011** 0.006 **0.007** 0.002	Bark Shea butter Fruit Fruit	Tri	Cutaneous (rubbed head)	He	[16]
Physalis peruviana L. (Solanaceae) 8 autres plantes	0.001	Leaf	Dec	Oral	Cf Ce	[21]
Phytolacca dodecandra L'Hér. (Phytolaccaceae) *Torenia thouanrsii* (Simaroubaceae)	0.001 0.002	Leaf or Bark of root	Mac	Oral (3 times/day)	E	[23]

		Whole Plant				
Plumbago zeylanica L (Plumbaginaceae) *Xylopia aethiopica* (Annonaceae) *Allium cepa* (Amaryllidaceae)	0.003 **0.013** 0.006	Root Fruit Leaf	Dec + local soap	Cutaneous (bath)	C	[42]
Portulaca oleracea L. (Portulacaceae) *Talinum triangulare* (Portulaceae) *Gossypium arboreum* (Malvaceae)	0.003 0.001 0.001	Leaf Leaf Leaf	Mac	Oral (prventive &/curative)	C	[42]
Pseudocedrela kotschyi (Schweinf.) Harms (Meliaceae) *Xylopia aethiopica* (Annonaceae)	0.003 **0.013**	Bark Fruit	Dec	Cutaneous (ointment chest)	C	[10]
Psiadia punctulata (DC.) Vatke (Asteraceae) *Conyza pyrrhopappa* (Asteraceae)	0.002 0.005	Root	Dec	Oral	E	[36]
Psiadia punctulata (DC.) Vatke (Asteraceae) *Conyza pyrrhopappa* (Asteraceae)	0.002 0.005	Leaf Leaf	Pow + honey	Per lingual	E	[36]
Psorospermum febrifugum Spach var. febrifugum (Clusiaceae) *Xylopia aethiopica* (Annonaceae)	0.001 **0.013**	Leaf Fruit	Dec	Oral (1 liqueur glass)	E	[10]
Pteleopsis suberosa Engl. et Diels (Combretaceae) *Isoberlinia doka* (Leguminosae-Caesalpinoideae)	0.003 0.002	Leafy twig Stem; Leaf & bark	Dec	Oral (1 liqueur glass)	Ce	[10]
Pteleopsis suberosa Engl. et Diels (Combretaceae) *Terminalia avicennoides* (Combretaceae)	0.003 0.001	Leafy twig Leafy twig	Dec	Oral Cutaneous(bath)	E	[10]
Pteleopsis suberosa Engl. et Diels (Combretaceae) *Stylosanthes erecta* (Leguminosae-Papilionoideae)	0.003 0.005	Leafy twig Leafy twig	Dec	Cutaneous (bath)	C and Ins	[10]
Pycnocoma thonneri Pax (Euphorbiaceae) *Aframomom sp* (Zingiberaceae)	0.001 0.001	Root or Leaf Fruit	Tri	Ocular	C	[50]
Rinorea ilicifolia (Oliv.) Kuntze (Violaceae) *Palisota hirsuta* (Commelinaceae)	0.001 0.001	Whole Plant Leaf	Dec	Oral (a reputed cure)	E	[16]
Ricinus communis L (Euphorbiaceae) *Citrus lemon* (Rutaceae)	**0.008** **0.007**	Leaf Seed	Dec	Cutaneous (bath)	Ee	[54]
Securidaca longepedunculata Fresen. (Polygalaceae) *Zanha africana* (Sapindaceae) *Xeromphis obovata* (Rubiaceae) *Gardenia ternifolia* (Rubiaceae)	**0.020** 0.006 0.005 0.005	Root Root Root Root	Dec	Oral	E	[20]
