

Title: Ethnomedicinal uses, biological activities, and toxicity of *Voacanga africana* Stapf Ex Scott-Elliot

Abstract

Voacanga africana, is a medicinal plant widely used in many African countries. Various parts of this plant are used, but more especially the seeds are held in high esteem for it's their additional economic value due to the presence of the alkaloids ibogaine, tabersonine, and voacangine. These alkaloids have peculiar medicinal uses in the treatment of psychotic ailments, drug addiction, and also serve as precursors for drug synthesis. *V. africana* is traditionally used to treat a myriad of diseases including malaria, worm infestation, amoebiasis, ulcers, pain, cardiovascular conditions, depression, fatigue, shortness of breath, diarrhoea, gynaecological conditions, delayed labour, kidney conditions, malaria, asthma and convulsions, however not all these have been investigated. Studies have demonstrate possible efficacy in the treatment of worm infestation, amoebiasis, ulcer, pain and inflammation, cardiovascular condition, depression, diarrhoea, onchocerciasis, mental disorder, and microbial infections. The plant also has CNS, neuro-protective, sedative, anti-microbial, anti-tumor and anti-oxidant activities. Further studies is however needed to verify its activity in the treatment of malaria, fatigue, gynaecological and, labour conditions, respiratory conditions and carious teeth. With respect to safety, the ethanolic leaf extract is reported to be relatively non-toxic with an estimated LD₅₀ of ≥ 5000 mg while the aqueous leaf extract had no significant alteration on the blood biochemistry or histopathology of essential organs in murine models. Some isolated alkaloids from this plant: vobtusine, voacangine and voacamine are however known to exhibit toxicity in the form of cardiac depressor activity, asphyxia and convulsions, hypertension and CNS depressant activities. In addition to alkaloids, the plant is also rich in saponins, tannins, terpenes, steroids, flavonoids, phenols, anthranoids, glycosides, and oils. This review therefore suggests the need for further robust and detailed investigations on the activity of the extracts and compounds of this plant and their potential toxicities.