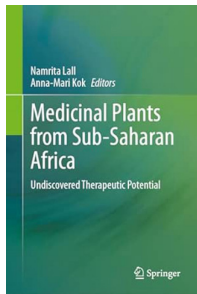




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BOOK TITLE:

Medicinal Plants from Sub-Saharan Africa: Undiscovered Therapeutic Potential



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Unravelling the therapeutic potential of selected medicinal plants from sub-Saharan Africa

Medicinal plant products have been centre stage of modern-day drug discovery. From the discovery of the anti-leukemic vinca alkaloids, vincristine (Oncovin) and vinblastine (Velban) from *Catharanthus roseus* (Madagascar periwinkle) leaves in the 1950s, to the anti-ovarian cancer taxol (Paclitaxel) from *Taxus brevifolia* (Pacific yew) bark in the 1960s, and the antimalarial artemisinin (Qinghaosu) from *Artemisia annua* (sweet wormwood) leaves in the 1970s.¹ Evidence has emerged that medicinal plants possess inexhaustible chemical constituents with remarkable therapeutic properties, lending credence to traditional (herbal) medicine practice across the globe. One strategy to uncover more plant-derived bioactives as drug candidates is to explore endemic plant species in florally diverse regions. Sub-Saharan Africa accounts for approximately 20 000 plant species, about 10% of the world's flora, and has a record-high 70% endemism.²

It is on this premise that Lall and Kok report the therapeutic potential of some medicinal plants from sub-Saharan Africa through their book *Medicinal Plants from Sub-Saharan Africa: Undiscovered Therapeutic Potential*. The book is a compilation on 21 underexplored medicinal plants from sub-Saharan Africa for the purpose of unravelling their therapeutic potential. The objectives were to (1) uncover each plant's identity and distribution, (2) determine its ethnomedicinal usage, (3) obtain the phytochemical profile, (4) evaluate its pharmacological and toxicological properties and (5) unravel its pharmaceutical/druggable potential. The authors adopted the pharmacopoeia standardisation method to describe the various botanicals.

The underexplored plants detailed are *Aloe arborescence* Miller, *Barleria obtusa* Nees., *Barleria repens* Nees., *Buddleja salviifolia* (L.) Lam., *Bulbine frutescens* (L.) Willd., *Carpobrotus dimidiatus* (Haw.) L. Bolus, *Cotyledon orbiculata* L. var. *oblonga* (Haw.) DC., *Cussonia spicata* Thunb., *Elegia tectorum* (L. f.) Moline & H. P. Linder, *Geranium incanum* Burm.f. var. *incanum* and var. *multifidum* (Sweet) Hilliard and Burtt, *Helichrysum kraussii* Sch.Bip., *Heteropyxis natalensis* Harvey, *Hypoestes aristata* (Vahl) Roem. & Schult., *Hypoestes forskoalii* (Vahl) R.Br., *Juncus lomatophyllus* Spreng., *Leucosidea sericea* Eckl. & Zeyh., *Pelargonium citronellum* J.J.A. Van der Walt, *Pelargonium graveolens* (Thumb) L'Heritier, *Portulacaria afra* Jacq., *Salvia aurea* L., and *Tylosema esculentum* (Burchell) A. Schreiber.

Herbal medicine is becoming more popular, and with the high volume of folkloric claims, there are bound to be problems of misinformation, adulteration and substitution in the medicinal use of plants. Therefore, concise and up-to-date information on the botanical, organoleptic and ethnomedicinal properties of the plant species has been provided through this book to nip the problems in the bud. Additionally, the book offers a well-delineated taxonomic presentation of the medicinal plants, with subspecies or varieties in some instances, such as *Cotyledon orbiculata* L. var. *oblonga* and *Geranium incanum* Burm.f. var. *incanum* and var. *multifidum*. It is worth mentioning that the book was written by authors from a South African university, and the reported medicinal plants are endemic to South Africa. This, in my opinion, has afforded the authors first-hand knowledge, as evidenced by the high-quality chemical fingerprints obtained by thin-layer chromatography and preparative thin-layer chromatography.

The book provides sufficient information on the local names of the plants, the ailments they are known to cure or manage, the plant parts used, and the mode of herbal preparation in southern Africa. It reports that leaves are the plant parts used in many instances, corroborating previous ethnomedicinal findings³, while inflammation-related ailments, such as wounds, burns and coughs, feature prominently among the disease remedies reported. Thus, Indigenous knowledge of the ethnomedicinal use of the 21 plants can be preserved through this scientific document. However, safeguarding Indigenous knowledge cannot guarantee new drug discovery; more importantly, discovery involves subjecting ethnomedicines to contemporary scientific inquiry to gather sufficient empirical evidence of their safety and efficacy.