Securidaca longepedunculata Fresen (Polygalaceae) *Biophytum crassipes* (Oxalidaceae) *Cannabis sativa* (Cannabaceae)	**0.020** 0.001 0.001	Root Root Leaf	Dec	Oral	E	[20]
Senna singueana (Delile). Lock (Leguminosae-Caesalpinoideae) *Microglossa densiflora* (Asteraceae)	0.001 0.001	Root Root	Dec	Oral	C	[30]
Senna didymobotrya (Fresen.) H.S. Irwin et Barneby (Leguminosae-Caesalpinoideae) *Momordica calantha* (Cucurbitaceae) *Myrica salicifolia,* (Myricaceae) *Macaranga capensis* (Euphorbiaceae)	0.005 0.001 0.002 0.001	Root Root Root Root	Dec	Oral	M il	[36]
Setaria pumila (Poir) (Poaceae) *Cymbopogon schoenanthus*(Poaceae)	0.001 **0.008**	Leafy twigs Leaf	Dec	Cutaneous (bath)	C	[35]
Solanum lycopersicum L.(Tomato) (Solanaceae) *Nicotianum tabacum* (Solanaceae)	0.005 0.005	Leaf Leaf	Tri	Nasal (3 drops)	E	[33]
Spondias mombin L. (Anacardiaceae) *Citrus aurantifolia* (Rutaceae)	0.003 0.002	Root Seed	Pow	Oral Intra-dermic	C	[35]
Stereospermum kunthianum cham. (Bignoniaceae) *Dalbergia boehmii* (Leguminosae- Papilionoideae)	0.003 0.001	Bark of root Bark of root	Dec	Oral, Cutaneous (bath)	C	[23]
Strombosiopsis tetrandra Engl (Olacaceae) *Garcinia kola.* (Clusiaceae)	0.001 **0.007**	Leaf Seed	Tri	Cutaneous (bath)	E	[23]
Stylosanthes erecta P. Beauv. *Annona senegalensis* *Vitellaria paradoxa* (Sapotaceae)	0.005 **0.007** 0.006	Whole Plant Leaf Shea buttter	Dec	Oral (2 liqueur glasses)	He	[10]
Torenia thouarsii Kuntze (Scorphulariaceae) *Curcubita pepo* (Cucurbitaceae) *Caloncocha welwitschii* (Flacourtiaceae)	0.002 0.005 0.001	Whole Plant Seed Root	Dec	Oral	E	[23]
Trichilia emetica Vahl (Meliaceae) *Anthocleista djalonensis (Loganiaceae)*	**0.008** 0.001	Root Root	Dec	Oral	C	[10]
Ximenia americana (Oleaceae) *Trichilia emetica* (Meliaceae)	0.006 **0.008**	Fruit Bark of root	Mac + milk	Oral (1 glass)	E	[8]
Valeriana capensis Thumb. (Cape valerian) *Ballota africana* (Lamiaceae) *Stachys thunbergii* (Lamiaceae)	0.003 0.001 0.001	Root Root Root	Mac	Oral	E	[28; 13]
Vitex doniana Sweet (Lamiaceae) *Guiera senegalensis* (Combretaceae) *Lannea acida* (Anacardiaceae)	0.005 0.001 0.001	Leaf Leaf Leaf	Tri + milk	Oral	M.il	[50]
Ximenia americana (Oleaceae) *Tapinanthaus dodoneifolius* (Loranthaceae)	0.006 0.001	Leaf Leaf	Dec	Oral	He	[10]
Xylopia pynaertii De wild (Annonaceae)	0.001	Bark	Pow + palm	Cutaneous	Ce	[23]

