

[PL 16] **Natural Products from Plant Diversity and their Potential in Management of Neglected Diseases**

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Introduction

Conventionally, neglected diseases are considered as a group of 13 infectious diseases that are endemic in the low income populations in the tropical developing world. They can be classified as those caused by trypanosomal parasites, helminthes, bacteria and viruses. They cause death to an estimated 0.5- 1m people annually. Trypanosomal diseases are represented by Kala-azar or visceral leishmaniasis, African sleeping sickness (African trypanosomiasis) and Chaga's disease (American trypanosomiasis); the current drugs for these diseases are relatively toxic even though the disease is not that lethal. Helminth infections include schistosomiasis treated with the inexpensive praziquantel but which cannot stop re-infection; onchocerciasis (river blindness), on which anthelmintic treatment is being tried; dracunculiasis (guinea worm), which should have been eradicated in 2009; lymphatic filiriasis (elephantiasis), managed by anthelmintic treatments. The others are soil transmitted worms such as ascariasis (round worms), trichuriasis (whipworms) and hookworms which are really best controlled by good hygienic practices. Leprosy, trachoma, Buruli ulcer and cholera represent the prevalent bacterial problems. Viral infections are yellow and dengue fevers caused by flavivirus transmitted by *Aedes aegyptii* and Japanese encephilitis caused by a flavivirus transmitted by *Culex tritaeniorhynchus*; the viral infections can be controlled through vaccination (WHO, 2008).

However the WHO Innovative and Intensified Disease management (WHO-IDM) group considers NTDs to be only: Buruli ulcer, Chaga's diseases, cholera, sleeping sickness and leishmaniasis. This is because they get less funding than the "big three" – HIV/AIDS, malaria and tuberculosis. However other groups led by Drugs for Neglected Diseases Initiative (DNDi) organization do not agree and consider African trypanosomiasis, leishmaniasis, Chaga's disease, and malaria as NTDs. This list leaves out Buruli ulcer but includes malaria with the argument that the disease does not receive adequate funding relative to its perilous effects on society. Their argument is that "neglected diseases" should be conditions that do not get enough funding relative to their impact on society (DNDi, 2003); in the presentation, this definition is considered to be the correct one.

Clearly there is African folklore (mostly, medicinal herbal concoctions) about management of these neglected diseases even though such information is mostly scattered and may have run out of vogue at the advent of "civilization". It would be pertinent to explore the potential of certain local herbs for the development of phytomedicines for local populations for the diseases. Such practices have been recorded in monographs such as Medicinal Plants of East Africa (MPEA) (Kokwaro 2009) and Kenya Trees and Shrubs (Beentje 1994).

Helminthiasis