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Medicinal plants from the genus *Acalypha* (Euphorbiaceae) – A review of their ethnopharmacology and phytochemistry

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Abstract

Ethnopharmacological relevance: *Acalypha* is the fourth largest genus of the Euphorbiaceae family with approximately 450 to 570 species. Several *Acalypha* species are used as medicinal plants in Africa and in the Mascarene Islands. Almost every part of the plant including the leaves, stem and roots are used as traditional remedies to treat and manage a panoply of ailments. However, there is no updated compilation of traditionally important medicinal plants from the *Acalypha* genus. The present review therefore, endeavours to provide for the first time an updated compilation of documented ethnopharmacological information in relation to the ethnomedicinal, ethnoveterinary, zoopharmacognosy, phytochemistry and biological activities of medicinal plants from the *Acalypha* genus which can subsequently open new perspectives for further pharmacological research.

Materials and methods: A literature search was performed on *Acalypha* species using ethnobotanical text books and scientific databases such as Pubmed, Scopus, EBSCO, Google Scholar and other web sources such as records from PROTA, PROSEA, and Botanical Dermatology Database. The Plant List, International Plant Name index and Kew Botanical Garden Plant name databases were used to validate scientific names.

Results and discussion: Plants from *Acalypha* genus are traditionally used in the treatment and/or management of diverse ailments such as diabetes, jaundice, hypertension, fever, liver inflammation, schistosomiasis, dysentery, respiratory problems including bronchitis, asthma and pneumonia as well as skin conditions such as scabies, eczema and mycoses. Approximately 124 species were listed in ethnobotanical studies with some botanical description and others mentioned from different web sources. However, only 40 species have been included in the present review due to the unavailability of ethnopharmacological data on the remaining species. Among the 40 cited species, 30 were traditionally used for the treatment and/or management of approximately 70 human diseases or health conditions. Two species, *A. alnifolia* and *A. fruticosa* are used as insecticides and sand fly repellent respectively. Only 2 species (*A. fruticosa* and *A. indica*) are used in ethnoveterinary practice and have similar human and veterinary applications. In zoopharmacognosy, only *A. ornata* has been mentioned. Natives from Africa, Central America, North America, Southern China, India, Bangladesh, Papua New Guinea and Mascarenes islands utilize *Acalypha* species as ethnomedicine. Traditionally used *Acalypha* species have been reported to possess at least one of the following biological activities: antimicrobial, anti-diabetic, antioxidant, anti-inflammatory, larvicidal, pupicidal, hepatoprotective,

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