Elaeis guineensis(Arecaceae)	**0.017**	Vegetal oil	oil	(ointment)		
Xylopia aethiopica (Dunal) A.Rich. (Annonaceae) *Garcinia kola* (Clusiaceae)	**0.013** **0.007**	Leaf Seed	Tri	Oral	E	[23]
Zanha africana (Radlk.) Exell (Sapindaceae) *Boscia angustifolia* (Capparaceae) *Ehretia coerulea* (Boraginaceae)	0.006 0.001 0.001	Leaf Leaf Leaf	Dec	Oral	Ins	[20]

Inf: Infusion; Dec: Decotion; Mac: Maceration with water; Alc: Alcolature (maceration with local liqueur); Pow: Powder; Trit: Trituration or pound or pulverize; Fum: Fumigation; Cc: Convulsions of children; E: Epilepsy; Cf: Convulsion of fever; He: Headache; Ins: Insanity; M.il: Mental illness or disorders; Hal: Hallucinations; Mig: Migraine; Sti: Stimulant; Tra: Tranquilisant; Sed: Sedatif

A phytochemical screening has been carried out on fourteen (14) among those medicinal plants. In alphabetical order, there are fourteen (14) plants used from (A to N) and fourteen (14) to (O to AB) least used plants. Those are: *Aframomum melegueta* (seeds); *Securidaca longepedunculata* Fresen (root bark); *Allium cepa* L. (bulb); *Afzelia africana* Smith (leaves); *Garcinia kola* (seeds); *Xylopia aethiopica* Dunal A. Rich. (fruit), *Argemone mexicana* (fruit); *Monodora myristica* (seeds), *Fluegga virosa* (root), *Newboulia laevis* (leaves), *Hymenocardia acida* (Racine), *Ocimun gratissimum* (whole plant), *Moringa oleifera* (leaves), *Acanthospermum hispidum* (leaves), *Kigelia africana* (bark), *Cretava adonsonii* (leafy stem), *Olax subscorpioidea* (root), *Psidium guajava* (leaves), *Portulaca oleracea* (leaves), *Talium triangulare* (leaves), *Bridelia feruginea* (leaves), *Vitex doniana* (bark), *Opilia celtidifolia* (leafy stem), *Hemizygia bracteosa* (leaves), *Cajanus cajan* (leaves), *Tetrapleura tetraptera* (fruit), *Uvaria chamae* (root). Table 4 shows the findings of the phytochemical screening carried out on the twenty-eight plants. One can deduce an absence of cyanogenic derivatives among the twenty-eight plant organs. Cardiac glycosides are only present in *Talium triangulare* leaves, and this could reveal to be toxic to the heart when used frequently and at some dose. Some chemical families are more represented than others. Those are alkaloids (64.3%); reducing compounds (85.7%); mucilages (89.3%), anthocyanins (53.6%), leuco-anthocyanins (60.7%), quinones (50%), triterpenes (46.4%), steroids (42.9%), tannins (82.1%), favonoids (67.9%).

Some plants ingrain more chemical families than others, 7 out of 17 families sought (≥ 41.2%). These are: *Aframomum melegueta* (seeds); *Afzelia africana* Smith (leaves); *Fluegga virosa* (root); *Newboulia laevis* (leaves); *Hymenocardia acida* (Racine); *Ocimun gratissimum* (whole plant); *Monodora myristica* (seeds), *Psidium guajava* (leaves); *Talium triangulare* (leaves); *Bridelia feruginea* (leaves); *Vitex doniana* (bark); cajanus cajan (leaves); *Tetrapleura tetraptera* (fruit).

Table 4: Phytochemical screening results

Plant species / Chemical groups	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	V	W	X	Y	Z	AA	AB	% of each chemical groups
Alkaloïds	+	-	+	-	+	+	+	-	-	+	+	+	+	+	-	-	+	+	-	+	+	+	-	+	+	-	+	64.3
Tannins	-	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	82.1
Flavonoids	-	+	+	-	-	-	+	-	-	+	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+	+	67.9
Anthocyanin	+	-	+	-	-	-	-	-	-	+	+	+	+	-	+	+	-	+	-	+	+	+	+	+	+	-	-	53.6
Leuco-anthocyanins	+	+	+	+	-	-	-	+	-	+	+	+	+	-	-	+	-	+	-	-	+	+	+	+	+	+	-	60.7

