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Sub-Saharan medicinal plants and their medical use: a semi-systematic review

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SUPPLEMENTARY METERIAL

Supplementary Table 1. List of the most frequently cited endemic plants with therapeutic potential, the associated chemical compounds, and the methods of administration in the 106 documents.

Family	Plants	Plant part used	Traditional administration	%	Chemical compounds
Asphodelaceae	*Aloe spp.*	Leaf gel	Topical application or oral intake	10.38%	Aloin, Aloinoside, Barbaloin, Polysaccharides, Flavonoids, Saponins
	Aloe ferox	Leaf exudate (latex), gel	Oral or topical	3.77%	Aloin, Aloinoside, Barbaloin, Polysaccharides, Flavonoids, Saponins
Moringaceae	*Moringa oleifera*	Leaves, seeds, roots	Decoction, infusion, powder	10.38%	Isothiocyanates, Flavonoids (quercetin, kaempferol), Glucosinolates, Vitamins, Minerals
Zingiberaceae	*Zingiber officinale*	Rhizome	Infusion, juice, chewed fresh	6.60%	Gingerol, Shogaol, Paradol, Zingerone, Terpenoids, Alkaloids
	Curcuma longa	Rhizome	Paste, infusion, oral	4.72%	Curcumin, Demethoxycurcumin, Bisdemethoxycurcumin, Terpenoids, Phenols
Amaryllidaceae	*Allium sativum*	Bulb	Crushed raw, infusion	5.66%	Allicin, Alliin, Organosulfur compounds, Polyphenols, Vitamins
Asteraceae	*Vernonia spp.*	Leaves	Juice, decoction	11.32%	Sesquiterpenes, Lignans, Flavonoids, Triterpenes, Alkaloids
	Artemisia annua	Leaves	Infusion, dried powder	5.66%	Artemisinin, Arteannuin, Arteannuoside, Terpenoids, Flavonoids
	Dicoma anomala	Leaves, roots	Infusion, smoke	3.77%	Sesquiterpenes, Flavonoids, Alkaloids, Triterpenes, Phenolic compounds
	Microglossa pyrifolia/ pyrifolia	Leaves	Decoction	2.83%	Flavonoids, Triterpenes, Alkaloids, Phenolic compounds, Saponins

Apocynaceae	*Catharanthus roseus*	Leaves, roots	Infusion, juice	4.72%	Vinblastine, Vincristine, Indole alkaloids, Flavonoids, Terpenoids
Meliaceae	*Azadirachta indica* (Neem)	Leaves, bark, seeds	Decoction, paste	4.72%	Azadirachtin, Nimbin, Salannin, Limonin, Terpenoids, Flavonoids
Rutaceae	*Ruta chalepensis*	Leaves	Smoke, infusion	6.60%	Rutin, Quercetin, Apigenin, Flavonoids, Essential oil
	Fagara zanthoxyloides	Bark, roots	Chewing, decoction	3.77%	Xanthoxyletin, Xanthoxylol, Flavonoids, Alkaloids, Phenolic compounds
Caricaceae	*Carica papaya*	Fruit, leaves, seeds	Raw consumption, juice	4.72%	Papain, Chitinase, Lipase, Vitamins (A, C), Minerals
Solanaceae	*Withania somnifera*	Roots	Powder, infusion	4.72%	Withanolides (withaferin A), Steroids, Alkaloids,Flavonoids
Combretaceae	*Terminalia prunioides*	Bark, leaves	Decoction	4.72%	Ellagitannins, Gallic acid, Tannins, Flavonoids, Saponins
Ranunculaceae	*Nigella sativa*	Seeds	Oil, powder, infusion	4.72%	Thymoquinone, Thymohydroquinone, Thymol, Essential oil
Verbenaceae	*Lippia javanica*	Leaves	Tea, inhalation	4.72%	Monoterpenes, Sesquiterpenes, Flavonoids, Essential oil
Lamiaceae	*Ocimum gratissimum*	Leaves	Tea, poultice	4.72%	Eugenol, Citral, Linalool, β-Caryophyllene, Essential oil
Annonaceae	*Annona muricata*	Leaves, fruit	Juice, infusion	4.72%	Annonic acid, Annonain, Flavonoids, Terpenoids
	Xylopia aethiopica	Fruits, seeds	Chewing, smoke, decoction	4.72%	Xylopin, Xylopic acid, Flavonoids, Terpenoids
Solanaceae	*Solanum macrocarpon*	Leaves, fruits	Boiled vegetable, poultice	4.72%	Solasodine, Solasonine, Solamargine, Flavonoids
Myrtaceae	*Eucalyptus globulus*	Leaves	Inhalation, tea	4.72%	Eucalyptol, Citronellol, α-Pinene, Essential oil
	Psidium guajava	Leaves, fruit	Tea, poultice	3,77%	Guaijaverin, Flavonoids, Polyphenols, Vitamin C
Lamiaceae	*Thymus vulgaris*	Leaves	Tea, oil, vapor	3.77%	Thymol, Carvacrol, Linalool, α-Thujone, Essential oil
	Tetradenia riparia	Leaves	Infusion, smoke	3.77%	Sesquiterpenes, Flavonoids, Alkaloids, Phenolic compounds

