

Plants used in traditional medicine in Bukoba Rural district in Tanzania were evaluated for their *in vitro* antimicrobial activities. Plant materials from eight plant species (*Harungana madagascariensis* (Lam) Poir., *Jatropha curcas* L., *Lantana trifolia* L., *Plectranthus barbatus* Andr., *Pseudospondias microcarpa* Engl., *Psorospermum febrifugum* Spach, *Teclea nobilis* Del. and *Vernonia adoensis* [Warp.] SL) were collected based on ethnomedical information provided by traditional herbal practitioners. Results of the study indicate that extracts from the eight plant species were active against at least one or more of the test organisms (*Bacillus subtilis*, *Staphylococcus aureus* [gram positive], *Escherichia coli*, *Pseudomonas aeruginosa* [gram negative] and *Candida albicans* [Yeast]). A profile of secondary metabolites (alkaloids, terpenoids, triterpenes, phenolics, tannins, flavonoids, anthraquinones, flavonols/flavones and /or chalcones, sterols and saponins) was obtained for three plant species (*Jatropha curcas* L., *Plectranthus barbatus* Andr., and *Pseudospondias microcarpa* Engl.). The paper discusses the probable therapeutic basis of these traditional plants based on their secondary metabolite profiles and for the first time draws research attention to Bukoba Rural district as a source for plants with potential pharmaceutical applications.