Percentage of chemical group presence by plants (%)	C-glycosides	O-glycosides	Anthracenic free	Reducing compound	Coumarins	Mucilage	Cyanogenic derivatives	Cardiac glycosides	Steroids	Tri terpenes	Saponins	Quinones
64.7	-	+ genin	+	+	+	+	-	-	+	+	-	+
35.3	-	-	-	+	-	+	-	-	+	-	-	-
47.1	-	-	-	+	-	+	-	-	-	-	-	+
29.4	-	-	-	+	-	+	-	-	+	-	-	-
29.4	-	-	-	+	-	+	-	-	-	-	+	-
11.8	-	-	-	-	-	-	-	-	-	+	-	-
41.2	-	-	-	+	-	+	-	-	-	+	-	+
41.2	+	-	-	+	-	+	-	-	+	+	-	-
17.6	-	-	-	-	-	-	-	-	+	+	-	-
52.9	-	-	-	+	+	+	-	-	-	-	-	-
70.6	-	-	+	+	+	+	-	-	-	+	+	+
70.6	-	-	-	+	-	+	-	-	+	+	-	-
64.7	+	+	-	+	-	+	-	-	+	-	-	+
23.5	-	-	-	+	-	+	-	-	-	-	-	-
41.2	-	-	-	+	-	+	-	-	+	-	-	-
41.2	+	-	-	-	-	+	-	-	-	-		+
35.3	+	+	-	+	-	+	-	-	-	-	+	-
47.2	-	-	-	+	+	+	-	-	+	+	-	+
29.4	-	-	-	+	-	+	-	-	-	+	-	-
52.9	-	-	-	+	-	+	-	+	+	+	-	-
82.4	+	+	-	+	+	+	-	-	+	+	+	+
52.9	-	-	-	+	+	+	-	-	-	+	-	-
41.2	-	-	-	+	-	+	-	-	-	+	+	-
47.2	-	-	-	+	-	+	-	-	-	-	-	+
47.2	-	-	-	+	-	+	-	-	-	-	-	+
58.8	+	+	-	+	-	+	-	-	+	-	+	+
29.4	-	-	-	+	-	+	-	-	-	-	-	-
	17.9	**17.9**	**7.2**	**85.7**	**21.4**	**89.3**	**0.00**	**3.6**	**42.9**	**46.4**	**25**	**50.00**

A: Seeds of *Aframomum melegueta;* **B:** Seeds of *Garcinia kola;* **C:** Leaf of *Afzelia africana;* ***D****:* Fruit of *Xylopia aethiopica;* **E:** Bark of root of *Securidaca longepedunculata;* ***F:*** Roots of *Allium cepa;* G: fruit of *Argemone mexicana;* **H:** Seed of *Monodora myristica*; **I**: Root of *Fluegga virosa;* **J**: Leaf of *Newboulia laevis*; **K:** Root of *Hymenocardia acida*; **L:** Whole plant of *Ocimun gratissimum*; **M:** Leaf of *Moringa oleifera*; **N:** Leaf of *Acanthospermum hispidum*; **O**: Bark of *Kigelia africana*; **P**: Leafy twigs of *Cretava adonsonii;* **Q**: Root of *Olax subscorpioidea*; **R**: Leaf of *Psidium guajava*; **S**: Leaf of *Portulaca oleracea;* **T**: Leaf of *Talium triangulare*; **V**: Leaf of *Bridelia feruginea*; **W**: Bark of *Vitex doniana*; **X**: Leafy twig of *Opilia celtidifolia*; **Y**: *Leaf of Hemizygia bracteosa*;; **Z**: Leaf of *cajanus cajan* ***AA:****Fruit of Tetrapleura tetraptera* ***AB:*** Root of *Uvaria chamae*

4. Discussion

This research study is premised on compiling the existing literature on ethnobotanical, ethnomedicinal plants on the one hand, and performing the phytochemical screening of those plants used in the traditional treatment of convulsions, epilepsy and mental disorders in Africa, on the other hand. As a result, the survey has come up with a directory of recipes along with the dosages used for 511 plant species belonging to 113 families. The statistical distribution among the botanical families screened shows the predominance of Leguminoseae family with 64 plant species (12.5%), followed by the Asteraceae with 34 plant species making (6.7%). The findings of the ethobotanical study conducted by Houmènou *et al*. [67] corroborate these results regarding the most represented botanical family. Other ethnobotanical studies, conducted by scholars have revealed similar plant diversity used for the traditional treatment of brain pathologies. Among them range Michael *et al*., [68] has identified 150 plants belonging to 74 families. S. Laura Guzmán Gutiérrez *et al*. [69] listed 92 medicinal plants containing 44 botanical families used in the traditional treatment of depression and anxiety. It can be inferred from this study that Asteraceae with 10.87% is the most predominant family. Plant recipes are utilized as single plant recipes (mono-specific). As for the treated pathologies, recipes are mainly used against cases of convulsions. Leaf appears to be the most predominant plant organ used, accounting for forty percent (40%) of the cases. With regard to galenic forms 48% of the recipes are used as decoction administered through oral route, while (62%) of the recipes are administered through main route. It is worth pointing out that very few recipes are supported by posology of use indicating dosage. Forty-one [41] plant species happen to be the most predominantly used. Phytochemical screening of twenty-eight [28] plant organs reveals the presence of chemical families such as: alkaloids, tannins, flavonoids, anthocyanins, leuco-anthocyanins, quinones, saponins, tri terpenes, steroids, cardiac glycosides, mucilages, coumarins, reducing compounds, anthracenic O-glycosides and C-glycosides. None of the plant organs taken in isolation could contain all the desired chemical groups. However, there are more chemical groups in some plant organs than others. Some families of detected compounds contain therapeutic properties [70] that could explain the use of these medicinal plants to treat neurological diseases and / or due to their pharmacological effects on pathologies such as: convulsions, epilepsy, headaches, Migraine, madness, hallucinations, mental disorders, sedative, insomnia, tranquilization, stimulant and psychoactive effects.