	Clerodendrum rotundifolium	Leaves, roots	Decoction	3.77%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Premna schimperi	Leaves, bark	Decoction	2.83%	Flavonoids, Triterpenes, Alkaloids, Phenolic compounds
	Leonotis nepetifolia	Leaves, flowers	Tea, smoked	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins
Fabaceae	*Senna hirsuta*	Leaves, pods	Infusion	3.77%	Anthraquinones, Flavonoids, Alkaloids, Phenolic compounds
	Calliandra portoricensis	Leaves, roots	Decoction	3.77%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Bauhinia purpurea	Leaves, flowers	Infusion, poultice	3.77%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Acacia nilotica	Bark, pods	Chewing, powder	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Erythrina abyssinica	Roots, bark	Decoction	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Dichrostachys cinerea	Leaves, bark	Decoction	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins
	Indigofera daleoides	Leaves, roots	Infusion	2.83%	Indirubin, Indigotin, Flavonoids, Alkaloids
	Albizia adianthifolia	Bark, roots	Decoction	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins
Piperaceae	*Piper guineense*	Seeds	Chewing, spice	3.77%	Piperine, Alkaloids, Flavonoids, Essential oil
Musaceae	*Musa spp.*	Fruit, leaves	Raw, boiled	3.77%	Polyphenols, Vitamins (B6, C), Minerals (K, Mg)
Anacardiaceae	*Mangifera indica*	Leaves, bark, fruit	Juice, decoction	3.77%	Mangiferin, Flavonoids, Polyphenols, Vitamin C
Convolvulaceae	*Ipomoea involucrata/ Ipomoea batatas*	Tubers, leaves	Boiled, eaten raw	3.77%	Ipomoerin, Ipomoein, Flavonoids, Vitamin A
	Ipomoea batatas	Tubers, leaves	Boiled, eaten raw	3.77%	Ipomoerin, Ipomoein, Flavonoids, Vitamin A

Poaceae	*Cymbopogon citratus*	Leaves	Tea, steam inhalation	3.77%	Citral, Geraniol, Myrcene, Essential oil
Combretaceae	*Combretum nigricans*	Leaves, bark	Decoction	3.77%	Flavonoids, Triterpenes, Alkaloids, Saponins
Brassicaceae	*Brassica carinata*	Leaves, seeds	Vegetable, oil	2.83%	Glucosinolates, Sinigrin, Progoitrin, Flavonoids
Malvaceae	*Abelmoschus esculentus*	Fruit	Cooked vegetable	2.83%	Polyphenols, Flavonoids, Vitamins (C, K), Minerals
Sapotaceae	*Vitellaria paradoxa*	Fruit pulp, butter	Topical, oral	2.83%	Vitellin, Flavonoids, Triterpenes, Phenolic compounds
Urticaceae	*Urtica simensis*	Leaves	Decoction, cooked	2.83%	Flavonoids, Triterpenes, Alkaloids, Saponins

Supplementary Table 2. Results identified in articles published in peer-reviewed journals with an impact factor >5.

Source	**N° spp.**	**Prev. family (%)**	**Main indications**	**Extracts/ methods**	**Key findings**	**Administration /notes**
PMID: 37301306	83 spp.	Leguminosae (25.3%)	HIV/AIDS and related symptoms	CAM (trad. use)	4 spp. for HIV, 7 spp. for HIV-related symptoms; 25 spp. (30.1%) unreported in literature	-
PMID: 39931513	n/s	n/s	Diarrhea (exp. model)	HM-E, EtOAc, Aq, Hex fr.	Significant inhibition of wet/total defecation, enteropooling, and intestinal motility ($p<0.05$-0.001)	Animal model (mg/kg)
PMID: 37644587	48 spp.	n/s	Malaria and symptoms	Dec (41.8%), Inf (23.6%)	*Aloe vera*, *Azadirachta indica*, *Vernonia amygdalina* most cited	Oral (89.6%), bathing (10.4%), leaves most used (74%)
PMID: 38681195	n/s	n/s	Snake venom toxins (BAV, NAV, NSV)	DCM, Hex, EtOAc, MeOH fr./ext; 96-well, egg yolk assay	svPLA$_2$ inhibition >90% by various extracts (*e.g.*, *C. africana*, *V. glabra*, *Z. usambarense*); EC_{50} as low as 3.51 µg/mL	Cytotoxicity only in some extracts; A. salina non-cytotoxic
PMID: 37884931	108 taxa	*Fabaceae* (20%)	62 conditions (trad. use)	Ethnobotany, RI, JI, RSI	72 undocumented uses (27%); 13 taxa with RI >50%	Cultural overlap (Lango, Teso, Acholi) explored

PMID: 0468310	97 spp.	*Asteraceae* (15.5%)	Malaria	Dec (54%), Inf (26%)	Most mentioned: *A. vera*, *V. amygdalina*, *A. annua*; UV ranged 0.14-0.4	Oral (almost always); duration 3-7 days; dose 5-500 mL, 3/day
PMID: 37303066	45 spp.	n/s	Malaria	Maceration (56%)	Most mentioned: *V. amygdalina*, *W. ugandensis*, *A. indica*, etc.	-

spp., species; n/s, not specified; CAM, complementary and alternative medicine; HM-E, hydro-methanolic extract; EtOAc, ethyl acetate; Aq, aqueous; Hex, hexane; fr., fraction; ext., extract; Dec, decoction; Inf, infusion; UV, use value; RI, relative importance; JI, Jaccard Index; RSI, Rahman Similarity Index; svPLA$_2$, snake venom phospholipase A2; BAV, NAV, NSV, *Bitis arietans venom*, *Naja annulifera venom*, *Naja subfulva venom*; EC_{50}, half maximal effective concentration; TMPs, traditional medicine practitioners; *A. salina*, *Artemia salina* (cytotoxicity model).