Therefore, this book further reports on the pharmacological and toxicological properties of the selected plants, their phytochemistry, possible clinical data, and proposed pharmaceutical products. Many of the plants were reported to show notable anti-inflammatory, antimicrobial, and anticancer activities. This may not be far-fetched, as studies have shown that inflammation plays a key role in the aetiology of microbial infections and cancer.⁴ This insight may also justify the popular ethnomedicinal usage of the plants against wounds. The reported pharmacological properties of the plants may partly be attributed to their putative chemical constituents, such as quercetin, myricetin and luteolin (flavonoids), rutin, myricetin-3-O-galactoside and laricitrin-3-O-galactoside (flavonoid glycosides), aloe-emodin and gaboroquinone A&B (anthraquinones), caffeic, ferulic and p-hydroxycinnamic acids (phenolic acids), hinokinin, cubebin and sesamin (lignans), α -amyrin, β -amyrin, lupeol, betulin and ursolic acid (triterpenoids), oleanolic acid glucosides, orbicucosides A-C and tyledoside C (saponins), geranin A and geraniin (tannins), and citronellol, geraniol, linalool and β -caryophyllene (essential oils). Based on the available scientific evidence, possible products that can be developed from the plants are topical antibacterial, antifungal, and/or anti-inflammatory ointments or creams. However, the book contains limited toxicological and clinical information on the reviewed plants, leaving gaps that could be explored to fully harness their therapeutic potential.

This book will be a useful addition to students, researchers and natural product enthusiasts in South Africa and the rest of the world in the immediate term and for the foreseeable future. For the readers' interest, a schematic representation of the book is presented in Figure 1.

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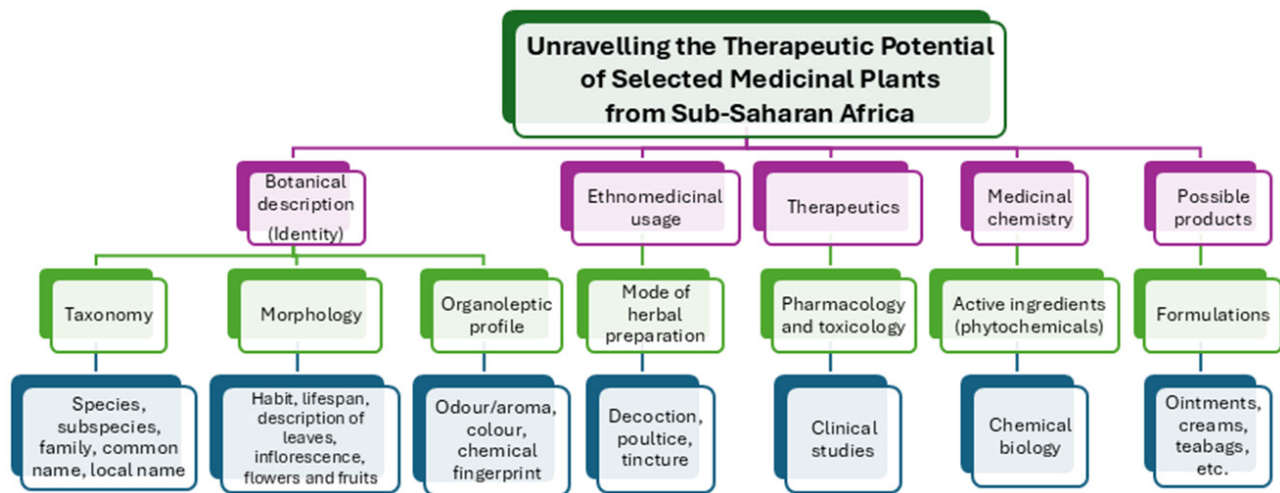


Figure 1: Schematic representation of the book edited by Lall and Kok.

References

1. Seidel V. Plant-derived chemicals: A source of inspiration for new drugs. *Plants*. 2020;9(11), Art. #1562. <https://doi.org/10.3390/plants9111562>
2. Van Wyk AS, Prinsloo G. Medicinal plant harvesting, sustainability and cultivation in South Africa. *Biol Conserv*. 2018;227:335–342. <https://doi.org/10.1016/j.biocon.2018.09.018>
3. Muhidin T, Letebrhan B, Tadesse G, Patrick VD. Ethnobotanical study of medicinal plants in Adwa District, Central Zone of Tigray Regional State, Northern Ethiopia. *J Ethnobiol Ethnomed*. 2021;17, Art. #71. <https://doi.org/10.1186/s13002-021-00498-1>
4. Kouzu K, Tsujimoto H, Kishi Y, Ueno H, Shinomiya N. Role of microbial infection-induced inflammation in the development of gastrointestinal cancers. *Medicines (Basel)*. 2021;8(8), Art. #45. <https://doi.org/10.3390/medicines8080045>