Coumarins are found in six plant organs, Seeds of *Aframomum melegueta*; Leaf of *Newbula laevis*, Root of *Hymenocardia acida*; Leaf of *Psidium guajava*, Leaf of *Bridelia feruginea*; Bark of *Vitex doniana*. Coumarins, known for their antioedematous, hypnotic and high-dose anticoagulant effects, also possess anti-spasmodic, sedative and antiseptic properties [70]. In particular, their anti-spasmodic and sedative effects may be of interest in the treatment of convulsions.

Out of those screened and investigated plants, flavonoids happen to be present in twenty (20); those are; are Seeds of *Garcinia kola*; Leaf of *Afzelia africana*; fruit of *Argemone mexicana*; Leaf of *Newboulia laevis*; Root of *Hymenocardia acida*; Whole plant of *Ocimun gratissimum*; Leaf of *Moringa oleifera*; Bark of *Kigelia africana*; Leafy twigs of *Cretava adonsonii*; Leaf of *Psidium guajava*; Leaf of *Portulaca oleracea*; Leaf of *Talium triangulare*; Leaf of *Bridelia feruginea*; Bark of *Vitex doniana*; Leafy twig of *Opilia celtidifolia*; Leaf of *Hemizygia bracteosa*; Leaf of *Cajanus cajan*, Fruit of *Tetrapleura tetraptera*, Root of *Uvaria chamae*. Flavonoids are particularly active in maintaining good blood circulation, possess a high antioxidant or anti-radical, antiproliferative and anti-carcinogenic potential [71] and inhibit the tendency of small blood cells or platelets to regroup and form blood clots [72]. Flavonoids also possess anti-inflammatory, hepato-protective and diuretic properties [73]. Flavonoids have also shown antiresaplegitive properties through several studies. In the central nervous system, several flavonoids bind to benodiazepine receptors [74] resulting in sedative, anxiolytic and anticonvulsant effects. The anticonvulsant effect of plant extracts could be justified, on the one hand, by their richness in flavonoids [74] and, on the other, by the presence of polyphenolic substances which have a strong anti-radical activity. Indeed, several studies have shown that antioxidants protect the body against convulsions. According to Spencer's [75] studies, flavonoids protect the body against neurodegeneration such as Parkinson's and Alzheimer's diseases.

Coumarins and flavonoids are 5-lipoxygenase inhibitors according to Bruneton [76]. This property could be used by the plants studied to treat cases of inflammation in neurological and / or neurodegenerative diseases.

Anthocyanins present in the Seeds of *Aframomum melegueta*; Leaf of *Afzelia africana*; Leaf of Newboulia laevis; Root of Hymenocardia acida; Whole plant of *Ocimun gratissimum*; Leaf of *Moringa oleifera*; Bark of *Kigelia africana*; Leafy twigs of *Cretava adonsonii*; Leaf of *Psidium guajava*; Leaf of *Talium triangulare*; Leaf of *Bridelia feruginea*; Bark of *Vitex doniana*; Leafy twig of *Opilia celtidifolia*; Leaf of *Hemizygia bracteosa*; Leaf of *Cajanus cajan*. Anthocyanins and leuco anthocyanins have an oedematous action, decrease the permeability of blood capillaries and increase their resistance [76]. The tannins

are present in twenty-four plants out of the twenty-eight. As biological properties, tannins have a therapeutic action related to astringency. They are used for their antioxidant activities [76].

Tannins, flavonoids, anthocyanins, leuco-anthocyanins and quinones are phenolic compounds with powerful antioxidant properties that act as free-radical bins, preventing and mitigating the damage they cause. Free radicals produced during cellular metabolism can be destroyed by antioxidants.

Alkaloids have several biological properties. They are present in the Seeds of *Aframomum melegueta*; Leaf of *Afzelia africana*; Bark of root of *Securidaca longepedunculata*; Roots of *Allium cepa*; fruit of *Argemone mexicana*; Leaf of *Newboulia laevis*; Root of *Hymenocardia acida*; Whole plant of *Ocimun gratissimum*; Leaf of *Moringa oleifera*; Leaf of *Acanthospermum hispidum*; Root of *Olax subscorpioidea*; Leaf of *Psidium guajava*; Leaf of *Talium triangulare*; Leaf of *Bridelia feruginea*; Bark of *Vitex doniana*; Leaf of *Hemizygia bracteosa*; Leaf of *Cajanus cajan*; Root of *Uvaria chamae*. Alkaloids are highly sought after for their broad spectrum of biological activities, including antibiotic, antiparasitic, anesthetic, anti-tumor, anti-cancer and analgesic analgesic and spasmolytic properties. Alkaloids have actions on the central nervous system [76]. Alkaloids are particularly interesting substances for their pharmacological activities which are exercised in the most varied fields: at the level of the central system, whether they are depressants or stimulants; at the level of the autonomic nervous system where they can be sympathomimetic, sympatholytic, parasympathomimetic, anti-cholinergic and ganglioplegic [76].

Triterpenes have shown anti-convulsive properties throughout several studies. For example, triterpenes isolated from Rubia cordifolia Linn inhibited electroshock-induced convulsions, as well as electrical kinding, pentylenetetrazol (PTZ) and lithium-pilocarpine [77]. Terpenoids are in thirteen plants and steroids identified in a dozen. Steroids are secondary metabolites known for their analgesic and anti-inflammatory properties [76] for the treatment of migraines and headaches.

Free anthracenics present in the seeds of *Aframomum melegueta*; Root of *Hymenocardia acida*; the combined anthracene derivatives O-glycosides are found in the Seeds of *Aframomum melegueta*, Leaf of *Moringa oleifera*; Leaf of *Bridelia feruginea*; Fruit of *Tetrapleura tetraptera* and C-glycosides in the Seed of *Monodora myristica,* Leaf of *Moringa oleifera*; Leafy twigs of *Cretava adonsonii*; Root of *Olax subscorpioidea*, Leaf of *Bridelia feruginea*. These glycosides have been reported to have an action on the central nervous system [70].

All phytochemicals identified are reported to ingrain and encompass valuable pharmacological properties and the use of the above mentioned plant drugs in the treatment of female infertility could be justified by their richness in these various elements. Indeed, the therapeutic action of plants results from the combination of these phytochemical elements or secondary metabolites synthesized by plants [77]. Moreover, the antioxidant and anti-inflammatory powers of several groups chemicals would be used to prevent, for example, the risk of cancer and neuro-degenerative diseases [76].

5. Conclusion

Medicinal plants which intervene in the treatment of brain pathologies are well endowed with active ingredients. The ongoing study has subjected twenty-eight (28) of them to phytochemical screening. Alkaloids, tannins, flavonoids, anthocyanins and leuco anthocyanins, quinone derivatives, saponosides, triterpenes, mucilages and glycosides have been identified. The findings have come to corroborate some results contained in and propounded by many previous scholarships. The detection in those plants froml the various groups of active ingredients could justify their use in the treatment of pathologies. Forthcoming research could focus on the isolation of the active ingredients responsible for the biological activities of the plants and / or the various recipes used would also be necessary and toxicological tests to ensure their safety.

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